



US007571014C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (11172nd)

United States Patent

Lambourne et al.

(10) **Number:** **US 7,571,014 C1**

(45) **Certificate Issued:** **Sep. 1, 2017**

(54) **METHOD AND APPARATUS FOR CONTROLLING MULTIMEDIA PLAYERS IN A MULTI-ZONE SYSTEM**

(58) **Field of Classification Search**

None

See application file for complete search history.

(75) Inventors: **Robert A. Lambourne**, Santa Barbara, CA (US); **Nicholas A. J. Millington**, Santa Barbara, CA (US)

(56) **References Cited**

(73) Assignee: **SONOS, INC.**, Santa Barbara, CA (US)

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/013,882, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Reexamination Request:

No. 90/013,882, Dec. 27, 2016

Primary Examiner — Mary Steelman

Reexamination Certificate for:

Patent No.: **7,571,014**

Issued: **Aug. 4, 2009**

Appl. No.: **10/861,653**

Filed: **Jun. 5, 2004**

(57)

ABSTRACT

Techniques for controlling zone group and zone group characteristics such as audio volume in a multi-zone system are disclosed. The multi-zone system includes a number of multimedia players, each preferably located in a zone. A controller may control the operations of all of the zone players remotely from any one of the zones. Two or more zone players may be dynamically grouped as a zone group for synchronized operations. According to one aspect of the techniques, a zone group configuration can be managed, updated, modified via an interactive user interface provided in a controlling device. The zone group configuration may be saved in one of zone players. According to another aspect of the techniques, the audio volume control of a zone group can be performed individually or synchronously as a group.

Certificate of Correction issued Mar. 19, 2013

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/816,217, filed on Apr. 1, 2004, now Pat. No. 8,234,395.

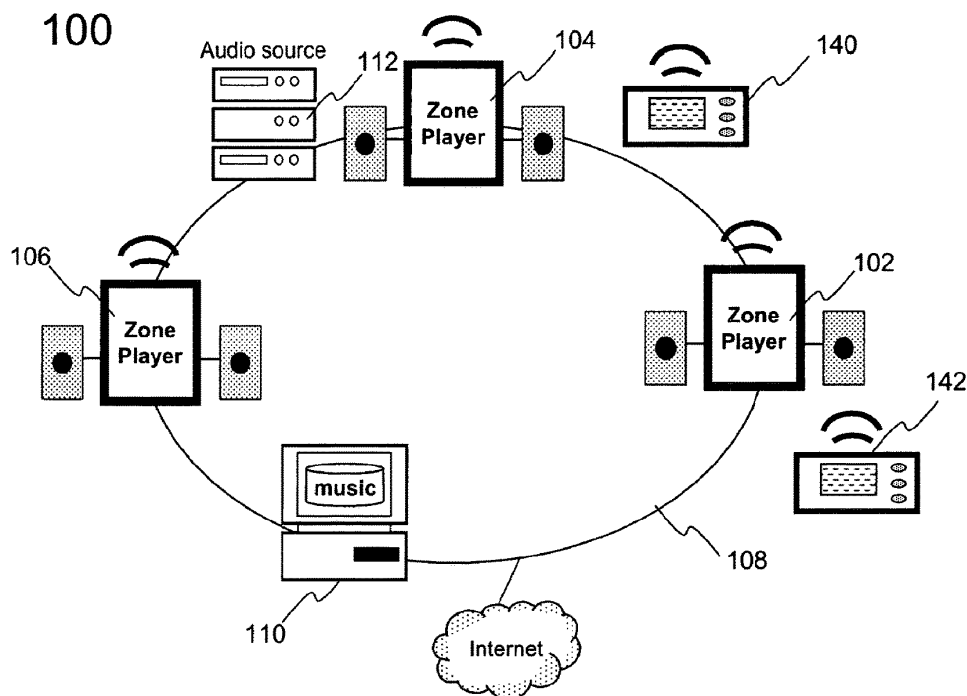
(51) **Int. Cl.**

H04R 27/00 (2006.01)

H04S 7/00 (2006.01)

(52) **U.S. Cl.**

CPC **H04R 27/00** (2013.01); **H04S 7/00** (2013.01); **H04R 2227/005** (2013.01)



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**EX PARTE
REEXAMINATION CERTIFICATE**

THE PATENT IS HEREBY AMENDED AS
INDICATED BELOW.

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims **16, 18, 21, 25** and **38** is confirmed.

Claim **1** is determined to be patentable as amended.

Claim **8**, dependent on an amended claim, is determined to be patentable.

Claims **2-7, 9-15, 17, 19, 20, 22-24, 26-37** and **39-44** were not reexamined.

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1. A method for controlling a plurality of players, the method comprising:

displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of **[slayers] players** synchronously in accordance with an adjustment made by a user.

* * * * *



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,882	12/27/2016	7571014	04-0601-REEXAM (15-536)	8704
107361 7590 08/03/2017 McDonnell Boehnen Hulbert & Berghoff LLP Sonos, Inc. 300 South Wacker Drive Chicago, IL 60606			EXAMINER STEELMAN, MARY J	
			ART UNIT 3992	PAPER NUMBER
			MAIL DATE 08/03/2017	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/013,882.

PATENT NO. 7571014.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

/Mary Steelman/

Primary Examiner

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PTOL-465 (Rev.07-04)

The present application is being examined under the pre-AIA first to invent provisions.

NOTICE OF INTENT TO ISSUE A REISSUE CERTIFICATE

This OFFICE ACTION is responsive to Remarks and amendments received 06/20/2017.

Claims 1, 8, 16, 18, 21, 25, and 38 of U.S. Pat. 7,571,014 (“Lambourne ‘014”) are subject to *ex parte* reexamination, of which claims 1, 16, 25, and 38 are independent.

Per Applicant’s request (06/20/2017), claim 1 is amended to correct a typo error. The limitation “slayers” is deleted and the correct limitation “players” is added.

Claims 2-7, 9-15, 17, 19, 20, 22-24, 26-37, and 39-44 are not subject to reexamination.

Information Disclosure Statement

IDS, 06/21/2017 (1); 06/29/2017 (13, labeled A-M) have been received and entered into the record. "With respect to the Information Disclosure Statements (PTO/SB/08A and 08B or its equivalent) considered with this action, the information cited has been considered as described in the MPEP. Note that MPEP 2256 and 2656 indicate that degree of consideration to be given to such information will be normally limited by the degree to which the party filing the information citation has explained the content and relevance of the information.

IDS submitted 04/25/2017 (3, labeled A-C); 04/26/2017 (3, labeled A-C); 04/28/2017 (1); 05/02/2017 (5, labeled A-E); 05/05/2017 (1) and 06/23/2017 (1); have been lined through and not considered because no Certificate of Service was received.

Litigation

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the patent under *ex parte* reexamination throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286. The third party requester is also reminded of the ability to similarly appraise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

Litigation was found by the office: Sonos Inc. v. D&M Holdings Inc. et al. 1:14cv1330.

Claim Terms

“zone player” / “playback device” / “player” - construed as “data network device configured to process and output audio”

“network interface” - construed as “physical component of a device that provides an interconnection with a data network”

Declaration of Andrew Wolfe, Ph. D.

The Office is in receipt of the Declaration of Dr. Wolfe, signed June 20, 2017, accompanied by a curriculum vitae evidencing skill in the art (further detailed in the Declaration at paragraphs 4-20).

Dr. Wolfe states (paragraphs 1-3) that he has been asked by the Patentee, Sonos, Inc., in the above-captioned Ex Parte Reexamination to opine on certain aspects of the technical references cited in the Non-Final Office Action mailed on April 20, 2017 (“the Office Action”), that he has submitted an Expert Report in the matter of Sonos, Inc. v. D&M Holdings et al, (D. Del., C.A. No. 14-1330-RGA) (“the related litigation”)... and that his opinions in this declaration are consistent with ...my Expert Report from the related litigation, limited to only address points raised in the Office Action specifically asked to opine upon.

Dr. Wolfe states (paragraphs 21-23) that he has reviewed and considered the specification, claims, and prosecution history of the U.S. Pat. 7,571,014 (Lambourne ‘014) including the Request for Ex Parte Reexamination, office actions and prior art references applied to rejections.

Dr. Wolfe reviews the abilities of Sonos’s multi-room audio system (paragraphs 24-30): “...the ability to adjust the volume of Sonos Zone Players in a group both individually and as a group...”

Dr. Wolfe opines (paragraph 30), “The use of an average value to represent group volume provides the user with a beneficial representation of the impact of volume adjustments. The average reflects both adjustments to the group as a whole and adjustments to individual players within the group. A group average representation can be made to appear linear or at least

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monotonic in response to individual adjustments and thus will seem natural to a user. Moreover, it is easy for a user to understand how to adjust all of the group members, and then to see the impact of individual adjustments on the total volume. Average group adjustments are also valuable when multiple players in a group can be heard from a single location in a user's home or office.

Paragraphs 31-53 address the UPnP references. Dr. Wolfe opines (paragraphs 32-33) the UPnP references do not describe configuring multiple UPnP Media Renderer devices into a group or controlling multiple UPnP Media Renderer devices as a group, let alone controlling the volume in a group-wise manner via a UPnP Control Point. The UPnP references do not teach or suggest "adjusting a volume meter represented by an averaged value of audio volumes of the players in the group" for at least the reasons that UPnP does not disclose (i) forming a group of Media Renderer devices or (ii) synchronized playback of content by multiple Media Renderer devices.

Dr. Wolfe opines (paragraph 34), "Establishing a connection between a UPnP Media Server and a UPnP Media Renderer does not amount to the claimed feature of "forming a zone group" because a UPnP Media Server is not a "player.""

Dr. Wolfe (paragraph 35) cites to UPnP AV, p. 5 for support that UPnP draws a clear distinction between the 'well-defined' roles of a UPnP Media Server component and a UPnP Media Renderer component. The UPnP Media Server component is "the source of the media content," whereas the UPnP Media Renderer component is the "sink for the content." Thus, the UPnP

Media Server's role is to supply media content to the UPnP Media Renderer over a network, and the UPnP Media Renderer's role is to "render" (i.e., "play") the content.

Dr. Wolfe states (paragraphs 36-37) "...the UPnP Media Server is only a "source of the media content...UPnP references do not teach or suggest a UPnP Media Server component that plays media content or even a UPnP Media Server component with a volume control...Because a UPnP Media Server does not play content, a UPnP Media Server does not amount to a "player" in the context of the claims.

Dr. Wolfe opines (paragraph 38) "...because a "zone group" as recited in the claims includes multiple "players," the combination of a UPnP Media Server and a UPnP Media Renderer does not amount to a "zone group"...the UPnP references do not teach or suggest the feature of "forming a zone group."

Dr. Wolfe references (paragraph 39) "...the example of "establish[ing] a connection between a first device with a UPnP Media server and a Second Device with a UPnP Media Renderer, to create a 'zone group'" proposed on p. 27 of the Request for Ex Parte Reexamination and repeated on p. 21 of the Office Action, the UPnP references describe no mechanism (via a UPnP Control Point or otherwise) for adjusting a volume for the UPnP Media Server and UPnP Media Renderer for at least the reason that the UPnP references do not disclose a UPnP Media Server that has a volume control.

Dr. Wolfe states (paragraphs 40-41), “The UPnP references also do not teach or suggest synchronized playback of content by multiple Media Renderer devices.” The UPnP references explicitly state:

Non-Goals

The UPnP AV Architecture does not enable any of the following:

Two-way Interactive Communication, such as audio and video conferencing, Internet gaming, etc.

Access Control, Content Protection, and Digital Rights Management

Synchronized playback to multiple rendering devices.

(UPnP AV Architecture: 1 Document Version 1.00, page 3)

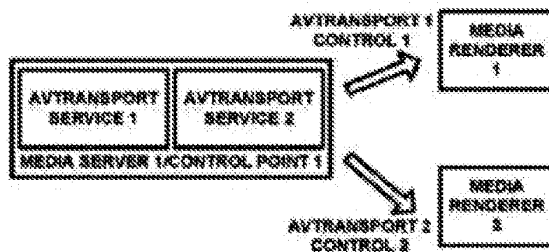
Dr. Wolfe opines (paragraphs 42-44), “The IEEE 1394 Isochronous-push Transfer Protocol (commonly known as FireWire) mentioned on p. 12 of UPnP AV is merely a transmission protocol, which is different than synchronizing playback of content among players... There is no reason for a UPnP Control Point to perform the feature of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” because UPnP does not disclose or describe forming a group of Media Renderer devices or synchronizing the playback of content by multiple Media Renderer devices.”

Dr. Wolfe opines (paragraph 45), “There is no evidence in the cited references that a person of skill in the art would have been motivated to “synchronously” adjust the volume of multiple UPnP Media Renderer devices in a group-wise fashion that are each playing different content,

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even when the separate UPnP Media Renderer devices receive the content from the same UPnP Media Server.”

Dr. Wolfe states (paragraphs 46-53), “The diagram on p. 31 of the Request for Ex Parte Reexamination showing a UPnP Media Server device sending content to two separate UPnP Media Renderer devices (reproduced below) was created by the third-party requestor.”



“This diagram is misleading and inaccurate — it does not appear anywhere in the UPnP references, and the functionality that the diagram suggests (as represented in the Request for Ex Parte Reexamination) is contrary to the express teachings of the UPnP references.”

Dr. Wolfe states (paragraphs 48-50). “UPnP Rendering Control does not teach or suggest that “separate devices can receive separate channels, and the channels can be controlled independently or as a whole” as stated on p. 28 of the Request for Ex Parte Reexamination and repeated on p. 28 of the Office Action. UPnP Rendering Control discloses a single UPnP Media Renderer device that can play an audio stream having multiple channels (e.g., a right and left channel), and that a UPnP Control Point can individually control the volume of each of the multiple channels (e.g., the “right channel” volume and the “left channel” volume) and the master volume of the single UPnP Media Renderer device. UPnP Rendering Control states that

“[t]he Rendering Control Service exposes a set of state variables that can be used to control the audio output of a device” — not multiple devices. UPnP Rendering Control, p. 41.”

Dr. Wolfe states (paragraphs 51-53), “Neither UPnP Media Renderer nor the other UPnP references teach or suggest a scenario with a first UPnP Media Renderer device playing a right channel, a second UPnP Media Renderer device playing a left channel, and a UPnP Control Point that adjusts a “master volume” that controls the volume on both the first and second UPnP Media Renderer devices as suggested in the third-party requestor’s misleading and inaccurate diagram on p. 31 the Request for Ex Parte Reexamination and repeated on p. 34 of the Office Action. Nothing in the UPnP references describes jointly controlling the volume of multiple playback devices. Using a UPnP Control Point to discover content on UPnP Media Server devices for playback on UPnP Media Renderer devices does not amount to “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. UPnP AV never describes a UPnP Media Server device as controlling the volume of a UPnP Media Renderer device. As described in the UPnP references, only a UPnP Control Point can control a UPnP Media Render device’s volume via a UPnP action. UPnP AV, pp. 6-7.”

Paragraphs 54-60 address the NexSys Software Manual. Dr. Wolfe states (paragraph 54 and footnote at page 13), “The NexSys software manual describes a user interface for controlling amplifiers.” A NexSys-controlled amplifier like the ones described in the NexSys software

manual does not amount to a “player” under the Markman Order issued by the District Court on January 12, 2017, in the related litigation. Additionally, the NexSys reference does not teach or suggest “synchronizing all the players in the zone group.”

Dr. Wolfe opines (paragraph 55), “The NexSys software manual does not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the reason that the volume control in NexSys is not “an averaged value of audio volumes of the players in the group.”

Dr. Wolfe cites to pp. 7.4 and 9.3 (paragraphs 56-59) for support, “The group fader in NexSys represents “a relative level to the amplifiers in the group,” (p. 9.3)...rather than “a volume meter represented by an averaged value of audio volumes of the players in the group”... or a “volume meter[... for the group of players, represented by an averaged value of audio volumes of the players in the group”... The example on p. 7.4 of NexSys shows attenuation levels for amplifiers rather than volume levels for “players”... The average value of the attenuation levels for the “Right Highs,” “Right Lows,” and “Right Subs” amplifier channels is about -20dB, but the attenuation level shown on the group fader controller appears to be about 0dB. NexSys, p. 7.4. Thus, the group fader controller shown on p. 7.4 of NexSys is not an averaged value of attenuation levels of the amplifiers in the group, much less “an averaged value of audio volumes of the players in the group”...”

Dr. Wolfe also addresses (paragraphs 60-63) the similarity of the example on p. 9.3 of NexSys “The example on p. 9.3 of NexSys shows a “Stage Right” fader that controls attenuation levels for set of amplifier channels, where the “fader ranges from +83dB to -83dB” and is “a relative

level to the amplifiers in its group.”... “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount.”... Thus, like the example on p. 7.4, the “Stage Right” fader on p. 9.3 is also not “an averaged value of audio volumes of the players in the group”...

Dr. Wolfe opines (paragraphs 64-65) that “...a person of ordinary' skill in the art would understand that an individual amplifier's attenuation level in the NexSys system would be set to -83dB at initial startup (minimum volume) rather than “zero” (maximum value). See, e.g., NexSys, p. 9.4 (figure showing all amplifiers at -83); p. 9.5 (showing “Group” volume control set to 0 and each amplifier's volume control set to -83). NexSys explains that “[e]ach amplifier channel's attenuator operates within a range from no attenuation (0dB) to full attenuation (-83dB).” NexSys, p. 9.1.” “The group fader in NexSys also does not represent “an averaged value of audio volumes of the players in the group” because a change to an individual amplifier's level does not result in a change to the group fader level.

Dr. Wolfe states (paragraphs 66-69), “NexSys describes a “control hierarchy” where adjusting the level of the group fader changes the levels of each amplifier in the group, but changing an individual amplifier's level does not result in a change the level of the group fader, NexSys, pp. 9.4-9.5”. “Arrows in the “Control Hierarchy Diagram” show one-way control from higher levels in the hierarchy to lower levels in the hierarchy. NexSys, pp. 9.4-9.5. Changes to faders in a lower level of the hierarchy do not result in changes to a fader at a higher level in the hierarchy.”

“Modifying the group fader in NexSys to represent “an averaged value of audio volumes of the players in the group” would result in a control scheme where positive and negative changes to the group fader level in NexSys would cause different magnitude increases and decreases for the amplifier channels controlled by the group fader.” “In a system like NexSys where a sound engineer has set amplifier levels relative to each other, an average control scheme that does not maintain the relative levels between the amplifiers in the group would undesirably change the balance that the audio engineer has set among the different amplifier channels (e.g., “Right Highs,” “Right Lows”, and “Right Subs,” shown on p. 7.4 of NexSys) when changing the overall attenuation level of the group of amplifier channels via the group fader.

Claim Rejections

Claims 1, 8, 16, 18, 21, 25, and 38 are rejected under 35 U.S.C. § 103 as obvious over the combination of (i) Universal Plug and Play (“UPnP”) AV Architecture:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP AV”); (ii) Universal Plug and Play (“UPnP”) RenderingControl: 1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP Rendering Control”); (iii) Universal Plug and Play (“UPnP”) MediaServer: 1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP Media Server”); (iv) Universal Plug and Play (“UPnP”) Device Architecture Ver. 1.0 (June 8, 2000) (“UPnP Architecture”); (v) Universal Plug and Play (“UPnP”) MediaRenderer: 1 Device Template Ver. 1.01 (June 25, 2002) (“UPnP Media Renderer”); and (iv) Microsoft Universal Plug and Play (UPnP) Client Support (Aug. 2001) (“MS UPnP”).

Claims 1, 8, 16, 18, 21, 25, and 38 are rejected under 35 U.S.C. § 103 as obvious over the combination of (i) U.S. Pub. 2002/0124097 (“Isley”); (ii) UPnP AV; (iii) UPnP Rendering Control; (iv) UPnP Media Server; (v) UPnP Architecture; (vi) UPnP Media Renderer; (vii) MS UPnP; and (viii) Crest Audio, NexSys Ver. 3.0 Software Manual (“NexSys”).

Claims 1, 8, 16, 18, 21, 25, and 38 are rejected under 35 U.S.C. § 103 as obvious over the combination of (i) U.S. Pat. 7,218,708 (“Berezowski”); (ii) U.S. Pub. 2002/0188762 (“Tomassetti”); (iii) Isley; (iv) UPnP AV; (v) UPnP Rendering Control; (vi) UPnP Media Server; (vii) UPnP Architecture; (viii) UPnP Media Renderer; (ix) MS UPnP; and (x) NexSys.

Response to Arguments based on the rejections of claims

Applicant argues (06/20/2017, pp. 16-31) “neither the UPnP references nor NexSys teach or suggest the group volume control features recited in the claims.” “The UPnP references do not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the reasons that UPnP does not disclose (i) forming a group of Media Renderer devices or (ii) synchronized playback of content by multiple Media Renderer devices”. Wolfe Dec., paragraphs 32-33. “...establishing a connection between a UPnP Media Server and a UPnP Media Renderer does not amount to the claimed feature of “forming a zone group” because a UPnP Media Server is not a “player.” Wolfe Dec., paragraph 34.

The NexSys software manual does not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the reason that the volume control in NexSys is not “an averaged value of audio volumes of the players in the group.” Wolfe Dec. paragraph 55.

[T]he group fader in NexSys represents “a relative level to the amplifiers in the group,” where “positive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount,” NexSys, p. 9.3, rather than “a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or a “volume meter[...] for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Wolfe Dec., paragraph 56.

Also, the group fader in NexSys does not represent “an averaged value of audio volumes of the players in the group” because a change to an individual amplifier’s level does not result in a change to the group fader level. Wolfe Dec., paragraph 65. NexSys has a “control hierarchy” where adjusting the level of the group fader changes the levels of each amplifier in the group, but changing an individual amplifier’s level does not result in a change to the level of the group fader. NexSys, pp. 9.4-9.5 (arrows in the “Control Hierarchy Diagram” show one-way control from higher levels in the hierarchy to lower levels in the hierarchy); Wolfe Dec., paragraphs 66-67. Indeed, NexSys explains that “[g]roup and plan level settings are not saved. They are simply relative controls.” NexSys, p. 9.3. Thus, rather than representing “an averaged

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value of audio volumes of the players in the group,” the level of the group fader in NexSys is simply a “relative level” that is not based on the “value of audio volumes of the players in the group,” averaged or otherwise. Wolfe Dec., paragraphs 55-69.

A NexSys-controlled amplifier like the ones described in the NexSys software manual does not amount to a “player” under the Markman Order issued by the District Court on January 12, 2017, in the related Sonos, Inc. v. D&M Holdings et al., (D. Del., C.A. No. 14-1330-RGA) litigation. Additionally, the NexSys reference does not teach or suggest “synchronizing all the players in the zone group.”

Applicant argues (06/20/2017, p. 20) the § 103 rejections based on UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, NexSys, Berezowski, and Tomassetti (the “cited references”) fail to teach or suggest at least: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25; and (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

Applicant arguments and reasoning align with expert opinion found in the Declaration of Dr. Wolfe.

Examiner Response

The Examiner is persuaded by reasoning detailed in the Declaration of Dr. Wolfe, similarly recited by Applicant Arguments.

Claims 1, 8, 16, 18, 21, 25, and 38 are confirmed / found patentable.

Reasons for Allowance

Regarding independent claims 1 and 25, neither the UPnP references, NexSys, nor Isely teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” in combination with the limitations of the claim as a whole.

Regarding independent claims 16 and 38, neither the UPnP references, NexSys, nor Isely teach or suggest “adjusting one of the volume meters... for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the limitations of the claim as a whole.

Other prior art applied in the rejections, Berezowski and Tomassetti, were not relied upon and do not teach the above noted features.

Summary

Claim 1 is amended.

Claims 1, 8, 16, 18, 21, 25, and 38 of U.S. Pat. 7,571,014 (“Lambourne ‘014”) are confirmed / found patentable.

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Per Applicant's request (06/20/2017), claim 1 is amended to correct a typo error. The limitation "slayers" is deleted and the correct limitation "players" is added.

Claims 2-7, 9-15, 17, 19, 20, 22-24, 26-37, and 39-44 are not subject to reexamination.

Any comments considered necessary by the Patent Owner regarding the above statement must be submitted promptly to avoid processing delays. Such submission by the Patent Owner should be labeled: "Comments on Statement of Reasons for Patentability and/or Confirmation" and will be placed in the reexamination file.

Service of Papers

Any paper filed with the USPTO, i.e., any submission made, by either the Patent Owner or the Third Party Requester must be served on every other party in the reexamination proceeding, including any other third party requester that is part of the proceeding due to merger of the reexamination proceedings. As proof of service, the party submitting the paper to the Office must attach a Certificate of Service to the paper, which sets forth the name and address of the party served and the method of service. Papers filed without the required Certificate of Service may be denied consideration. See 37 CFR 1.550(0

Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination

proceeding. Additionally, 35 U.S.C. 305 requires that reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extension of time in ex parte reexamination proceedings are provided for in 37 CFR 1.550(c). A request for extension of time must be filed on or before the day on which a response to this action is due, and it must be accompanied by the petition fee set forth in 37 CFR 1.17(g). The mere filing of a request will not affect any extension of time. An extension of time will be granted only for sufficient cause, and for a reasonable time specified.

All correspondence relating to this ex parte reexamination proceeding should be directed:

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Any inquiry concerning this communication or earlier communications from the examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Application/Control Number: 90/013,882
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/Mary Steelman/

Primary Examiner CRU 3992

Conferee:

/RSD/

/ALEXANDER KOSOWSKI/

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Attorney Docket Number	04-0601-REEXAM

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26	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 11: Defendants' Invalidity Contentions for U.S. Design Patent No. D559,197 filed September 27, 2016, 52 pages.	☐
27	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 2: Defendants' Invalidity Contentions for U.S. Patent No. 8,588,949 filed September 27, 2016, 224 pages.	☐
28	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 3: Defendants' Invalidity Contentions for U.S. Patent No. 8,843,224 filed September 27, 2016, 147 pages.	☐
29	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 4: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,312 filed September 27, 2016, 229 pages.	☐
30	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 5: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,637 filed September 27, 2016, 213 pages.	☐
31	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 6: Defendants' Invalidity Contentions for U.S. Patent No. 9,042,556 filed September 27, 2016, 162 pages.	☐
32	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,195,258 filed September 27, 2016, 418 pages.	☐
33	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 8: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed September 27, 2016, 331 pages.	☐

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- ☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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90013882 - GAU: 3992

Doc code: IDS

PTO/SB/08a (03-15)

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U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	Final Office Action mailed on 02 June 2017, issued in connection with U.S. Patent Application No. 13/848932, filed on 22 March 2013, 32 pages	☐
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☐ See attached certification statement.

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Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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Filing Date	2016-12-27
First Named Inventor	
Art Unit	3992
Examiner Name	STEELMAN, Mary J.
Attorney Docket Number	04-0601-REEXAM

12	Non-Final Office Action mailed on 30 November 2016, issued in connection with U.S. Patent Application No. 15/243186, filed on 22 August 2016, 12 pages	☐
13	Non-Final Office Action mailed on 30 September 2016, issued in connection with U.S. Patent Application No. 13/864249, filed on 17 April 2013, 12 pages	☐
14	North American MPEG-2 Information, "The MPEG-2 Transport Stream," Retrieved from the Internet: URL: http://www.coolstf.com/mpeg/#ts , 2006, pp. 1-5.	☐
15	Notice of Allowance mailed 31 January 2013, issued in connection with U.S. Patent Application No. 13/298090, filed on 16 November 2011, 19 pages	☐
16	Notice of Allowance mailed on 01 December 2016, issued in connection with U.S. Patent Application No. 15/088283, filed on 01 April 2016, 9 pages	☐
17	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/088532, filed on 01 April 2016, 9 pages	☐
18	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/088678, filed on 01 April 2016, 9 pages	☐
19	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/089758, filed on 04 April 2016, 9 pages	☐
20	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/155149, filed on 16 May 2016, 9 pages	☐
21	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 17 pages	☐
22	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 19 pages	☐

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23	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 14/184935, filed on 20 February 2014, 23 pages	☐
24	Notice of Allowance mailed on 03 April 2017, issued in connection with U.S. Patent Application No. 15088678, filed on 01 April 2016, 8 pages.	☐
25	Notice of Allowance mailed on 03 September 2015, issued in connection with U.S. Patent Application No. 13/705174, filed on 05 December 2012, 4 pages.	☐
26	Notice of Allowance mailed on 04 August 2015, issued in connection with U.S. Patent Application No. 14/516867, filed on 17 October 2014, 13 pages	☐
27	Notice of Allowance mailed on 05 October 2012, issued in connection with U.S. Patent Application No. 13/204511, filed on 05 August 2011, 11 pages	☐
28	Notice of Allowance mailed on 06 March 2014, issued in connection with U.S. Patent Application No. 13/827653, filed 14 March 2013, 17 pages	☐
29	Notice of Allowance mailed on 06 May 2011, issued in connection with U.S. Patent Application No. 11/801468, filed 09 May 2007, 10 pages.	☐
30	Notice of Allowance mailed on 06 September 2013, issued in connection with U.S. Patent Application No. 13/619237, filed on 14 September 2012, 10 pages	☐
31	Notice of Allowance mailed on 07 April 2016, issued in connection with U.S. Patent Application No. 13/533105, filed on 26 June 2012, 40 pages	☐
32	Notice of Allowance mailed on 07 December 2016, issued in connection with U.S. Patent Application No. 15/156392, filed on 17 May 2016, 9 pages	☐
33	Notice of Allowance mailed on 07 October 2015, issued in connection with U.S. Patent Application No. 14/184526, filed on 19 February 2014, 7 pages	☐

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34	Notice of Allowance mailed on 09 March 2017, issued in connection with U.S. Patent Application No. 15/080591, filed on 25 March 2016, 7 pages	☐
35	Notice of Allowance mailed on 09 October 2015, issued in connection with U.S. Patent Application No. 13/435739, filed on 30 March 2012, 4 pages.	☐
36	Notice of Allowance mailed on 10 August 2015, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 9 pages	☐
37	Notice of Allowance mailed on 10 February 2017, issued in connection with U.S. Application No. 14/290493, filed on 29 May 2014, 13 pages	☐
38	Notice of Allowance mailed on 10 November 2011, issued in connection with U.S. Patent Application No. 11/906702, filed on 02 October 2007, 17 pages	☐
39	Notice of Allowance mailed on 11 April 2016, issued in connection with U.S. Patent Application No. 13/864247, filed on 17 April 2013, 21 pages	☐
40	Notice of Allowance mailed on 11 January 2016, issued in connection with U.S. Patent Application No. 14/565544, filed on 09 December 2014, 5 pages	☐
41	Notice of Allowance mailed on 12 August 2015, issued in connection with U.S. Patent Application No. 13/435739, filed on 30 March 2012, 27 pages	☐
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43	Notice of Allowance mailed on 13 July 2015, issued in connection with U.S. Patent Application No. 14/184526, filed on 19 February 2014, 22 pages	☐
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45	Notice of Allowance mailed on 13 October 2015, issued in connection with U.S. Patent Application No. 13/864251, filed on 17 April 2013, 7 pages.	☐
46	Notice of Allowance mailed on 14 December 2016, issued in connection with U.S. Patent Application No. 15/088906, filed on 01 April 2016, 9 pages.	☐
47	Notice of Allowance mailed on 14 June 2012, issued in connection with U.S. Patent Application No. 12/035112, filed on 21 February 2008, 9 pages.	☐
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49	Notice of Allowance mailed on 15 March 2017, issued in connection with U.S. Patent Application No. 15/080716, filed on 25 March 2016, 7 pages.	☐
50	Notice of Allowance mailed on 16 June 2009, issued in connection with U.S. Patent Application No. 10/861653, filed on 05 June 2004, 11 pages.	☐

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EXAMINER SIGNATURE

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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PTO/SB/08a (03-15)

Doc description: Information Disclosure Statement (IDS) Filed

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1	Notice of Allowance mailed on 17 July 2015, issued in connection with U.S. Patent Application No. 13/864251, filed on 17 April 2013, 20 pages	☐
2	Notice of Allowance mailed on 19 May 2015, issued in connection with U.S. Patent Application No. 13/907666, filed on 31 May 2013, 7 pages	☐
3	Notice of Allowance mailed on 19 October 2016, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 14 pages	☐
4	Notice of Allowance mailed on 21 September 2015, issued in connection with U.S. Patent Application No. 13/297000, filed on 15 November 2011, 11 pages.	☐
5	Notice of Allowance mailed on 22 December 2016, issued in connection with U.S. Patent Application No. 15/080716, filed on 25 March 2016, 9 pages.	☐
6	Notice of Allowance mailed on 22 September 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 7 pages	☐
7	Notice of Allowance mailed on 24 September 2015, issued in connection with U.S. Patent Application No. 13/705174, filed on 05 December 2012, 7 pages.	☐
8	Notice of Allowance mailed on 24 September 2015, issued in connection with U.S. Patent Application No. 14/184935, filed on 20 February 2014, 7 pages	☐
9	Notice of Allowance mailed on 25 September 2014, issued in connection with U.S. Patent Application No. 14/176808, filed on 10 February 2014, 5 pages	☐
10	Notice of Allowance mailed on 27 August 2015, issued in connection with U.S. Patent Application No. 13/705177, filed on 05 December 2012, 34 pages.	☐
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12	Notice of Allowance mailed on 27 December 2011, issued in connection with U.S. Patent Application No. 10/816217, filed 01 April 2004, 15 pages	☐
13	Notice of Allowance mailed on 28 March 2017, issued in connection with U.S. Patent Application No. 15155149, filed on 16 May 2016, 7 pages.	☐
14	Notice of Allowance mailed on 29 July 2015, issued in connection with U.S. Patent Application No. 13/359976, filed on 27 January 2012, 28 pages	☐
15	Notice of Allowance mailed on 29 July 2015, issued in connection with U.S. Patent Application No. 14/186850, filed on 21 February 2014, 9 pages	☐
16	Notice of Allowance mailed on 30 August 2016, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 7 pages	☐
17	Notice of Allowance mailed on 30 July 2015, issued in connection with U.S. Patent Application No. 13/705178, filed on 05 December 2012, 18 pages	☐
18	Notice of Allowance mailed on 5 August 2015, issued in connection with U.S. Patent Application No. 13/435776, filed on 30 March 2012, 26 pages	☐
19	Notice of Allowance mailed on 6 July 2015, issued in connection with U.S. Patent Application No. 13/297000, filed on 15 November 2011, 24 pages.	☐
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24	PILLAI et al., "A Method to Improve the Robustness of MPEG Video Applications over Wireless Networks," Kent Ridge Digital Labs, 2000, 15 pages.	☐
25	Polycom Conference Composer User Guide, copyright 2001, 29 pages	☐
26	Pre-Interview First Office Action mailed on 10 March 2015, issued in connection with U.S. Patent Application No. 14/505027, filed on 02 October 2014, 4 pages.	☐
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28	PRISMIQ, Inc., "PRISMIQ Media Player User Guide," 2003, 44 pages.	☐
29	Proficient Audio Systems M6 Quick Start Guide, 2011, 5 pages.	☐
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31	Programming Interface for WL54040 Dual-Band Wireless Transceiver, AVAGO0066, Agere Systems, May 2004, 16 pages	☐
32	Radio Shack, "Auto-Sensing 4-Way Audio/Video Selector Switch," 2004, 1 page	☐
33	RadioShack, Pro-2053 Scanner, 2002 Catalog, part 1, 100 pages	☐

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34	RadioShack, Pro-2053 Scanner, 2002 Catalog, part 2, 100 pages	☐
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36	RadioShack, Pro-2053 Scanner, 2002 Catalog, part 4, 100 pages	☐
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38	RANGAN et al., "Feedback Techniques for Continuity and Synchronization in Multimedia Information Retrieval," ACM Transactions on Information Systems, 1995, pp. 145-176, Vol. 13, No. 2	☐
39	Real Time Control Protocol (RTCP) and Realtime Transfer Protocol (RTP), RFC 1889 (Jan. 1996) (D+M_0397810-84) (75 pages)	☐
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46	Renkus Heinz Manual; available for sale at least 2004, 6 pages	☐
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EXAMINER SIGNATURE

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Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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90013882 - GAU: 3992

Doc code: IDS

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Doc description: Information Disclosure Statement (IDS) Filed

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U.S.PATENTS								
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	1	2014149533	WO	A2	2014-09-25	BOSE CORPORATION		☐
	2	2014004182	WO		2014-01-03	SONOS, INC.		☐
	3	2012050927	WO		2012-04-19	BEYOND OBLIVION INC		☐

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4	2008114389	WO	A1	2008-09-25	PIONEER CORPORATION.		☐
5	2008082350	WO	A1	2008-07-10	SCANIA CV ABP [SE], et al.		☐
6	2007131555	WO		2007-11-22	SONY ERICSSON MOBILE COMMUNICATIONS AB.		☐
7	2007127485	WO		2007-11-08	MICROSOFT CORPORATION.		☐
8	2007023120	WO		2007-03-01	SONY ERICSSON MOBILE COMM AB [SE], et al.		☐
9	2005013047	WO	A2	2005-02-10	SONOS, INC.		☐
10	2003093950	WO	A2	2003-11-13	GOLDBERG, BENJAMIN, M. et al.		☐
11	200153994	WO		2001-07-26	FRISKIT, INC.		☐
12	199961985	WO		1999-12-02	THE DOW CHEMICAL COMPANY.		☐
13	2007135581	WO	A2	2007-11-29	KONINKL PHILIPS ELECTRONICS NV [NL], et al.		☐

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	2	UPnP AV Architecture:0.83 (June 12, 2002) (SONDM000115483-504) (22 pages)	☐
	3	UPnP Design by Example, A Software Developers Guide to Universal Plug and Play Michael Jeronimo and JackWeast, Intel Press (D+M_0401307-818) (April 2003) (511 pages)	☐
	4	WANCommonInterfaceConfig:1 Service Template Version 1.01 For UPnP, Ver. 1.0 (November 12, 2001) (D +M_0401820-43) (24 pages)	☐
	5	WANIPConnection:1 Service Template Version 1.01 For UPnP Ver. 1.0 (November 12, 2001) (D+M_0401844-917) (74 pages)	☐
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	7	WaveLan High-Speed Multimode Chip Set, AVAGO0003, Agere Systems, February 2003, 4 pages	☐
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	9	WaveLAN Wireless Integration Developer Kit (WI-DK) for Access Point Developers, AVAGO0054, Agere Systems, July 2003, 2 pages	☐
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Application Number	90013882
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Examiner Name	STEELMAN, Mary J.
Attorney Docket Number	04-0601-REEXAM

11	"Welcome. You're watching Apple TV." Apple TV 1st Generation Setup Guide, 8 April 2008 Retrieved 10/14/14, 40 pages	☐
12	"Welcome. You're watching Apple TV." Apple TV 2nd Generation Setup Guide, 10 March 2011 Retrieved 10/16/14, 36 pages	☐
13	"Welcome. You're watching Apple TV." Apple TV 3rd Generation Setup Guide, 16 March 2012 Retrieved 10/16/14, 36 pages	☐
14	WI-DK Release 2 WaveLan Embedded Drivers for VxWorks and Linux, AVAGO0056, Agere Systems, July 2003, 2 pages	☐
15	WI-DK Release 2 WaveLan END Reference Driver for VxWorks, AVAGO0044, Agere Systems, July 2003, 4 pages	☐
16	WI-DK Release 2 WaveLan LKM Reference Drivers for Linux, AVAGO0048, Agere Systems, July 2003, 4 pages	☐
17	Windows Media Connect Device Compatibility Specification (April 12, 2004) (16 pages)	☐
18	WPA Reauthentication Rates, AVAGO0063, Agere Systems, February 2004, 3 pages	☐
19	Yamaha DME 32 manual: copyright 2001.	☐
20	Yamaha DME 64 Owner's Manual; copyright 2004, 80 pages	☐
21	Yamaha DME Designer 3.5 setup manual guide; copyright 2004, 16 pages	☐

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23	Yamaha DME Designer software manual: Copyright 2004, 482 pages	☐
24	"Systemline Modular Installation Guide, Multiroom System," Systemline, 2003, pp. 1-22	☐

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Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
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1	Non-Final Office Action mailed 19 March 2013, issued in connection with U.S. Patent Application No. 13/724048, filed 21 December 2012, 9 pages	☐
2	Non-Final Office Action mailed 21 June 2011, issued in connection with U.S. Patent Application No. 10/816217, filed 01 April 2004, 13 pages	☐
3	Non-Final Office Action mailed 22 January 2009, issued in connection with U.S. Patent Application No. 10/816217, filed 01 April 2004, 18 pages	☐
4	Non-Final Office Action mailed 25 July 2014, issued in connection with U.S. Patent Application No. 14/184526, filed 19 February 2014, 9 pages	☐
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6	Non-Final Office Action mailed 25 June 2010, issued in connection with U.S. Patent Application No. 10/816217, filed 01 April 2004, 17 pages	☐
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8	Non-Final Office Action mailed 27 May 2014, issued in connection with U.S. Patent Application No. 14/186850, filed 21 February 2014, 13 pages	☐
9	Non-Final Office Action mailed 29 February 2012, issued in connection with U.S. Patent Application No. 13/297000, filed on 15 November 2011, 10 pages	☐
10	Non-Final Office Action mailed 29 November 2010, issued in connection with U.S. Patent Application No. 11/801468, filed on 09 May 2007, 17 pages	☐
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14	Non-Final Office Action mailed on 01 June 2016, issued in connection with U.S. Patent Application No. 14/184522, filed on 19 February 2014, 21 pages	☐
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25	Non-Final Office Action mailed on 08 March 2016, issued in connection with U.S. Patent Application No. 13/848921, filed on 22 March 2013, 13 pages	☐
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40	Non-Final Office Action mailed on 19 November 2014, issued in connection with U.S. Patent Application No. 13/848921, filed on 22 March 2013, 9 pages	☐
41	Non-Final Office Action mailed on 20 August 2009, issued in connection with U.S. Patent Application No. 11/906702, filed on 02 October 2007, 27 pages	☐
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46	Non-Final Office Action mailed on 22 September 2016, issued in connection with U.S. Patent Application No. 15/088906, filed on 01 April 2016, 9 pages	☐
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	2	6446080		2002-09-03	VAN; Ryzin John M. et al.	
	3	6526411		2003-02-25	WARD; Sean	
	4	6611813		2003-08-26	BRATTON; Timothy Robert	
	5	7006758		2006-02-28	YAMAMOTO; Kaoru et al.	
	6	7756743		2010-07-13	LAPCEVIC; Thomas G.	
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	1	20020015003		2002-02-07	KATO; Masami et al.	
	2	20020035621		2002-03-21	ZINTEL; William Michael et al.	
	3	20020194260		2002-12-19	HEADLEY; Kent Lawrence et al.	
	4	20030050058		2003-03-13	WALSH; Rod et al.	
	5	20030182254		2003-09-25	PLASTINA; Daniel et al.	
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11	Non-Final Office Action mailed on 10 April 2017, issued in connection with U.S. Patent Application No. 13/871785, filed on 26 April 2013, 10 pages
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21	Notice of Incomplete Re-Exam Request mailed on 25 May 2017, issued in connection with U.S. Patent Application No. 90/013959, filed on 01 April 2016, 10 pages
22	Pre-Brief Conference Decision mailed on 11 May 2017, issued in connection with U.S. Patent Application No. 14/504812, filed on 2 October 2014, 2 pages
23	Request for Ex Parte Reexamination submitted in U.S. Patent 9213357 on May 22, 2017, 85 pages
24	"Symantec pcAnywhere User's Guide," v 10.5.1, 1995-2002, 154 pages.

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Examiner Signature	/MARY J STEELMAN/ (07/11/2017)	Date Considered	07/11/2017
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	90013882
Filing Date	2016-12-27
First Named Inventor	
Art Unit	3992
Examiner Name	STEELMAN, Mary J.
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-06-23
Name/Print	Neilesh R. Patel	Registration Number	50918

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2016. OMB 0651-0031

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U.S.PATENTS						
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	2	7136934		2006-11-14	CARTER; Harry Nick et al.	
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

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Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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90013882 - GAU: 3992

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1	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Amended Answer, Defenses, and Counterclaims for Patent Infringement, filed November 30, 2015, 47 pages
2	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Answer to Plaintiff's Second Amended Complaint, filed April 30, 2015, 19 pages
3	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Brief in Support of their Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided October 12, 2016, 24 pages.
4	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' First Amended Answer to Plaintiffs' Third Amended Complaint, filed September 7, 2016, 23 pages.
5	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Opposition to Sonos's Motion to Strike Defendants' New Amended Answer Submitted with their Reply, provided October 3, 2016, 15 pages.
6	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Reply in Support of Partial Motion for Judgment on the Pleadings, filed June 10, 2016, 15 pages
7	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit A: Defendants' Second Amended Answer to Plaintiffs' Third Amended Complaint, filed September 9, 2016, 43 pages
8	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit A: Defendants' Second Amended Answer to Plaintiffs' Third Amended Complaint, provided October 12, 2016, 43 pages.
9	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit B: Defendants' Second Amended Answer to Plaintiffs' Third Amended Complaint, provided October 12, 2016, 43 pages.
10	Sonos, Inc. v. D&M Holdings Inc. et al., First Amended Complaint for Patent Infringement, filed December 17, 2014, 26 pages
11	Sonos, Inc. v. D&M Holdings Inc. et al., Joint Claim Construction Chart, Volume 1 of 3 with Exhibits A-O, filed August 17, 2016, 30 pages

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12	Sonos, Inc. v. D&M Holdings Inc. et al., Opening Brief in Support of Defendants' Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct, provided August 1, 2016, 11 pages.
13	Sonos, Inc. v. D&M Holdings Inc. et al., Opening Brief in Support of Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter, filed May 6, 2016, 27 pages.
14	Sonos, Inc. v. D&M Holdings Inc. et al., Order, provided October 7, 2016, 2 pages.
15	Sonos, Inc. v. D&M Holdings Inc. et al., Plaintiff's Opposition to Defendants' Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct, provided August 26, 2016, 25 pages.
16	Sonos, Inc. v. D&M Holdings Inc. et al., Plaintiff Sonos, Inc.'s Response in Opposition to Defendants' Partial Motion for Judgment on the Pleadings, filed May 27, 2016, 24 pages
17	Sonos, Inc. v. D&M Holdings Inc. et al., Reopened Exhibit B: Defendants' First Amended Answer to Plaintiffs' Third Amended Complaint, provided August 1, 2016, 27 pages.
18	Sonos, Inc. v. D&M Holdings Inc. et al., Reply Brief in Support of Defendants' Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided November 10, 2016, 16 pages.
19	Sonos, Inc. v. D&M Holdings Inc. et al., Reply Brief in Support of Defendants' Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided September 9, 2016, 16 pages.
20	Sonos, Inc. v. D&M Holdings Inc. et al., Second Amended Complaint for Patent Infringement, filed February 27, 2015, 49 pages.
21	Sonos, Inc. v. D&M Holdings Inc. et al., Third Amended Complaint for Patent Infringement, filed January 29, 2016, 47 pages
22	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 206-1, Transcript of 101 Hearing (Nov. 28, 2016) (28 pages)

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23	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 207, PUBLIC Joint Claim Construction Brief (Nov. 30, 2016) (88 pages)
24	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 214, D&M Post-Markman Letter (Dec. 22, 2016) (13 pages)
25	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 215, Sonos Post-Markman Letter (Dec. 22, 2016) (15 pages)
26	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 219, Claim Construction Opinion (Jan. 12, 2017) (24 pages)
27	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 221, Claim Construction Order (Jan. 18 2017) (2 pages)
28	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), Markman Hearing Transcript (Dec. 14, 2016) (69 pages)
29	Sony: AIR-SA 50R Wireless Speaker, Copyright 2009, 2 pages
30	Sony: Altus Quick Setup Guide ALT-SA32PC, Copyright 2009, 2 pages
31	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-E300, E301 and E801, Copyright 2009, 115 pages
32	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-IT1000/BDV-IS1000, Copyright 2008, 159 pages
33	Sony: Blu-ray Disc/DVD Home Theatre System Operating Instructions for BDV-IZ1000W, Copyright 2010, 88 pages

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34	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ380W/DZ680W/DZ880W, Copyright 2009, 136 pages
35	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ870W, Copyright 2008, 128 pages
36	Sony Ericsson MS500 User Guide, Copyright 2009, 2 pages
37	Sony: Home Theatre System Operating Instructions for HT-IS100, Copyright 2008, 168 pages
38	Sony: HT-IS100, 5.1 Channel Audio System, last updated November 2009, 2 pages
39	Sony: Multi Channel AV Receiver Operating Instructions, 2007, 80 pages.
40	Sony: Multi Channel AV Receiver Operating Instructions for STR-DN1000, Copyright 2009, 136 pages
41	Sony: STR-DN1000, Audio Video Receiver, last updated August 2009, 2 pages
42	Sony: Wireless Surround Kit Operating Instructions for WHAT-SA2, Copyright 2010, 56 pages
43	TAYLOR, Marilou, "Long Island Sound," Audio Video Interiors, April 2000, 8 pages
44	TOA Corporation, Digital Processor DP-0206 DACsys2000 Version 2.00 Software Instruction Manual, Copyright 2001, 67 pages

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45	Understanding Universal Plug and Play, Microsoft White Paper (June 2000) (D+M_0402074-178) (45 pages)
46	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/490,768 filed on 28 July 2003, entitled "Method for synchronizing audio playback between multiple networked devices," 13 pages.
47	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/825,407 filed on 12 September 2006, entitled "Controlling and manipulating groupings in a multi-zone music or media system," 82 pages.
48	Universal Plug and Play Device Architecture V. 1.0, (June 8, 2000) (54 pages)
49	Universal Plug and Play in Windows XP, Tom Fout, Microsoft Corporation (July 2001) (D+M_0402041-73) (33 pages)
50	Universal Plug and Play ("UPnP") AV Architecture:1 For UPnP Version 1.0, (June 25, 2002) (D+M_0298151-72) (22 pages)

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-05-01
Name/Print	Neilesh R. Patel	Registration Number	50918

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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1	ZX135: Installation Manual, LA Audio, April 2003, 44 pages
2	"ZR-8630AV MultiZone Audio/Video Receiver, Installation and Operation Guide," Niles Audio Corporation, 2003, 86 pages

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	1	RE41608		2010-08-31	BLAIR; Christopher Douglas et al.	
	2	D260764	S	1981-09-15	CASTAGNA; John F. et al.	
	3	D279779	S	1985-07-23	TAYLOR; Terrance N.	
	4	D293671	S	1988-01-12	BEAUMONT; Thomas G.	
	5	D301037	S	1989-05-09	MATSUDA; Hari	
	6	D304443	S	1989-11-07	GRINYER; Clive A. et al.	
	7	D313023	S	1990-12-18	KOLENDA; David F. et al.	
	8	D313398	S	1991-01-01	GILCHRIST; Thomas L.	

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9	D313600	S	1991-01-08	WEBER; Edward W.
10	D320598	S	1991-10-08	AUERBACH; Marc et al.
11	D322609	S	1991-12-24	PATTON; Douglas M.
12	D326450	S	1992-05-26	WATANABE; Katsuhito
13	D327060	S	1992-06-16	WACHOB; David E. et al.
14	D331388	S	1992-12-01	DAHNERT; Dean L. et al.
15	D333135	S	1993-02-09	WACHOB; David E. et al.
16	D350531	S	1994-09-13	TSUJI; Masao
17	D350962	S	1994-09-27	REARDON; John D. et al.
18	D354059	S	1995-01-03	HENDRICKS; John S.
19	D354751	S	1995-01-24	HERSH; Joseph B. et al.

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20	D356093	S	1995-03-07	MCCAULEY; Gilbert L. et al.
21	D356312	S	1995-03-14	ALTHANS; Richard K.
22	D357024	S	1995-04-04	TOKIYAMA; Masaru et al.
23	D362446	S	1995-09-19	GASIOREK; John G. et al.
24	D363933	S	1995-11-07	STARCK; Philippe
25	D364877	S	1995-12-05	TOKIYAMA; Masaru et al.
26	D364878	S	1995-12-05	GREEN; Dewayne E. et al.
27	D365102	S	1995-12-12	GIOSCIA; Richard
28	D366044	S	1996-01-09	HARA; Masayuki et al.
29	D372716	S	1996-08-13	THORNE; Edwin
30	D377651	S	1997-01-28	BIASOTTI; Mark et al.

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31	D379816	S	1997-06-10	LAITURI; David W. et al.
32	D380752	S	1997-07-08	HANSON; Bruce D.
33	D382271	S	1997-08-12	AKWIWU; Ndukwe
34	D384940	S	1997-10-14	KONO; Kenichiro et al.
35	D387352	S	1997-12-09	HANEKO; Steven T. et al.
36	D388792	S	1998-01-06	NYKERK; Michael
37	D389143	S	1998-01-13	WICKS; James E.
38	D392641	S	1998-03-24	FENNER; Knut T.
39	D393628	S	1998-04-21	LEDBETTER; Carl J. et al.
40	D394659	S	1998-05-26	BIASOTTI; Mark et al.
41	D395889	S	1998-07-07	GERBA; George et al.

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42	D397996	S	1998-09-08	SMITH; Michael A.
43	D401587	S	1998-11-24	RUDOLPH; Daniel L.
44	D404741	S	1999-01-26	SCHUMAKER; Nevenka et al.
45	D405071	S	1999-02-02	GAMBARO; Thomas L.
46	D406847	S	1999-03-16	GERBA; George et al.
47	D407071	S	1999-03-23	KEATING; Virginia Walker
48	D410927	S	1999-06-15	YAMAGISHI; Yoshinobu
49	D412337	S	1999-07-27	HAMANO; Masataka
50	D415496	S	1999-10-19	GERBA; George et al.
51	D416021	S	1999-11-02	GODETTE; Robert G. et al.
52	D420006	S	2000-02-01	TONINO; Eduardus Josephus Anna Maria

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53	D429246	S	2000-08-08	HOLMA; Tapani
54	D430143	S	2000-08-29	RENK; Thomas Edward
55	D431552	S	2000-10-03	BACKS; Jochen Philipp et al.
56	D432525	S	2000-10-24	BEECROFT; Troy C.
57	D444475		2001-07-03	LEVEY; Keith P. et al.
58	D444475		2001-07-03	LEVEY; Keith P. et al.
59	D452520		2001-12-25	GOTHAM; David R. et al.
60	D462339		2002-09-03	ALLEN; Paul G. et al.
61	D462340		2002-09-03	ALLEN; Paul G. et al.
62	D462945		2002-09-17	SKULLEY; Gerald W.
63	D466108		2002-11-26	GLODAVA; Derrick A. et al.

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64	D468297	2003-01-07	IKEDA; Tetsuya
65	D474763	2003-05-20	TOZAKI; Ray et al.
66	D475993	2003-06-17	MEYER; Robert K.
67	D476643	2003-07-01	YAMAGISHI; Masayuki
68	D477310	2003-07-15	MORANSAIS; Charles
69	D478051	2003-08-05	SAGAWA; So
70	D478069	2003-08-05	BECK; Benjamin et al.
71	D478896	2003-08-26	SUMMERS; Kim Renee
72	D479520	2003-09-09	DE; Saulles Stephen
73	D481056	2003-10-21	KAWASAKI; Mugio et al.
74	D486145	2004-02-03	KAMINSKI; Dariusz S. et al.

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75	D491929	2004-06-22	GRIESAU; Gene W. et al.
76	D493148	2004-07-20	SHIBATA; Kumiko et al.
77	D495333	2004-08-31	BORSBOOM; Antonious M.
78	D496003	2004-09-14	SPIRA; Joel S.
79	D496005	2004-09-14	WANG; Carter
80	D496335	2004-09-21	SPIRA; Joel S.
81	D497363	2004-10-19	OLSON; Mark H. et al.
82	D499086	2004-11-30	POLITO; Fred
83	D499395	2004-12-07	HSU; Gary
84	D499718	2004-12-14	CHEN; Alex
85	D500015	2004-12-21	GUBBE; Bernd

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86	D501477	2005-02-01	HALL; David
87	D504872	2005-05-10	UEHARA; Mitsuhiro et al.
88	D504885	2005-05-10	ZHANG; Jinsong et al.
89	D506463	2005-06-21	DANIELS; Wilfried Johan Paul Ferdinand
90	D515072	2006-02-14	LEE; Nikolas Ian
91	D515557	2006-02-21	OKULEY; James M.
92	D518475	2006-04-04	YANG; Yu-Ching et al.
93	D524296	2006-07-04	KITA; Toshiyuki
94	D527375	2006-08-29	FLORA; William T. et al.
95	3956591	1976-05-11	GATES Jr.; ,William A.
96	4105974	1978-08-08	ROGERS; Edwin F.

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97	4296278	1981-10-20	CULLISON; Steven B. et al.
98	4306114	1981-12-15	CALLAHAN; Jeffery C.
99	4509211	1985-04-02	ROBBINS; Michael S.
100	4530091	1985-07-16	CROCKETT; Gary B.
101	4696037	1987-09-22	PERENS; Gustaaf E. M.
102	4701629	1987-10-20	CITROEN; Maxime H.
103	4712105	1987-12-08	KOEHLER; Hans E. P.
104	4731814	1988-03-15	BECKER; William R. et al.
105	4816989	1989-03-28	FINN; Alan M. et al.
106	4824059	1989-04-25	BUTLER; Les I.
107	4845751	1989-07-04	SCHWAB; Brian H.

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108	4994908	1991-02-19	KUBAN; Curt M. et al.
109	5086385	1992-02-04	LAUNEY; Reuel O. et al.
110	5151922	1992-09-29	WEISS; Karl R.
111	5153579	1992-10-06	FISCH; Kenneth D. et al.
112	5182552	1993-01-26	RAYNTING; Richard J.
113	5185680	1993-02-09	KAKUBO; Yuji
114	5198603	1993-03-30	NISHIKAWA; Masashi et al.
115	5237327	1993-08-17	SAITOH; Mitsumasa et al.
116	5272757	1993-12-21	SCOFIELD; William C. et al.
117	5299266	1994-03-29	LUMSDEN; John L.
118	5361381	1994-11-01	SHORT; William R.

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119	5372441	1994-12-13	LOUIS; William M.
120	5406634	1995-04-11	ANDERSON; Charles W. et al.
121	5430485	1995-07-04	LANKFORD; Douglas E. et al.
122	5440644	1995-08-08	FARINELLI; Robert et al.
123	5457448	1995-10-10	MOTSUKA; Keiichi et al.
124	5467342	1995-11-14	LOGSTON; Gary L. et al.
125	5481251	1996-01-02	BUYS; Menno et al.
126	5491839	1996-02-13	SCHOTZ; Larry
127	5515345	1996-05-07	BARREIRA; Jeane K. et al.
128	5533021	1996-07-02	BRANSTAD; Mark W. et al.
129	5553147	1996-09-03	PINEAU; Joseph E. M.

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130	5553222	1996-09-03	MILNE; Steve H. et al.
131	5553314	1996-09-03	GRUBE; Gary W. et al.
132	5596696	1997-01-21	TINDELL; James M. et al.
133	5602992	1997-02-11	DANNEELS; Gunner
134	5623483	1997-04-22	AGRAWAL; Prathima et al.
135	5625350	1997-04-29	FUKATSU; Hitoshi et al.
136	5633871	1997-05-27	BLOKS; Rudolf H. J.
137	5640388	1997-06-17	WOODHEAD; Douglas F. et al.
138	5652749	1997-07-29	DAVENPORT; David William et al.
139	5661665	1997-08-26	GLASS; Adam et al.
140	5661728	1997-08-26	FINOTELLO; Andrea et al.

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141	5668884	1997-09-16	CLAIR Jr.; Roy Barry et al.
142	5673323	1997-09-30	SCHOTZ; Larry et al.
143	5696896	1997-12-09	BADOVINATZ; Peter Richard et al.
144	5726989	1998-03-10	DOKIC; Miroslav V.
145	5740235	1998-04-14	ESTER; James William et al.
146	5742623	1998-04-21	NUBER; Ray et al.
147	5761320	1998-06-02	FARINELLI; Robert et al.
148	5774016	1998-06-30	KETTERER; Ernest R.
149	5787249	1998-07-28	BADOVINATZ; Peter Richard et al.
150	5790543	1998-08-04	CLOUTIER; Leo
151	5808662	1998-09-15	KINNEY; Daniel Reid et al.

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152	5812201	1998-09-22	YOO; Ki Ryung
153	5815689	1998-09-29	SHAW; George H. J. et al.
154	5818948	1998-10-06	GULICK; Dale E.
155	5832024	1998-11-03	SCHOTZ; Larry et al.
156	5848152	1998-12-08	SLIPY; Michael J. et al.
157	5852722	1998-12-22	HAMILTON; Graham
158	5867691	1999-02-02	SHIRAISHI; Hajime
159	5875233	1999-02-23	COX; Daniel R.
160	5875354	1999-02-23	CHARLTON; Paul et al.
161	5887143	1999-03-23	SAITO; Masahiko et al.
162	5905768	1999-05-18	MATURI; Greg et al.

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163	5917830	1999-06-29	CHEN; David et al.
164	5923869	1999-07-13	KASHIWAGI; Yoshiichiro et al.
165	5923902	1999-07-13	NAGAKI; Yoshihiro
166	5946343	1999-08-31	SCHOTZ; Larry et al.
167	5956025	1999-09-21	DOULDEN; Lorna et al.
168	5956088	1999-09-21	SHEN; Paul et al.
169	5960006	1999-09-28	MATURI; Greg et al.
170	5984512	1999-11-16	JONES; Anthony Mark et al.
171	5987611	1999-11-16	FREUND; Gregor
172	5990884	1999-11-23	DOUMA; Peter et al.
173	5991307	1999-11-23	KOMURO; Teruyoshi et al.

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174	5999906	1999-12-07	MERCS; Laura et al.
175	6009457	1999-12-28	MOLLER; Matthew Donaldson
176	6018376	2000-01-25	NAKATANI; Shintarou
177	6026150	2000-02-15	FRANK; Edward H. et al.
178	6029196	2000-02-22	ENZ; Michael A.
179	6031818	2000-02-29	LO; W. Steven et al.
180	6032202	2000-02-29	LEA; Rodger J. et al.
181	6038614	2000-03-14	CHAN; Rix S. et al.
182	6046550	2000-04-04	REFERENCE; Jonathan H. et al.
183	6061457	2000-05-09	STOCKHAMER; Lee
184	6078725	2000-06-20	TANAKA; Mitsumasa

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185	6081266	2000-06-27	SCIAMMARELLA; Eduardo
186	6088063	2000-07-11	SHIBA; Kosuke
187	6101195	2000-08-08	LYONS; Paul Wallace et al.
188	6108485	2000-08-22	KIM; Jeong Kyu
189	6108686	2000-08-22	WILLIAMS Jr., Henry R.
190	6122668	2000-09-19	TENG; Peter Y. et al.
191	6127941	2000-10-03	VAN RYZIN; John M.
192	6128318	2000-10-03	SATO; Takashi
193	6148205	2000-11-14	COTTON; Timothy R.
194	6154772	2000-11-28	DUNN; Bryan W. et al.
195	6157957	2000-12-05	BERTHAUD; Jean-Marc

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196	6163647	2000-12-19	TERASHIMA; Masaru et al.
197	6169725	2001-01-02	GIBBS; Simon J. et al.
198	6175872	2001-01-16	NEUMANN; Eric K. et al.
199	6181383	2001-01-30	FOX; Edward C. et al.
200	6185737	2001-02-06	NORTHCUTT; J. Duane et al.
201	6195435	2001-02-27	KITAMURA; John S.
202	6195436	2001-02-27	SCIBORA; Marco et al.
203	6199169	2001-03-06	VOTH; Duane J.
204	6212282	2001-04-03	MERSHON; Stuart
205	6246701	2001-06-12	SLATTERY; William
206	6253293	2001-06-26	RAO; Raghunath et al.

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207	6255961	2001-07-03	VAN RYZIN; John M. et al.
208	6256554	2001-07-03	DIOLORENZO; Mark
209	6269406	2001-07-31	DUTCHER; David Paul et al.
210	6301012	2001-10-09	WHITE; Craig R. et al.
211	6308207	2001-10-23	SENG; Weinan William et al.
212	6310652	2001-10-30	LI; Stephen et al.
213	6313879	2001-11-06	KUBO; Hiroaki et al.
214	6321252	2001-11-20	BHOLA; Sumeer et al.
215	6324586	2001-11-27	JOHNSON; Aric R.
216	6332147	2001-12-18	MORAN; Thomas P. et al.
217	6343028	2002-01-29	KUWAOKA; Toshiharu

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218	6349285	2002-02-19	LIU; Pu et al.
219	6349339	2002-02-19	WILLIAMS; Henry R.
220	6351821	2002-02-26	VOTH; Duane J.
221	6353172	2002-03-05	FAY; Todor C. et al.
222	6356871	2002-03-12	HEMKUMAR; Nariankadu Datatreya et al.
223	6404811	2002-06-11	CVETKO; John F. et al.
224	6418150	2002-07-09	STAATS; Erik P.
225	6430353	2002-08-06	HONDA; Susumu et al.
226	6442443	2002-08-27	FUJII; Kazuo et al.
227	6449642	2002-09-10	BOURKE-DUNPHY; Erin Marie et al.
228	6449653	2002-09-10	KLEMETS; Anders Edgar et al.

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229	6456783	2002-09-24	ANDO; Hideo et al.
230	6463474	2002-10-08	FUH; Tzong-Fen et al.
231	6466832	2002-10-15	ZUQERT; Benjamin et al.
232	6469633	2002-10-22	WACHTER; Martin Richard
233	6487296	2002-11-26	ALLEN; Steven W. et al.
234	6493832	2002-12-10	ITAKURA; Eisaburo et al.
235	6522886	2003-02-18	YOUNGS; Edward A. et al.
236	6526325	2003-02-25	SUSSMAN; Robert et al.
237	6535121	2003-03-18	MATHNEY; Richard K. et al.
238	6587127	2003-07-01	LEEKE; Steven D. et al.
239	6598172	2003-07-22	VANDEUSEN; Mark P. et al.

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240	6611537	2003-08-26	EDENS; Glenn T. et al.
241	6631410	2003-10-07	KOWALSKI; John Michael et al.
242	6636269	2003-10-21	BALDWIN; James A.
243	6653899	2003-11-25	ORGANVIDEZ; Juan H. et al.
244	6654720	2003-11-25	GRAHAM; Stephen Glen et al.
245	6654956	2003-11-25	TRINH; Vincent et al.
246	6658091	2003-12-02	NAIDOO; Surendra N. et al.
247	6674803	2004-01-06	KESSELRING; William David
248	6684060	2004-01-27	CURTIN; Steven D.
249	6687664	2004-02-03	SUSSMAN; Robert et al.
250	6704421	2004-03-09	KITAMURA; John S.

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251	6741961	2004-05-25	LIM; Chae-Duck
252	6757517	2004-06-29	CHANG; Chin-Chi
253	6763274	2004-07-13	GILBERT; Erik J.
254	6778073	2004-08-17	LUTTER; Robert Pierce et al.
255	6778493	2004-08-17	SHII; Atsushi
256	6778869	2004-08-17	CHAMPION; Mark
257	6803964	2004-10-12	POST; Lauren Lee et al.
258	6809635	2004-10-26	KAARESOJA; Topi
259	6816510	2004-11-09	BANERJEE; Subrata
260	6816818	2004-11-09	WOLF; Michael Joachim et al.
261	6823225	2004-11-23	SASS; Jonathan

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262	6826283	2004-11-30	WHEELER; Thomas M. et al.
263	6836788	2004-12-28	KIM; Sang-Gil et al.
264	6839752	2005-01-04	MILLER; Robert et al.
265	6859460	2005-02-22	CHEN; Michael C.
266	6859538	2005-02-22	VOLTZ; Christopher
267	6873862	2005-03-29	RESHEFSKY; Marc Alan
268	6882335	2005-04-19	SAARINEN; Pertti
269	6898642	2005-05-24	CHAFLE; Girish Bhimrao et al.
270	6901439	2005-05-31	BONASIA; Gaetano et al.
271	6907458	2005-06-14	TOMASSETTI; Stephen Robert et al.
272	6912610	2005-06-28	SPENCER; Thomas Vincent

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273	6915347	2005-07-05	HANKO; James G. et al.
274	6917592	2005-07-12	RAMANKUTTY; Rajesh et al.
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That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

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Name/Print	Neilesh R. Patel	Registration Number	50918

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First Named Inventor	
Art Unit	3992
Examiner Name	STEELMAN, Mary J.
Attorney Docket Number	04-0601-REEXAM

34	Non-Final Office Action mailed on 13 March 2015, issued in connection with U.S. Patent Application No. 13/705177, filed 05 December 2012, 15 pages.
35	Non-Final Office Action mailed on 16 November 2016, issued in connection with U.S. Patent Application No. 15/228639, filed on 04 August 2016, 15 pages
36	Non-Final Office Action mailed on 17 November 2014, issued in connection with U.S. Patent Application No. 13/864247, filed on 17 April 2013, 11 pages
37	Non-Final Office Action mailed on 18 February 2009, issued in connection with U.S. Patent Application No. 10/861653, filed on 05 June 2004, 18 pages.
38	Non-Final Office Action mailed on 18 November 2014, issued in connection with U.S. Patent Application No. 13/435739, filed on 30 March 2012, 10 pages
39	Non-Final Office Action mailed on 19 June 2015, issued in connection with U.S. Patent Application No. 13/533105 filed on 26 June 2012, 38 pages.
40	Non-Final Office Action mailed on 19 November 2014, issued in connection with U.S. Patent Application No. 13/848921, filed on 22 March 2013, 9 pages
41	Non-Final Office Action mailed on 20 August 2009, issued in connection with U.S. Patent Application No. 11/906702, filed on 02 October 2007, 27 pages
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46	Non-Final Office Action mailed on 22 September 2016, issued in connection with U.S. Patent Application No. 15/088906, filed on 01 April 2016, 9 pages
47	Non-Final Office Action mailed on 22 September 2016, issued in connection with U.S. Patent Application No. 15/155149, filed on 16 May 2016, 7 pages
48	Non-Final Office Action mailed on 23 June 2015, issued in connection with U.S. Patent Application No. 13/705176, filed on 05 December 2012, 30 pages
49	Non-Final Office Action mailed on 23 October 2014, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 11 pages
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-04-25
Name/Print	Neilesh R. Patel	Registration Number	50918

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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PTO/SB/08a (03-75)

Doc description: Information Disclosure Statement (IDS) Filed

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	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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1	Non-Final Office Action mailed on 23 October 2014, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 9 pages
2	Non-final Office Action mailed on 24 October 2014, issued in connection with U.S. Patent Application No. 13/435776, filed 30 March 2012, 14 pages
3	Non-Final Office Action mailed on 26 February 2015, issued in connection with U.S. Patent Application No. 14/186850, filed on 21 February 2014, 25 pages.
4	Non-Final Office Action mailed on 26 March 2015, issued in connection with U.S. Patent Application No. 14/184528, filed on 19 February 2014, 18 pages
5	Non-Final Office Action mailed on 27 June 2008, issued in connection with U.S. Patent Application No. 10/861653, filed on 05 June 2004, 19 pages.
6	Non-Final Office Action mailed on 27 March 2015, issued in connection with U.S. Patent Application No. 13/705178, filed on 05 December 2012, 14 pages.
7	Non-Final Office Action mailed on 28 December 2015, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 29 pages.
8	Non-Final Office Action mailed on 29 November 2016, issued in connection with U.S. Patent Application No. 13/894179, filed on 14 May 2013, 14 pages
9	Non-Final Office Action mailed on 30 April 2012, issued in connection with U.S. Patent Application No. 13/204511, filed on 05 August 2011, 30 pages
10	Non-Final Office Action mailed on 30 January 2015, issued in connection with U.S. Patent Application No. 14/504812, filed on 02 October 2014, 13 pages
11	Non-Final Office Action mailed on 30 January 2015, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 29 pages.

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12	Non-Final Office Action mailed on 30 November 2016, issued in connection with U.S. Patent Application No. 15/243186, filed on 22 August 2016, 12 pages
13	Non-Final Office Action mailed on 30 September 2016, issued in connection with U.S. Patent Application No. 13/864249, filed on 17 April 2013, 12 pages
14	North American MPEG-2 Information, "The MPEG-2 Transport Stream," Retrieved from the Internet: URL: http://www.coolstf.com/mpeg/#ts , 2006, pp. 4-5.
15	Notice of Allowance mailed 31 January 2013, issued in connection with U.S. Patent Application No. 13/298090, filed on 16 November 2011, 19 pages
16	Notice of Allowance mailed on 01 December 2016, issued in connection with U.S. Patent Application No. 15/088283, filed on 01 April 2016, 9 pages
17	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/088532, filed on 01 April 2016, 9 pages
18	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/088678, filed on 01 April 2016, 9 pages
19	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/089758, filed on 04 April 2016, 9 pages
20	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/155149, filed on 16 May 2016, 9 pages
21	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 17 pages
22	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 19 pages

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24	Notice of Allowance mailed on 03 April 2017, issued in connection with U.S. Patent Application No. 15088678, filed on 01 April 2016, 8 pages
25	Notice of Allowance mailed on 03 September 2015, issued in connection with U.S. Patent Application No. 13/705174, filed on 05 December 2012, 4 pages.
26	Notice of Allowance mailed on 04 August 2015, issued in connection with U.S. Patent Application No. 14/516867, filed on 17 October 2014, 13 pages
27	Notice of Allowance mailed on 05 October 2012, issued in connection with U.S. Patent Application No. 13/204511, filed on 05 August 2011, 11 pages
28	Notice of Allowance mailed on 06 March 2014, issued in connection with U.S. Patent Application No. 13/827653, filed 14 March 2013, 17 pages
29	Notice of Allowance mailed on 06 May 2011, issued in connection with U.S. Patent Application No. 11/801468, filed 09 May 2007, 10 pages.
30	Notice of Allowance mailed on 06 September 2013, issued in connection with U.S. Patent Application No. 13/619237, filed on 14 September 2012, 10 pages
31	Notice of Allowance mailed on 07 April 2016, issued in connection with U.S. Patent Application No. 13/533105, filed on 26 June 2012, 40 pages
32	Notice of Allowance mailed on 07 December 2016, issued in connection with U.S. Patent Application No. 15/156392, filed on 17 May 2016, 9 pages
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Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-04-26
Name/Print	Neilesh R. Patel	Registration Number	50918

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Doc description: Information Disclosure Statement (IDS) Filed

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Application Number	90013882
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Examiner Name	STEELMAN, Mary J.
Attorney Docket Number	04-0601-REEXAM

1	Notice of Allowance mailed on 17 July 2015, issued in connection with U.S. Patent Application No. 13/864251, filed on 17 April 2013, 20 pages
2	Notice of Allowance mailed on 19 May 2015, issued in connection with U.S. Patent Application No. 13/907666, filed on 31 May 2013, 7 pages
3	Notice of Allowance mailed on 19 October 2016, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 14 pages
4	Notice of Allowance mailed on 21 September 2015, issued in connection with U.S. Patent Application No. 13/297000, filed on 15 November 2011, 11 pages.
5	Notice of Allowance mailed on 22 December 2016, issued in connection with U.S. Patent Application No. 15/080716, filed on 25 March 2016, 9 pages.
6	Notice of Allowance mailed on 22 September 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 7 pages
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8	Notice of Allowance mailed on 24 September 2015, issued in connection with U.S. Patent Application No. 14/184935, filed on 20 February 2014, 7 pages
9	Notice of Allowance mailed on 25 September 2014, issued in connection with U.S. Patent Application No. 14/176808, filed on 10 February 2014, 5 pages
10	Notice of Allowance mailed on 27 August 2015, issued in connection with U.S. Patent Application No. 13/705177, filed on 05 December 2012, 34 pages.
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Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-04-27
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2	Advanced Driver Tab User Interface WaveLan GUI Guide, AVAGO0009, Agere Systems, February 2004, 4 pages.
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6	Advisory Action mailed on 01 June 2015, issued in connection with U.S. Patent Application No. 14/516867, filed on 17 October 2014, 11 pages
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9	Advisory Action mailed on 05 September 2014, issued in connection with U.S. Patent Application No. 13/907666, filed on 31 May 2013, 3 pages
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Name/Print	Neilesh R. Patel	Registration Number	50918

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First Named Inventor	
Art Unit	3992
Examiner Name	STEELMAN, Mary J.
Attorney Docket Number	04-0601-REEXAM

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6	SCHMANDT et al., "Impromptu: Managing Networked Audio Applications for Mobile Users," 2004, 11 pages.
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24	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 1: Defendants' Invalidity Contentions for U.S. Patent No. 7,571,014 filed September 16, 2016, 270 pages.
25	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 10: Defendants' Invalidity Contentions for U.S. Patent No. 9,219,959 filed September 27, 2016, 236 pages.
26	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 11: Defendants' Invalidity Contentions for U.S. Design Patent No. D559,197 filed September 27, 2016, 52 pages.
27	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 2: Defendants' Invalidity Contentions for U.S. Patent No. 8,588,949 filed September 27, 2016, 224 pages.
28	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 3: Defendants' Invalidity Contentions for U.S. Patent No. 8,843,224 filed September 27, 2016, 147 pages.
29	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 4: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,312 filed September 27, 2016, 229 pages.
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31	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 6: Defendants' Invalidity Contentions for U.S. Patent No. 9,042,556 filed September 27, 2016, 162 pages.
32	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,195,258 filed September 27, 2016, 418 pages.
33	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 8: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed September 27, 2016, 331 pages.

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34	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 9: Defendants' Invalidation Contentions for U.S. Patent No. 9,213,357 filed September 27, 2016, 251 pages.
35	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions filed September 14, 2016, 100 pages.
36	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 1: Defendants' Invalidation Contentions for U.S. Patent No. 7,571,014 filed April 15, 2016, 161 pages.
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48	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions, filed April 15, 2016, 97 pages.
49	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Preliminary Identification of Indefinite Terms, provided July 29, 2016, 8 pages
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Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-05-01
Name/Print	Neilesh R. Patel	Registration Number	50918

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Examiner Name	STEELMAN, Mary J.
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23	Sonos, Inc. v. D&M Holdings Inc. et al., Declaration of Steven C. Visser, executed September 9, 2016, 40 pages.
24	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 1: Defendants' Invalidation Contentions for U.S. Patent No. 7,571,014 filed September 16, 2016, 270 pages.
25	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 10: Defendants' Invalidation Contentions for U.S. Patent No. 8,219,959 filed September 27, 2016, 236 pages.
26	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 11: Defendants' Invalidation Contentions for U.S. Design Patent No. D559,197 filed September 27, 2016, 52 pages.
27	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 2: Defendants' Invalidation Contentions for U.S. Patent No. 8,588,949 filed September 27, 2016, 224 pages.
28	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 3: Defendants' Invalidation Contentions for U.S. Patent No. 8,843,224 filed September 27, 2016, 147 pages.
29	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 4: Defendants' Invalidation Contentions for U.S. Patent No. 8,938,312 filed September 27, 2016, 229 pages.
30	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 5: Defendants' Invalidation Contentions for U.S. Patent No. 8,938,637 filed September 27, 2016, 213 pages.
31	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 6: Defendants' Invalidation Contentions for U.S. Patent No. 9,042,556 filed September 27, 2016, 162 pages.
32	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 7: Defendants' Invalidation Contentions for U.S. Patent No. 9,195,258 filed September 27, 2016, 418 pages.
33	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 8: Defendants' Invalidation Contentions for U.S. Patent No. 9,202,509 filed September 27, 2016, 331 pages.

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34	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions Exhibit 9: Defendants' Invalidation Contentions for U.S. Patent No. 9,213,357 filed September 27, 2016, 251 pages.
35	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidation Contentions filed September 14, 2016, 100 pages.
36	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 1: Defendants' Invalidation Contentions for U.S. Patent No. 7,571,014 filed April 15, 2016, 161 pages.
37	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 10: Defendants' Invalidation Contentions for U.S. Patent No. 9,213,357 filed April 15, 2016, 244 pages.
38	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 11: Defendants' Invalidation Contentions for U.S. Patent No. 9,219,959 filed April 15, 2016, 172 pages.
39	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 12: Defendants' Invalidation Contentions for U.S. Design Patent No. D559,197 filed April 15, 2016, 36 pages.
40	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 2: Defendants' Invalidation Contentions for U.S. Patent No. 8,588,949 filed April 15, 2016, 112 pages.
41	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 3: Defendants' Invalidation Contentions for U.S. Patent No. 8,843,224 filed April 15, 2016, 118 pages.
42	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 4: Defendants' Invalidation Contentions for U.S. Patent No. 8,938,312 filed April 15, 2016, 217 pages.
43	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 5: Defendants' Invalidation Contentions for U.S. Patent No. 8,938,637 filed April 15, 2016, 177 pages.
44	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidation Contentions Exhibit 6: Defendants' Invalidation Contentions for U.S. Patent No. 9,042,556 filed April 15, 2016, 86 pages.

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45	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,130,771 filed April 15, 2016, 203 pages.
46	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 8: Defendants' Invalidity Contentions for U.S. Patent No. 9,195,258 filed April 15, 2016, 400 pages.
47	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 9: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed April 15, 2016, 163 pages.
48	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions, filed April 15, 2016, 97 pages.
49	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Preliminary Identification of Indefinite Terms, provided July 29, 2016, 8 pages
50	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Preliminary Identification of Prior Art References, provided July 29, 2016, 5 pages.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-05-01
Name/Print	Neilesh R. Patel	Registration Number	50918

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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Doc code: IDS

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Doc description: Information Disclosure Statement (IDS) Filed

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	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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	1	2014149533	WO	A2	2014-09-25	BOSE CORPORATION		
	2	2014004182	WO		2014-01-03	SONOS, INC.		
	3	2012050927	WO		2012-04-19	BEYOND OBLIVION INC		

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4	2008114389	WO	A1	2008-09-25	PIONEER CORPORATION.
5	2008082350	WO	A1	2008-07-10	SCANIA CV ABP [SE], et al.
6	2007131555	WO		2007-11-22	SONY ERICSSON MOBILE COMMUNICATIONS AB.
7	2007127485	WO		2007-11-08	MICROSOFT CORPORATION.
8	2007023120	WO		2007-03-01	SONY ERICSSON MOBILE COMM AB [SE], et al.
9	2005013047	WO	A2	2005-02-10	SONOS, INC.
10	2003093950	WO	A2	2003-11-13	GOLDBERG, BENJAMIN, M. et al.
11	200153994	WO		2001-07-26	FRISKIT, INC.
12	199961985	WO		1999-12-02	THE DOW CHEMICAL COMPANY.
13	2007135581	WO	A2	2007-11-29	KONINKL PHILIPS ELECTRONICS NV [NL], et al.
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
	1	Universal Plug and Play Vendor's Implementation Guide (January 5, 2000) (7 pages)	
	2	UPnP AV Architecture:0.83 (June 12, 2002) (SONDM000115483-504) (22 pages)	
	3	UPnP Design by Example, A Software Developers Guide to Universal Plug and Play Michael Jeronimo and JackWeast, Intel Press (D+M_0401307-818) (April 2003) (511 pages)	
	4	WANCommonInterfaceConfig:1 Service Template Version 1.01 For UPnP, Ver. 1.0 (November 12, 2001) (D +M_0401820-43) (24 pages)	
	5	WANIPConnection:1 Service Template Version 1.01 For UPnP Ver. 1.0 (November 12, 2001) (D+M_0401844-917) (74 pages)	
	6	WANPPPConnection:1 Service Template Version 1.01 For UPnP, Version 1.0 (November 12, 2001) (D +M_0401918-2006) (89 pages)	
	7	WaveLan High-Speed Multimode Chip Set, AVAGO0003, Agere Systems, February 2003, 4 pages	
	8	WaveLan High-Speed Multimode Chip Set, AVAGO0005, Agere Systems, February 2003, 4 pages	
	9	WaveLAN Wireless Integration Developer Kit (WI-DK) for Access Point Developers, AVAGO0054, Agere Systems, July 2003, 2 pages	
	10	WaveLAN Wireless Integration-Developer Kit (WI-DK) Hardware Control Function (HCF), AVAGO0052, Agere Systems, July 2003, 2 pages	

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11	"Welcome. You're watching Apple TV." Apple TV 1st Generation Setup Guide, 8 April 2008 Retrieved 10/14/14, 40 pages
12	"Welcome. You're watching Apple TV." Apple TV 2nd Generation Setup Guide, 10 March 2011 Retrieved 10/16/14, 36 pages
13	"Welcome. You're watching Apple TV." Apple TV 3rd Generation Setup Guide, 16 March 2012 Retrieved 10/16/14, 36 pages
14	WI-DK Release 2 WaveLan Embedded Drivers for VxWorks and Linux, AVAGO0056, Agere Systems, July 2003, 2 pages
15	WI-DK Release 2 WaveLan END Reference Driver for VxWorks, AVAGO0044, Agere Systems, July 2003, 4 pages
16	WI-DK Release 2 WaveLan LKM Reference Drivers for Linux, AVAGO0048, Agere Systems, July 2003, 4 pages
17	Windows Media Connect Device Compatibility Specification (April 12, 2004) (16 pages)
18	WPA Reauthentication Rates, AVAGO0063, Agere Systems, February 2004, 3 pages
19	Yamaha DME 32 manual: copyright 2001.
20	Yamaha DME 64 Owner's Manual; copyright 2004, 80 pages
21	Yamaha DME Designer 3.5 setup manual guide; copyright 2004, 16 pages

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22	Yamaha DME Designer 3.5 User Manual; Copyright 2004, 507 pages
23	Yamaha DME Designer software manual: Copyright 2004, 482 pages
24	"Systemline Modular Installation Guide, Multiroom System," Systemline, 2003, pp. 1-22

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Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-05-01
Name/Print	Neilesh R. Patel	Registration Number	50918

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	Attorney Docket Number		04-0601-REEXAM	

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	RE41608		2010-08-31	BLAIR; Christopher Douglas et al.	
	2	D260764	S	1981-09-15	CASTAGNA; John F. et al.	
	3	D279779	S	1985-07-23	TAYLOR; Terrance N.	
	4	D293671	S	1988-01-12	BEAUMONT; Thomas G.	
	5	D301037	S	1989-05-09	MATSUDA; Hari	
	6	D304443	S	1989-11-07	GRINYER; Clive A. et al.	
	7	D313023	S	1990-12-18	KOLENDA; David F. et al.	
	8	D313398	S	1991-01-01	GILCHRIST; Thomas L.	

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9	D313600	S	1991-01-08	WEBER; Edward W.	
10	D320598	S	1991-10-08	AUERBACH; Marc et al.	
11	D322609	S	1991-12-24	PATTON; Douglas M.	
12	D326450	S	1992-05-26	WATANABE; Katsuhito	
13	D327060	S	1992-06-16	WACHOB; David E. et al.	
14	D331388	S	1992-12-01	DAHNER; Dean L. et al.	
15	D333135	S	1993-02-09	WACHOB; David E. et al.	
16	D350531	S	1994-09-13	TSUJI; Masao	
17	D350962	S	1994-09-27	REARDON; John D. et al.	
18	D354059	S	1995-01-03	HENDRICKS; John S.	
19	D354751	S	1995-01-24	HERSH; Joseph B. et al.	

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20	D356093	S	1995-03-07	MCCAULEY; Gilbert L. et al.	
21	D356312	S	1995-03-14	ALTHANS; Richard K.	
22	D357024	S	1995-04-04	TOKIYAMA; Masaru et al.	
23	D362446	S	1995-09-19	GASIOREK; John G. et al.	
24	D363933	S	1995-11-07	STARCK; Philippe	
25	D364877	S	1995-12-05	TOKIYAMA; Masaru et al.	
26	D364878	S	1995-12-05	GREEN; Dewayne E. et al.	
27	D365102	S	1995-12-12	GIOSCIA; Richard	
28	D366044	S	1996-01-09	HARA; Masayuki et al.	
29	D372716	S	1996-08-13	THORNE; Edwin	
30	D377651	S	1997-01-28	BIASOTTI; Mark et al.	

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31	D379816	S	1997-06-10	LAITURI; David W. et al.	
32	D380752	S	1997-07-08	HANSON; Bruce D.	
33	D382271	S	1997-08-12	AKWIWU; Ndukwe	
34	D384940	S	1997-10-14	KONO; Kenichiro et al.	
35	D387352	S	1997-12-09	KANEKO; Steven T. et al.	
36	D388792	S	1998-01-06	NYKERK; Michael	
37	D389143	S	1998-01-13	WICKS; James E.	
38	D392641	S	1998-03-24	FENNER; Knut T.	
39	D393628	S	1998-04-21	LEDBETTER; Carl J. et al.	
40	D394659	S	1998-05-26	BIASOTTI; Mark et al.	
41	D395889	S	1998-07-07	GERBA; George et al.	

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42	D397996	S	1998-09-08	SMITH; Michael A.	
43	D401587	S	1998-11-24	RUDOLPH; Daniel L.	
44	D404741	S	1999-01-26	SCHUMAKER; Nevenka et al.	
45	D405071	S	1999-02-02	GAMBARO; Thomas L.	
46	D406847	S	1999-03-16	GERBA; George et al.	
47	D407071	S	1999-03-23	KEATING; Virginia Walker	
48	D410927	S	1999-06-15	YAMAGISHI; Yoshinobu	
49	D412337	S	1999-07-27	HAMANO; Masataka	
50	D415496	S	1999-10-19	GERBA; George et al.	
51	D416021	S	1999-11-02	GODETTE; Robert G. et al.	
52	D420006	S	2000-02-01	TONINO; Eduardus Josephus Anna Maria	

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53	D429246	S	2000-08-08	HOLMA; Tapani	
54	D430143	S	2000-08-29	RENK; Thomas Edward	
55	D431552	S	2000-10-03	BACKS; Jochen Philipp et al.	
56	D432525	S	2000-10-24	BEECROFT; Troy C.	
57	D444475		2001-07-03	LEVEY; Keith P. et al.	
58	D444475		2001-07-03	LEVEY; Keith P. et al.	
59	D452520		2001-12-25	GOTHAM; David R. et al.	
60	D462339		2002-09-03	ALLEN; Paul G. et al.	
61	D462340		2002-09-03	ALLEN; Paul G. et al.	
62	D462945		2002-09-17	SKULLEY; Gerald W.	
63	D466108		2002-11-26	GLODAVA; Derrick A. et al.	

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64	D468297		2003-01-07	IKEDA; Tetsuya	
65	D474763		2003-05-20	TOZAKI; Ray et al.	
66	D475993		2003-06-17	MEYER; Robert K.	
67	D476643		2003-07-01	YAMAGISHI; Masayuki	
68	D477310		2003-07-15	MORANSAIS; Charles	
69	D478051		2003-08-05	SAGAWA; So	
70	D478069		2003-08-05	BECK; Benjamin et al.	
71	D478896		2003-08-26	SUMMERS; Kim Renee	
72	D479520		2003-09-09	DE; Saulles Stephen	
73	D481056		2003-10-21	KAWASAKI; Mugio et al.	
74	D486145		2004-02-03	KAMINSKI; Dariusz S. et al.	

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75	D491925		2004-06-22	GRIESAU; Gene W. et al.	
76	D493148		2004-07-20	SHIBATA; Kumiko et al.	
77	D495333		2004-08-31	BORSBOOM; Antonious M.	
78	D496003		2004-09-14	SPIRA; Joel S.	
79	D496005		2004-09-14	WANG; Carter	
80	D496335		2004-09-21	SPIRA; Joel S.	
81	D497363		2004-10-19	OLSON; Mark H. et al.	
82	D499086		2004-11-30	POLITO; Fred	
83	D499395		2004-12-07	HSU; Gary	
84	D499718		2004-12-14	CHEN; Alex	
85	D500015		2004-12-21	GUBBE; Bernd	

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86	D501477		2005-02-01	HALL; David	
87	D504872		2005-05-10	UEHARA; Mitsuhiro et al.	
88	D504885		2005-05-10	ZHANG; Jinsong et al.	
89	D506463		2005-06-21	DANIELS; Wilfried Johan Paul Ferdinand	
90	D515072		2006-02-14	LEE; Nikolas Ian	
91	D515557		2006-02-21	OKULEY; James M.	
92	D518475		2006-04-04	YANG; Yu-Ching et al.	
93	D524296		2006-07-04	KITA; Toshiyuki	
94	D527375		2006-08-29	FLORA; William T. et al.	
95	3956591		1976-05-11	GATES Jr.; ,William A.	
96	4105974		1978-08-08	ROGERS; Edwin F.	

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97	4296278		1981-10-20	CULLISON; Steven B. et al.	
98	4306114		1981-12-15	CALLAHAN; Jeffery C.	
99	4509211		1985-04-02	ROBBINS; Michael S.	
100	4530091		1985-07-16	CROCKETT; Gary B.	
101	4696037		1987-09-22	FIERENS; Gustaaf E. M.	
102	4701629		1987-10-20	CITROEN; Maxime H.	
103	4712105		1987-12-08	KOEHLER; Hans E. P.	
104	4731814		1988-03-15	BECKER; William R. et al.	
105	4816989		1989-03-28	FINN; Alan M. et al.	
106	4824059		1989-04-25	BUTLER; Les I.	
107	4845751		1989-07-04	SCHWAB; Brian H.	

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108	4994908		1991-02-19	KUBAN; Curt M. et al.	
109	5086385		1992-02-04	LAUNEY; Reuel O. et al.	
110	5151922		1992-09-29	WEISS; Karl R.	
111	5153579		1992-10-06	FISCH; Kenneth D. et al.	
112	5182552		1993-01-26	PAYNTING; Richard J.	
113	5185680		1993-02-09	KAKUBO; Yuji	
114	5198603		1993-03-30	NISHIKAWA; Masashi et al.	
115	5237327		1993-08-17	SAITOH; Mitsumasa et al.	
116	5272757		1993-12-21	SCOFIELD; William C. et al.	
117	5299266		1994-03-29	LUMSDEN; John L.	
118	5361381		1994-11-01	SHORT; William R.	

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119	5372441		1994-12-13	LOUIS; William M.	
120	5406634		1995-04-11	ANDERSON; Charles W. et al.	
121	5430485		1995-07-04	LANKFORD; Douglas E. et al.	
122	5440644		1995-08-08	FARINELLI; Robert et al.	
123	5457448		1995-10-10	TOTSUKA; Keiichi et al.	
124	5467342		1995-11-14	LOGSTON; Gary L. et al.	
125	5481251		1996-01-02	BUYS; Menno et al.	
126	5491839		1996-02-13	SCHOTZ; Larry	
127	5515345		1996-05-07	BARREIRA; Jeane K. et al.	
128	5533021		1996-07-02	BRANSTAD; Mark W. et al.	
129	5553147		1996-09-03	PINEAU; Joseph E. M.	

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130	5553222		1996-09-03	MILNE; Steve H. et al.	
131	5553314		1996-09-03	GRUBE; Gary W. et al.	
132	5596696		1997-01-21	TINDELL; James M. et al.	
133	5602992		1997-02-11	DANNEELS; Gunner	
134	5623483		1997-04-22	AGRAWAL; Prathima et al.	
135	5625350		1997-04-29	FUKATSU; Hitoshi et al.	
136	5633871		1997-05-27	BLOKS; Rudolf H. J.	
137	5640388		1997-06-17	WOODHEAD; Douglas F. et al.	
138	5652749		1997-07-29	DAVENPORT; David William et al.	
139	5661665		1997-08-26	GLASS; Adam et al.	
140	5661728		1997-08-26	FINOTELLO; Andrea et al.	

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141	5668884		1997-09-16	CLAIR Jr.; Roy Barry et al.	
142	5673323		1997-09-30	SCHOTZ; Larry et al.	
143	5696896		1997-12-09	BADOVINATZ; Peter Richard et al.	
144	5726989		1998-03-10	DOKIC; Miroslav V.	
145	5740235		1998-04-14	LESTER; James William et al.	
146	5742623		1998-04-21	NUBER; Ray et al.	
147	5761320		1998-06-02	FARINELLI; Robert et al.	
148	5774016		1998-06-30	KETTERER; Ernest R.	
149	5787249		1998-07-28	BADOVINATZ; Peter Richard et al.	
150	5790543		1998-08-04	CLOUTIER; Leo	
151	5808662		1998-09-15	KINNEY; Daniel Reid et al.	

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152	5812201		1998-09-22	YOO; Ki Ryung	
153	5815689		1998-09-29	SHAW; George H. J. et al.	
154	5818948		1998-10-06	GULICK; Dale E.	
155	5832024		1998-11-03	SCHOTZ; Larry et al.	
156	5848152		1998-12-08	SLIPY; Michael J. et al.	
157	5852722		1998-12-22	HAMILTON; Graham	
158	5867691		1999-02-02	SHIRAISHI; Hajime	
159	5875233		1999-02-23	COX; Daniel R.	
160	5875354		1999-02-23	CHARLTON; Paul et al.	
161	5887143		1999-03-23	SAITO; Masahiko et al.	
162	5905768		1999-05-18	MATURI; Greg et al.	

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163	5917830		1999-06-29	CHEN; David et al.	
164	5923869		1999-07-13	KASHIWAGI; Yoshiichiro et al.	
165	5923902		1999-07-13	INAGAKI; Yoshihiro	
166	5946343		1999-08-31	SCHOTZ; Larry et al.	
167	5956025		1999-09-21	GOULDEN; Lorna et al.	
168	5956088		1999-09-21	SHEN; Paul et al.	
169	5960006		1999-09-28	MATURI; Greg et al.	
170	5984512		1999-11-16	JONES; Anthony Mark et al.	
171	5987611		1999-11-16	FREUND; Gregor	
172	5990884		1999-11-23	DOUMA; Peter et al.	
173	5991307		1999-11-23	KOMURO; Teruyoshi et al.	

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174	5999906		1999-12-07	MERCS; Laura et al.	
175	6009457		1999-12-28	MOLLER; Matthew Donaldson	
176	6018376		2000-01-25	NAKATANI; Shintarou	
177	6026150		2000-02-15	FRANK; Edward H. et al.	
178	6029196		2000-02-22	LENZ; Michael A.	
179	6031818		2000-02-29	LO; W. Steven et al.	
180	6032202		2000-02-29	LEA; Rodger J. et al.	
181	6038614		2000-03-14	CHAN; Rix S. et al.	
182	6046550		2000-04-04	REFERENCE; Jonathan H. et al.	
183	6061457		2000-05-09	STOCKHAMER; Lee	
184	6078725		2000-06-20	TANAKA; Mitsumasa	

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185	6081266		2000-06-27	SCIAMMARELLA; Eduardo	
186	6088063		2000-07-11	SHIBA; Kosuke	
187	6101195		2000-08-08	LYONS; Paul Wallace et al.	
188	6108485		2000-08-22	KIM; Jeong-Kyu	
189	6108686		2000-08-22	WILLIAMS Jr.; ,Henry R.	
190	6122668		2000-09-19	TENG; Peter Y. et al.	
191	6127941		2000-10-03	VAN RYZIN; John M.	
192	6128318		2000-10-03	SATO; Takashi	
193	6148205		2000-11-14	COTTON; Timothy R.	
194	6154772		2000-11-28	DUNN; Bryan W. et al.	
195	6157957		2000-12-05	BERTHAUD; Jean-Marc	

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196	6163647		2000-12-19	TERASHIMA; Masaru et al.	
197	6169725		2001-01-02	GIBBS; Simon J. et al.	
198	6175872		2001-01-16	NEUMANN; Eric K. et al.	
199	6181383		2001-01-30	FOX; Edward C. et al.	
200	6185737		2001-02-06	NORTHCUTT; J. Duane et al.	
201	6195435		2001-02-27	KITAMURA; John S.	
202	6195436		2001-02-27	SCIBORA; Marco et al.	
203	6199169		2001-03-06	VOTH; Duane J.	
204	6212282		2001-04-03	MERSHON; Stuart	
205	6246701		2001-06-12	SLATTERY; William	
206	6253293		2001-06-26	RAO; Raghunath et al.	

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207	6255961		2001-07-03	VAN RYZIN; John M. et al.	
208	6256554		2001-07-03	DIOLORENZO; Mark	
209	6269406		2001-07-31	DUTCHER; David Paul et al.	
210	6301012		2001-10-09	WHITE; Craig R. et al.	
211	6308207		2001-10-23	TSENG; Weinan William et al.	
212	6310652		2001-10-30	LI; Stephen et al.	
213	6313879		2001-11-06	KUBO; Hiroaki et al.	
214	6321252		2001-11-20	BHOLA; Sumeer et al.	
215	6324586		2001-11-27	JOHNSON; Aric R.	
216	6332147		2001-12-18	MORAN; Thomas P. et al.	
217	6343028		2002-01-29	KUWAOKA; Toshiharu	

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218	6349285		2002-02-19	LIU; Pu et al.	
219	6349339		2002-02-19	WILLIAMS; Henry R.	
220	6351821		2002-02-26	VOTH; Duane J.	
221	6353172		2002-03-05	FAY; Todor C. et al.	
222	6356871		2002-03-12	HEMKUMAR; Nariankadu Datatreya et al.	
223	6404811		2002-06-11	CVETKO; John F. et al.	
224	6418150		2002-07-09	STAATS; Erik P.	
225	6430353		2002-08-06	HONDA; Susumu et al.	
226	6442443		2002-08-27	FUJII; Kazuo et al.	
227	6449642		2002-09-10	BOURKE-DUNPHY; Erin Marie et al.	
228	6449653		2002-09-10	KLEMETS; Anders Edgar et al.	

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229	6456783		2002-09-24	ANDO; Hideo et al.	
230	6463474		2002-10-08	FUH; Tzong-Fen et al.	
231	6466832		2002-10-15	ZUQERT; Benjamin et al.	
232	6469633		2002-10-22	WACHTER; Martin Richard	
233	6487296		2002-11-26	ALLEN; Steven W. et al.	
234	6493832		2002-12-10	ITAKURA; Eisaburo et al.	
235	6522886		2003-02-18	YOUNGS; Edward A. et al.	
236	6526325		2003-02-25	SUSSMAN; Robert et al.	
237	6535121		2003-03-18	MATHNEY; Richard K. et al.	
238	6587127		2003-07-01	LEEKE; Steven D. et al.	
239	6598172		2003-07-22	VANDEUSEN; Mark P. et al.	

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240	6611537		2003-08-26	EDENS; Glenn T. et al.	
241	6631410		2003-10-07	KOWALSKI; John Michael et al.	
242	6636269		2003-10-21	BALDWIN; James A.	
243	6653899		2003-11-25	ORGANVIDEZ; Juan H. et al.	
244	6654720		2003-11-25	GRAHAM; Stephen Glen et al.	
245	6654956		2003-11-25	TRINH; Vincent et al.	
246	6658091		2003-12-02	NAIDOO; Surendra N. et al.	
247	6674803		2004-01-06	KESSELRING; William David	
248	6684060		2004-01-27	CURTIN; Steven D.	
249	6687664		2004-02-03	SUSSMAN; Robert et al.	
250	6704421		2004-03-09	KITAMURA; John S.	

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252	6757517		2004-06-29	CHANG; Chin-Chi	
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268	6882335		2005-04-19	SAARINEN; Pertti	
269	6898642		2005-05-24	CHAFLE; Girish Bhimrao et al.	
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274	6917592		2005-07-12	RAMANKUTTY; Rajesh et al.	
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285	7043477		2006-05-09	MERCER; Ian Cameron et al.	
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292	7092528		2006-08-15	PATRICK; Kyle N. et al.	
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2	101292500	CN	A	2008-10-22	SONY ERICSSON MOBILE COMM AB.		☐
3	1598767	CN	A	2005-03-23	XIAO XUEWEN.		☐
4	0251584	EP	A2	1988-01-07	NORTHERN TELECOM LTD.		☐
5	0672985	EP	A1	1995-09-20	INTERNATIONAL BUSINESS MACHINES.		☐
6	0742674	EP	B1	2014-04-09	TOSHIBA KK [JP]		☐
7	0772374	EP	A2	1997-05-07	BANG & OLUFSEN AS.		☐
8	0895427	EP	A3	2006-01-18	SONY ELECTRONICS INC.		☐
9	1111527	EP	A2	2001-06-27	KABUSHIKI KAISHA TOSHIBA.		☐
10	1122931	EP	A2	2001-08-08	SHARP KABUSHIKI KAISHA.		☐
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13	1410686	EP		2008-03-26	DOLBY LAB LICENSING CORPORATION.		☐
14	1416687	EP	B1	2006-08-02	AVID TECHNOLOGY, INC.		☐
15	1517464	EP	A2	2005-03-23	PHOENIX GOLD INTERNATIONAL INC.		☐
16	2043381	EP	A2	2009-04-01	BANG & OLUFSEN AS.		☐
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24	07-210129	JP		1995-08-11	INTERNAT'L BUSINESS MACH CORP (IBM)		☐
25	2000149391	JP	A	2000-05-30	VICTOR COMPANY OF JAPAN.		☐
26	2001034951	JP		2001-02-09	SANYO ELECTRIC CO.		☐
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28	2002123267	JP	A	2002-04-26	SONY CORP.		☐
29	2002358241	JP	A	2002-12-13	VICTOR COMPANY OF JAPAN.		☐
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31	2003101958	JP		2003-04-04	TOSHIBA CORP.		☐
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39	2009506603	JP	A	2009-02-12	SONY ERICSSON MOBILE COMMUNICATIONS AB.		☐
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41	2009538006	JP	A	2009-10-29	SONY ERICSSON MOBILE COMMUNICATIONS AB.		☐
42	2011130496	JP		2011-06-30	TOSHIBA CORP.		☐
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45	0019693	WO	A1	2000-04-06	WIRELESS SYSTEM TECHNOLOGIES I [CA], et al.	☐
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48	03093950	WO	A2	2003-11-13	GOLDBERG et al.	☐
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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
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Examiner Signature	/MARY J STEELMAN/ (07/11/2017)	Date Considered	07/11/2017
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Attorney Docket Number	04-0601-REEXAM

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CERTIFICATION STATEMENT

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☐ See attached certification statement.

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☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Doc description: Information Disclosure Statement (IDS) Filed

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	Filing Date		2016-12-27	
	First Named Inventor	Lambourne / 7,571,014		
	Art Unit	3992		
	Examiner Name	Steelman		
	Attorney Docket Number	04-0601-REEXAM;15-536-REX		

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1	Opening Rebuttal Expert Report of Andrew Wolfe submitted in Sonos, Inc. v. D&M Holdings, Inc. et al. (D. Del. CA No. 14-1330-RGA) (17-Apr-2017) (506 pages)	☐
2	Notice of Failure to Comply with Ex Parte Reexamination Request Filing Requirements mailed by the Patent Office in reexamination 90/013,959 (25-Mar-2017) (10 pages)	☐
3	Corrected Request for Ex Parte Reexamination submitted filed by the third-party requestor in reexamination 90/013,959 (16-Jun-2017) (126 pages)	☐

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1	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Amended Answer, Defenses, and Counterclaims for Patent Infringement, filed November 30, 2015, 47 pages	☐
2	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Answer to Plaintiff's Second Amended Complaint, filed April 30, 2015, 19 pages	☐
3	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Brief in Support of their Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided October 12, 2016, 24 pages.	☐
4	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' First Amended Answer to Plaintiffs' Third Amended Complaint, filed September 7, 2016, 23 pages.	☐
5	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Opposition to Sonos's Motion to Strike Defendants' New Amended Answer Submitted with their Reply, provided October 3, 2016, 15 pages.	☐
6	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Reply in Support of Partial Motion for Judgment on the Pleadings, filed June 10, 2016, 15 pages	☐
7	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit A: Defendants' Second Amended Answer to Plaintiffs' Third Amended Complaint, filed September 9, 2016, 43 pages	☐
8	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit A: Defendants' Second Amended Answer to Plaintiffs' Third Amended Complaint, provided October 12, 2016, 43 pages.	☐
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10	Sonos, Inc. v. D&M Holdings Inc. et al., First Amended Complaint for Patent Infringement, filed December 17, 2014, 26 pages	☐
11	Sonos, Inc. v. D&M Holdings Inc. et al., Joint Claim Construction Chart, Volume 1 of 3 with Exhibits A-O, filed August 17, 2016, 30 pages	☐

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12	Sonos, Inc. v. D&M Holdings Inc. et al., Opening Brief in Support of Defendants' Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct, provided August 1, 2016, 11 pages.	☐
13	Sonos, Inc. v. D&M Holdings Inc. et al., Opening Brief in Support of Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter, filed May 6, 2016, 27 pages.	☐
14	Sonos, Inc. v. D&M Holdings Inc. et al., Order, provided October 7, 2016, 2 pages.	☐
15	Sonos, Inc. v. D&M Holdings Inc. et al., Plaintiffs Opposition to Defendants' Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct, provided August 26, 2016, 25 pages.	☐
16	Sonos, Inc. v. D&M Holdings Inc. et al., Plaintiff Sonos, Inc.'s Response in Opposition to Defendants' Partial Motion for Judgment on the Pleadings, filed May 27, 2016, 24 pages	☐
17	Sonos, Inc. v. D&M Holdings Inc. et al., Redlined Exhibit B: Defendants' First Amended Answer to Plaintiffs' Third Amended Complaint, provided August 1, 2016, 27 pages.	☐
18	Sonos, Inc. v. D&M Holdings Inc. et al., Reply Brief in Support of Defendants' Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided November 10, 2016, 16 pages.	☐
19	Sonos, Inc. v. D&M Holdings Inc. et al., Reply Brief in Support of Defendants' Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided September 9, 2016, 16 pages.	☐
20	Sonos, Inc. v. D&M Holdings Inc. et al., Second Amended Complaint for Patent Infringement, filed February 27, 2015, 49 pages	☐
21	Sonos, Inc. v. D&M Holdings Inc. et al., Third Amended Complaint for Patent Infringement, filed January 29, 2016, 47 pages	☐
22	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 206-1, Transcript of 101 Hearing (Nov. 28, 2016) (28 pages)	☐

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	90013882
Filing Date	2016-12-27
First Named Inventor	
Art Unit	3992
Examiner Name	STEELMAN, Mary J.
Attorney Docket Number	04-0601-REEXAM

23	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 207, PUBLIC Joint Claim Construction Brief (Nov. 30, 2016) (88 pages)	☐
24	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 214, D&M Post-Markman Letter (Dec. 22, 2016) (13 pages)	☐
25	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 215, Sonos Post-Markman Letter (Dec. 22, 2016) (15 pages)	☐
26	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 219, Claim Construction Opinion (Jan. 12, 2017) (24 pages)	☐
27	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 221, Claim Construction Order (Jan. 18 2017) (2 pages)	☐
28	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), Markman Hearing Transcript (Dec. 14, 2016) (69 pages)	☐
29	Sony: AIR-SA 50R Wireless Speaker, Copyright 2009, 2 pages	☐
30	Sony: Altus Quick Setup Guide ALT-SA32PC, Copyright 2009, 2 pages	☐
31	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-E300, E301 and E801, Copyright 2009, 115 pages	☐
32	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-IT1000/BDV-IS1000, Copyright 2008, 159 pages	☐
33	Sony: Blu-ray Disc/DVD Home Theatre System Operating Instructions for BDV-IZ1000W, Copyright 2010, 88 pages	☐

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34	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ380W/DZ680W/DZ880W, Copyright 2009, 136 pages	☐
35	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ870W, Copyright 2008, 128 pages	☐
36	Sony Ericsson MS500 User Guide, Copyright 2009, 2 pages	☐
37	Sony: Home Theatre System Operating Instructions for HT-IS100, Copyright 2008, 168 pages	☐
38	Sony: HT-IS100, 5.1 Channel Audio System, last updated November 2009, 2 pages	☐
39	Sony: Multi Channel AV Receiver Operating Instructions, 2007, 80 pages.	☐
40	Sony: Multi Channel AV Receiver Operating Instructions for STR-DN1000, Copyright 2009, 136 pages	☐
41	Sony: STR-DN1000, Audio Video Receiver, last updated August 2009, 2 pages	☐
42	Sony: Wireless Surround Kit Operating Instructions for WHAT-SA2, Copyright 2010, 56 pages	☐
43	TAYLOR, Marilou, "Long Island Sound," Audio Video Interiors, April 2000, 8 pages	☐
44	TOA Corporation, Digital Processor DP-0206 DACsys2000 Version 2.00 Software Instruction Manual, Copyright 2001, 67 pages	☐

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45	Understanding Universal Plug and Play, Microsoft White Paper (June 2000) (D+M_0402074-118) (45 pages)	☐
46	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/490,768 filed on 28 July 2003, entitled "Method for synchronizing audio playback between multiple networked devices," 13 pages.	☐
47	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/825,407 filed on 12 September 2006, entitled "Controlling and manipulating groupings in a multi-zone music or media system," 82 pages.	☐
48	Universal Plug and Play Device Architecture V. 1.0, (June 8, 2000) (54 pages)	☐
49	Universal Plug and Play in Windows XP, Tom Fout. Microsoft Corporation (July 2001) (D+M_0402041-73) (33 pages)	☐
50	Universal Plug and Play ("UPnP") AV Architecture:1 For UPnP, Version 1.0, (June 25, 2002) (D+M_0298151-72) (22 pages)	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/MARY J STEELMAN/ (07/12/2017)	Date Considered	07/12/2017
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Litigation Search Report CRU 3999

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From: Renee Preston
Location: CRU 3999
MDE 4B15
Phone: (571) 272-1607
Renee.preston@uspto.gov

Search Notes

U.S. Patent No. 7,571,014

- 1) I performed a KeyCite Search in Westlaw, which retrieves all history on the patent including any litigation.
- 2) I performed a search on the patent in Lexis CourtLink for any open dockets or closed cases.
- 3) I performed a search in Lexis in the Federal Courts and Administrative Materials databases for any cases found.
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Litigation found

Status	Description	Docket	Court
Open	Sonos Inc. v. D&M Holdings Inc. et al	US-DIS-DED	1:14cv1330

2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
|
Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. Court’s construction: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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United States District Court,
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SONOS, INC., Plaintiff,

v.

D&M HOLDINGS INC. d/b/a the D
+M Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendants.

Civil Action No. 14-1330-RGA

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Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyca, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff.

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Nathaniel (Nate) S. Clair II, Esq., JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq., JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendant.

MEMORANDUM OPINION

ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter. (D.I. 116). The issues have

been fully briefed. (D.I. 117, 119, 124). The Court held oral argument on November 14, 2016. (D.I. 206) ("Hr'g Tr."). For the reasons that follow, the Court will deny Defendants' motion.

I. BACKGROUND

Plaintiff filed this patent infringement lawsuit against Defendant on October 14, 2014. (D.I. 1). Plaintiff has asserted a total of twelve patents in this suit. (D.I. 102). Defendants have moved for partial judgment on the pleadings with respect to four of the asserted patents, alleging that the patents are directed to ineligible subject matter. (D.I. 117). The patents at issue in this motion are U.S. Patent Nos. 8,588,949 ("the '949 patent"), 7,571,014 ("the '014 patent"), 9,202,509 ("the '509 patent"), and 9,219,959 ("the '959 patent").

The parties refer to the '949 and '014 patents collectively as the Volume patents. The '949 patent is directed to a multimedia controller and method for adjusting volume levels in a multi-zone system through the use of a user interface. The summary of the invention section of the specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups. According to one aspect of the present invention, a mechanism is provided to allow a user to group some of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner.

('949 patent at 2:28-34). The '014 patent is similarly directed to a method and apparatus for controlling multimedia players in a multi-zone system. The invention is described in the specification as follows:

In general, the present invention pertains to control of audio characteristics of a plurality of multimedia players, or simply players, from a controller. The characteristics include, but are not limited to, an audio source and

an audio volume being played in each of the players. In particular, the present invention enables the user to remotely control the audio characteristics of the players either as a group or as an individual player.

(’014 patent at 2:24-31).

The parties refer to the ’509 and ’959 patents collectively as the Pairing patents. The ’509 patent is directed to methods for grouping and pairing networked audio players. The specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups.... [I]ndividual players may be paired or grouped to stimulate [sic] a multi-channel listening environment. In [sic] instead of grouping selected players to play back an audio item, a user is allowed to activate one of the players to process the data of the audio item, essentially separating the data into individual streams, each of the streams representing a single-sound track and being played back in one of the players, thus creating a multi-channel listening environment with the selected players.

*2 (’509 patent at 2:26-27, 2:59-67). The ’959 patent is similarly directed to devices and methods for grouping, consolidating, and pairing networked audio players. The invention is described in the specification as follows:

In brief summary, the embodiments described herein provide technology for grouping, consolidating, and pairing individual playback devices to create or enhance a multi-channel listening environment. Particularly, the embodiments described herein enable two or more playback devices to be paired, such that multi-channel audio is achieved or enhanced. Such embodiments may be used to produce stereo sound or other audio

environments suitable for audio content encoded with more than two channels, such as for certain kinds of television, movies, and music.

(’959 patent at 2:54-63).

II. LEGAL STANDARD

Section 101 of the Patent Act defines patent-eligible subject matter. It provides: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. The Supreme Court has recognized an implicit exception for three categories of subject matter not eligible for patentability—laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). The purpose of these carve outs is to protect the “basic tools of scientific and technological work.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). “[A] process is not unpatentable simply because it contains a law of nature or a mathematical algorithm,” as “an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Id.* at 1293-94 (internal quotation marks and emphasis omitted). In order “to transform an unpatentable law of nature into a patent-eligible application of such a law, one must do more than simply state the law of nature while adding the words ‘apply it.’ ” *Id.* at 1294 (emphasis omitted).

The Supreme Court recently reaffirmed the framework laid out in *Mayo* “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. First, the court must determine whether the claims are drawn to a patent-ineligible concept. *Id.* If the answer is yes, the court must look to “the elements of the claim both individually and as an ‘ordered combination’ ” to see if there is an “‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’ ” *Id.* (alteration in original). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’ ” *Id.* at 2357

(alterations in original) (quoting *Mayo*, 132 S. Ct. at 1297). “[S]imply appending conventional steps, specified at a high level of generality, to ... abstract ideas cannot make those ... ideas patentable.” *Mayo*, 132 S. Ct. at 1300. Further, “the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment.” *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)). Thus, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Id.* For this second step, the machine-or-transformation test can be a “useful clue,” although it is not determinative. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014), *cert. denied*, 135 S. Ct. 2907 (2015).

*3 Patent eligibility under § 101 is a question of law suitable for resolution on a motion for judgment on the pleadings. *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016). The Federal Circuit follows regional circuit law for motions for judgment on the pleadings. *Id.* Under Third Circuit law, a Rule 12(c) motion for judgment on the pleadings is reviewed under the same standard as a Rule 12(b)(6) motion to dismiss when the Rule 12(c) motion alleges that the plaintiff failed to state a claim upon which relief can be granted. *Revell v. Port Auth.*, 598 F.3d 128, 134 (3d Cir. 2010); *Turbe v. Gov’t of the Virgin Islands*, 938 F.2d 427, 428 (3d Cir. 1991). The court must accept the factual allegations in the complaint and take them in the light most favorable to the non-moving party. *Erickson v. Pardus*, 551 U.S. 89, 94 (2007); *Christopher v. Harbury*, 536 U.S. 403, 406 (2002).

The Federal Circuit has held that the district court is not required to individually address claims not asserted or identified by the non-moving party, so long as the court identifies a representative claim and “all the claims are substantially similar and linked to the same abstract idea.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (internal quotation marks omitted).

III. DISCUSSION

A. The Volume Patents

The ‘949 patent contains three independent claims: claim 1, claim 8, and claim 15. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9).¹ Claim 1 reads:

1. A multimedia controller including a processor, the controller configured to:

provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent playback device configured to playback a multimedia output from multimedia source;

accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source;

for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; and

accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.

(‘949 patent, claim 1).

The ‘014 patent contains four independent claims, three of which have been asserted: claim 1, claim 16, and claim 38. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9). Claim 1 reads:

*4 1. A method for controlling a plurality of players, the method comprising: displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1).

"First, we determine whether the claims at issue are directed to [an abstract idea]." *Alice*, 134 S. Ct. at 2355. "The 'abstract ideas' category embodies 'the longstanding rule that an idea of itself is not patentable.'" *Id.* (internal quotation marks omitted) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). "The Supreme Court has not established a definitive rule to determine what constitutes an 'abstract idea' sufficient to satisfy the first step of the *Mayo/Alice* inquiry." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016). The Supreme Court has recognized, however, that "fundamental economic practice[s]," *Billski*, 561 U.S. at 611, "method[s] of organizing human activity," *Alice*, 134 S. Ct. at 2356, and mathematical algorithms, *Benson*, 409 U.S. at 64, are abstract ideas. In navigating the parameters of such categories, courts have generally sought to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334. "But in determining whether the claims are directed to an abstract idea, we must be careful to avoid oversimplifying the claims because '[a]t some level, all inventions... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) (alterations in original) (quoting *Alice*, 134 S. Ct. at 2354).

Defendants assert that the "Volume patents are directed to the abstract idea of 'controlling audio settings for multiple audio devices.'" (D.I. 117 at 13). Defendants contend that, like the concept of collecting and storing data in *Content Extraction*, the Volume patents seek to claim a concept that is "very basic" and "fundamental to the entire technological field described in the Asserted Patents." (*Id.* at 14). According to Defendants, the claimed method "can be manually performed by a human." (*Id.*). Defendants also argue that the asserted claims of the '014 patent

encompass prior art devices because the claims are not limited to wirelessly networked audio players. (*Id.* at 15).

Plaintiff counters that Defendants are oversimplifying in characterizing the invention. (D.I. 126 at 12). Plaintiff asserts that the invention embodies "a concrete and tangible concept limited to a specific technological field and it is tethered to specific devices." (*Id.* at 13). Plaintiff further asserts that the invention discloses new functionality and is not simply an automation of steps previously performed by humans. (*Id.*) Finally, Plaintiff objects to Defendants' characterization of the "network" as encompassing prior art hardwired audio systems. (*Id.* at 10). Plaintiff contends, rather, that the claims are limited to audio players on a data network. (*Id.*).

*5 I agree with Plaintiff that Defendants have advanced an oversimplified characterization of the allegedly abstract idea. "Under step one of *Mayo/Alice*, the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents*, 790 F.3d at 1346. As the Federal Circuit has cautioned, "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims." *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *TLI Commc'ns*, 823 F.3d at 611).

As support for their proposed characterization, Defendants cite to several cases they claim are similar to this one. Many of these cases are inapplicable, however, as they are directed to the abstract idea of collecting, organizing, and storing data. *See TLI Commc'ns*, 823 F.3d at 613 ("claims directed to abstract idea of classifying, organizing, and storing digital images"); *Content Extraction*, 776 F.3d at 1347 (claims drawn to abstract idea of collecting, recognizing, and storing data); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (claims drawn to abstract idea of "organizing information through mathematical correlations" where claims "not tied to a specific structure or machine"); *Visual Memory LLC v. NVIDIA Corp.*, 2016 WL 3041847, at *4 (D. Del. May 27, 2016), *appeal docketed*, No. 16-2254 (Fed. Cir. June 28, 2016) (claims drawn to "abstract idea of categorical data storage"). In order to make the argument that these cases are similar to this one, Defendants offer additional alternative characterizations

of the alleged abstract idea, arguing the Volume patents are directed to “organizing and manipulating electronic information” (D.I. 117 at 15) or, alternatively, “organizing and distributing information.” (*Id.* at 16). These alternative characterizations are a far cry from, and oversimplified to a greater degree than, “controlling audio settings for multiple audio devices.” (*Id.* at 13).

I think these claims are far more specific and limited than Defendants argue. For example, claim 1 of the '014 patent could only be considered to encompass collecting and organizing information if I were to restrict my analysis to the first two limitations involving displaying lists of available players. This is inappropriate. Considering the claim in its entirety reveals that there is more to the claim than organizing information. Rather, the third limitation calls for “forming a zone group,” an action that involves controlling actual devices and effecting a fundamental alteration in how the plurality of zone players are networked together. The remaining limitations involve controlling the zone players that have been grouped together, also actions that are not accurately characterized as organizing information. Similarly, claim 1 of the '949 patent claims a controller that provides a user interface allowing for the formation of groups of zone players and control of these players. To characterize this claim as being drawn to “organizing and distributing information” is a gross oversimplification. Defendants' arguments ignore tangible limitations that are tied to specific devices. I am not persuaded.

For similar reasons, I reject Defendants' argument that the concept claimed is fundamental to the entire field. The claims of both Volume patents relate not to the field of audio devices generally, but only to methods and devices for controlling the specific “players” referenced in the claims. I have already construed the term “player” to mean “data network device configured to process and output audio.” (D.I. 219 at 9). Claim 1 of each of the Volume Patents, therefore, requires concrete, tangible components, specifically a “plurality of players,” where the players are the specific devices described in the patents. Only under Defendants' oversimplified characterization of these patents could the claimed concept be considered fundamental to the technological field.

*6 Defendants further argue that these patents are similar to those invalidated in *TLI Commc'ns*. (Hr'g Tr. at 5:21-6:10). In *TLI*, the claims were found to be abstract

at step one because they were “directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two” rather than being directed to “a specific improvement to computer functionality.” *TLI Commc'ns*, 823 F.3d at 612. Importantly, however, the specification of the patent at issue in *TLI* did not “provide any technical details for the tangible components.” *Id.* In contrast, the claims of the Volume patents are not directed to “generic technology.” They are directed to controllers and networked audio players that are described in detail in the specifications. ('014 patent at 6:18-8:49; '949 patent at 7:8-13:10). Furthermore, the specifications of both Volume patents describe the problems presented and solved by these inventions as “dynamically managing the ad hoc creation and deletion of groups” of audio players and “control of the audio players as a group.” ('014 patent at 2:3-6; '949 patent at 2:10-13). Although Defendants attempt to argue that this is a “manufactured problem,” I do not think *TLI* is analogous to this case both because the Volume patents are directed to specific rather than generic technology and present a specific improvement to the existing technology.

Defendants next argue that “each of the recited steps can be manually performed by a human.” (D.I. 117 at 14). However, Defendants do not explain how a human could manually accomplish this feat. Nor could they. Performing the method of claim 1 of the '014 patent requires the following steps: 1) displaying a list of available players on a screen; 2) if one of the players is a zone head, displaying on the screen a second list of players that could be grouped with the zone head; 3) forming a group by selecting some of the players to group with the zone head; 4) synchronizing the players in the group; and 5) using the controller to synchronously adjust the volume of all of the grouped players. Even setting aside the steps involving displaying lists on a screen, it seems clear that in order to form a group in step 3 in a hard wired system contemplated by Defendants, a user would need to re-wire the audio system each time a new group is formed. Forming and changing the composition of player groups in real time simply by making a few selections on the screen of a device is not something a human could do manually in a hard wired system.

Similarly, claim 1 of the '949 patent is a device claim for a controller used to form and control groups of

audio players. Defendants' arguments that a human could perform the actions the device is said to perform is at best illogical. Defendants "provided no evidence that the process previously used [to group audio speakers] is the same as the process required by the claims." *McRO, Inc.*, 837 F.3d at 1314. As in *McRO*, the prior art method of grouping and controlling audio devices (*i.e.* by hardwiring them into the desired configuration) "would not be within the scope of the claims" because it does not involving using a controller with a user interface to view lists of available devices on the data network that are then grouped and controlled synchronously. Furthermore, unlike in *McRO*, the method is not implemented on a general purpose computer. Rather, as discussed above, the method is directed to specific devices that are described and claimed in the patents.

It seems to me that the invention as claimed in each of the Volume patents represents a substantial improvement over the existing technology—the invention described in the patents allows for the audio devices to be grouped and regrouped in real time simply using a user interface to select the desired members of the groups without the need for altering any hard wiring in the physical system. This is not simply a "more efficient" method of doing something already done by humans. It is a method that provides for capabilities far beyond what a traditional hardwired system offers. Plaintiff does not contend that audio speakers are a new technology. What is claimed, however, is not a traditional speaker; rather, the claims are directed to an improvement to the existing technology for grouping and controlling audio speakers. Furthermore, the claims are grounded in a specific device—the player/zone player/playback device that is described in the patent and that I previously construed to mean "data network device configured to process and output audio." (D.I. 219 at 9).

*7 Finally, Defendants argue that the claims of the '014 patent "encompass the admitted prior art of hard-wired traditional multi-zone systems." (D.I. 117 at 15). I am not persuaded that this is true for many of the same reasons I have already explained above. Whether it is true or not, however, is irrelevant in the context of this motion because "section 101 eligibility should not become a substitute for a patentability analysis related to prior art, adequate disclosure, or the other conditions and requirements of Title 35." *Research Corp. Tech., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010).

For the reasons given above, I find that the Volume patents claim patent-eligible subject matter under § 101. Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

B. The Pairing Patents

The '509 patent contains three independent claims: claim 1, claim 11, and claim 23. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9).² Claim 1 reads:

1. A method comprising:

identifying, via a controller, a plurality of playback devices on a local area network (LAN), wherein at least one of the plurality of playback devices is configured to request an audio data stream from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of playback devices to process the requested audio data stream into at least one of a first and a second channel of the requested audio data stream and to reproduce a respective one of the first and the second channel, wherein the plurality of playback devices, when grouped, provide multi-channel sound, such that a first playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the first channel of the requested audio data stream for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested audio data stream for the group; and

displaying, via the controller, an indication that each of the plurality of playback devices is configured to reproduce a respective channel.

('509 patent, claim 1). The '959 patent contains two independent claims. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 14 is representative. (Hr'g Tr. at 61:6-9). Claim 14 reads:

14. A method for outputting audio in a multi-channel listening environment, wherein the method is performed by a playback device, the method comprising:

receiving audio data over a network;

processing the audio data before the playback device outputs audio from a plurality of speaker drivers based on the audio data;

when the playback device is configured for a first type of pairing, performing a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers;

when the playback device is configured for a second type of pairing, performing a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers.

('959 patent, claim 14).

*8 Defendants argue that the claims of the '509 patent are directed to the abstract idea of "grouping and controlling audio players." (D.I. 117 at 19). According to Defendants, the method described in claim 1 forms "the very foundation of any audio system with more than one speaker." (*Id.*). As to the '959 patent, Defendants argue that the claims are directed to the abstract idea of "changing audio settings based on programmed instructions." (*Id.* at 23). Defendants further allege that the claims of this patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (*Id.*). As with the other patents at issue in this motion, Defendants argue that the claimed methods from both of the Pairing patents "can be performed entirely by humans." (*Id.*).

Plaintiff respond that the claims of both of the Pairing patents "are directed to several specific improvements in existing audio system technology." (D.I. 126 at 17, 21). Plaintiff also takes issue with Defendants' contention that the claimed methods can be performed by humans. (*Id.* at 19, 22). Plaintiff further argues, as with the Volume patents, that Defendants have advanced an oversimplified characterization of the claims. (*Id.* at 19).

Defendants make the same arguments here as they did for the Volume patents. I again reject those arguments. As with the Volume patents, I agree with Plaintiff that Defendants' characterization of the purportedly abstract idea is oversimplified. Just as with the Volume patents, the Pairing patents claim methods that involve specific devices (playback devices and controllers) that are described in

detail in the specifications. ('509 patent at 5:63-8:50; '959 patent at 7:8-13:10). Furthermore, as with the Volume patents, the claimed methods do not represent simply an automation of something done manually. Rather, the method of claim 1 the '509 patent requires using a controller to identify the playback devices on a local area network, instruct some of the devices to each output different channels of audio data, and display on the controller's screen which device is outputting which channel. In order to perform this method manually, leaving aside the steps involving using a controller or displaying on the screen of the controller, a person would have to manually rewire the devices each time a new selection is made for which devices are to output which channels. Similarly, the method of claim 14 of the '959 patent is performed by the playback device and involves receiving and then processing audio data, recognizing the type of pairing that has been selected for that playback devices, performing an equalization previously specified for that type of pairing, and then outputting audio. This simply is not the kind of method that could be performed manually and, even if it were, automating the method as claimed represents a substantial improvement to the functionality of a specific device. I also reject Defendants' argument that the claims of the '959 patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (D.I. 117 at 23). It seems clear to me that the two patents claim substantially different methods even if it could also be said they address "the same general idea."

At oral argument, Defendants drew an analogy between this case and the claims at issue in *Personalized Media*. (Hr'g Tr. at 12:16-13:2). *Personalized Media* involved a claim "directed to the abstract idea of using personal information to create a customized presentation." *Personalized Media Comm'ns, LLC v. Amazon.com, Inc.*, 161 F.Supp. 3d 325, 330 (D. Del. 2015), *aff'd*, 2016 WL 7118532 (Fed. Cir. Dec. 7, 2016). The claim in *Personalized Media*, however, is not analogous to the claims of the Pairing patents. These patents, like the Volume patents, are not about organizing, manipulating, or distributing information. Rather, these patents claim improvements to specific devices, not generic technology, and the methods involve controlling the devices to effect tangible changes in their configurations. For these reasons, I find that the Pairing patents claim patent-eligible subject matter under § 101.

*9 Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

For the reasons set forth above, the motion for judgment on the pleadings for lack of patentable subject matter (D.I. 116) will be denied. An appropriate order will be entered.

IV. CONCLUSION

All Citations

Slip Copy, 2017 WL 971700

Footnotes

- 1 At oral argument on November 14, 2016, the parties were directed to submit additional briefing to the extent that they felt claim 1 of each of these patents was not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that claim 1 of each patent is not representative. (D.I. 225).
- 2 At oral argument, the parties were directed to submit additional briefing to the extent that they felt claim 1 of the '509 patent and claim 14 of the '959 patent were not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that these claims are not representative. (D.I. 225).

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
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Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. Court’s construction: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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United States District Court,
D. Delaware.

SONOS, INC., Plaintiff,

v.

D&M HOLDINGS INC. d/b/a the D
+M Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendants.

Civil Action No. 14-1330-RGA

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Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyca, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff.

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Nathaniel (Nate) S. Clair II, Esq., JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq., JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendant.

MEMORANDUM OPINION

ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter. (D.I. 116). The issues have

been fully briefed. (D.I. 117, 119, 124). The Court held oral argument on November 14, 2016. (D.I. 206) ("Hr'g Tr."). For the reasons that follow, the Court will deny Defendants' motion.

I. BACKGROUND

Plaintiff filed this patent infringement lawsuit against Defendant on October 14, 2014. (D.I. 1). Plaintiff has asserted a total of twelve patents in this suit. (D.I. 102). Defendants have moved for partial judgment on the pleadings with respect to four of the asserted patents, alleging that the patents are directed to ineligible subject matter. (D.I. 117). The patents at issue in this motion are U.S. Patent Nos. 8,588,949 ("the '949 patent"), 7,571,014 ("the '014 patent"), 9,202,509 ("the '509 patent"), and 9,219,959 ("the '959 patent").

The parties refer to the '949 and '014 patents collectively as the Volume patents. The '949 patent is directed to a multimedia controller and method for adjusting volume levels in a multi-zone system through the use of a user interface. The summary of the invention section of the specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups. According to one aspect of the present invention, a mechanism is provided to allow a user to group some of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner.

('949 patent at 2:28-34). The '014 patent is similarly directed to a method and apparatus for controlling multimedia players in a multi-zone system. The invention is described in the specification as follows:

In general, the present invention pertains to control of audio characteristics of a plurality of multimedia players, or simply players, from a controller. The characteristics include, but are not limited to, an audio source and

an audio volume being played in each of the players. In particular, the present invention enables the user to remotely control the audio characteristics of the players either as a group or as an individual player.

(’014 patent at 2:24-31).

The parties refer to the ’509 and ’959 patents collectively as the Pairing patents. The ’509 patent is directed to methods for grouping and pairing networked audio players. The specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups.... [I]ndividual players may be paired or grouped to stimulate [sic] a multi-channel listening environment. In [sic] instead of grouping selected players to play back an audio item, a user is allowed to activate one of the players to process the data of the audio item, essentially separating the data into individual streams, each of the streams representing a single-sound track and being played back in one of the players, thus creating a multi-channel listening environment with the selected players.

*2 (’509 patent at 2:26-27, 2:59-67). The ’959 patent is similarly directed to devices and methods for grouping, consolidating, and pairing networked audio players. The invention is described in the specification as follows:

In brief summary, the embodiments described herein provide technology for grouping, consolidating, and pairing individual playback devices to create or enhance a multi-channel listening environment. Particularly, the embodiments described herein enable two or more playback devices to be paired, such that multi-channel audio is achieved or enhanced. Such embodiments may be used to produce stereo sound or other audio

environments suitable for audio content encoded with more than two channels, such as for certain kinds of television, movies, and music.

(’959 patent at 2:54-63).

II. LEGAL STANDARD

Section 101 of the Patent Act defines patent-eligible subject matter. It provides: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. The Supreme Court has recognized an implicit exception for three categories of subject matter not eligible for patentability—laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). The purpose of these carve outs is to protect the “basic tools of scientific and technological work.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). “[A] process is not unpatentable simply because it contains a law of nature or a mathematical algorithm,” as “an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Id.* at 1293-94 (internal quotation marks and emphasis omitted). In order “to transform an unpatentable law of nature into a patent-eligible application of such a law, one must do more than simply state the law of nature while adding the words ‘apply it.’ ” *Id.* at 1294 (emphasis omitted).

The Supreme Court recently reaffirmed the framework laid out in *Mayo* “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. First, the court must determine whether the claims are drawn to a patent-ineligible concept. *Id.* If the answer is yes, the court must look to “the elements of the claim both individually and as an ‘ordered combination’ ” to see if there is an “‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’ ” *Id.* (alteration in original). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’ ” *Id.* at 2357

(alterations in original) (quoting *Mayo*, 132 S. Ct. at 1297). “[S]imply appending conventional steps, specified at a high level of generality, to ... abstract ideas cannot make those ... ideas patentable.” *Mayo*, 132 S. Ct. at 1300. Further, “the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment.” *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)). Thus, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Id.* For this second step, the machine-or-transformation test can be a “useful clue,” although it is not determinative. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014), *cert. denied*, 135 S. Ct. 2907 (2015).

*3 Patent eligibility under § 101 is a question of law suitable for resolution on a motion for judgment on the pleadings. *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016). The Federal Circuit follows regional circuit law for motions for judgment on the pleadings. *Id.* Under Third Circuit law, a Rule 12(c) motion for judgment on the pleadings is reviewed under the same standard as a Rule 12(b)(6) motion to dismiss when the Rule 12(c) motion alleges that the plaintiff failed to state a claim upon which relief can be granted. *Revell v. Port Auth.*, 598 F.3d 128, 134 (3d Cir. 2010); *Turbe v. Gov’t of the Virgin Islands*, 938 F.2d 427, 428 (3d Cir. 1991). The court must accept the factual allegations in the complaint and take them in the light most favorable to the non-moving party. *Erickson v. Pardus*, 551 U.S. 89, 94 (2007); *Christopher v. Harbury*, 536 U.S. 403, 406 (2002).

The Federal Circuit has held that the district court is not required to individually address claims not asserted or identified by the non-moving party, so long as the court identifies a representative claim and “all the claims are substantially similar and linked to the same abstract idea.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (internal quotation marks omitted).

III. DISCUSSION

A. The Volume Patents

The ‘949 patent contains three independent claims: claim 1, claim 8, and claim 15. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9).¹ Claim 1 reads:

1. A multimedia controller including a processor, the controller configured to:

provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent playback device configured to playback a multimedia output from multimedia source;

accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source;

for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; and

accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.

(‘949 patent, claim 1).

The ‘014 patent contains four independent claims, three of which have been asserted: claim 1, claim 16, and claim 38. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9). Claim 1 reads:

*4 1. A method for controlling a plurality of players, the method comprising: displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1).

"First, we determine whether the claims at issue are directed to [an abstract idea]." *Alice*, 134 S. Ct. at 2355. "The 'abstract ideas' category embodies 'the longstanding rule that an idea of itself is not patentable.'" *Id.* (internal quotation marks omitted) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). "The Supreme Court has not established a definitive rule to determine what constitutes an 'abstract idea' sufficient to satisfy the first step of the *Mayo/Alice* inquiry." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016). The Supreme Court has recognized, however, that "fundamental economic practice[s]," *Iliski*, 561 U.S. at 611, "method[s] of organizing human activity," *Alice*, 134 S. Ct. at 2356, and mathematical algorithms, *Benson*, 409 U.S. at 64, are abstract ideas. In navigating the parameters of such categories, courts have generally sought to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334. "But in determining whether the claims are directed to an abstract idea, we must be careful to avoid oversimplifying the claims because '[a]t some level, all inventions... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) (alterations in original) (quoting *Alice*, 134 S. Ct. at 2354).

Defendants assert that the "Volume patents are directed to the abstract idea of 'controlling audio settings for multiple audio devices.'" (D.I. 117 at 13). Defendants contend that, like the concept of collecting and storing data in *Content Extraction*, the Volume patents seek to claim a concept that is "very basic" and "fundamental to the entire technological field described in the Asserted Patents." (*Id.* at 14). According to Defendants, the claimed method "can be manually performed by a human." (*Id.*). Defendants also argue that the asserted claims of the '014 patent

encompass prior art devices because the claims are not limited to wirelessly networked audio players. (*Id.* at 15).

Plaintiff counters that Defendants are oversimplifying in characterizing the invention. (D.I. 126 at 12). Plaintiff asserts that the invention embodies "a concrete and tangible concept limited to a specific technological field and it is tethered to specific devices." (*Id.* at 13). Plaintiff further asserts that the invention discloses new functionality and is not simply an automation of steps previously performed by humans. (*Id.*) Finally, Plaintiff objects to Defendants' characterization of the "network" as encompassing prior art hardwired audio systems. (*Id.* at 10). Plaintiff contends, rather, that the claims are limited to audio players on a data network. (*Id.*).

*5 I agree with Plaintiff that Defendants have advanced an oversimplified characterization of the allegedly abstract idea. "Under step one of *Mayo/Alice*, the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents*, 790 F.3d at 1346. As the Federal Circuit has cautioned, "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims." *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *TLI Commc'ns*, 823 F.3d at 611).

As support for their proposed characterization, Defendants cite to several cases they claim are similar to this one. Many of these cases are inapplicable, however, as they are directed to the abstract idea of collecting, organizing, and storing data. See *TLI Commc'ns*, 823 F.3d at 613 ("claims directed to abstract idea of classifying, organizing, and storing digital images"); *Content Extraction*, 776 F.3d at 1347 (claims drawn to abstract idea of collecting, recognizing, and storing data); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (claims drawn to abstract idea of "organizing information through mathematical correlations" where claims "not tied to a specific structure or machine"); *Visual Memory LLC v. NVIDIA Corp.*, 2016 WL 3041847, at *4 (D. Del. May 27, 2016), *appeal docketed*, No. 16-2254 (Fed. Cir. June 28, 2016) (claims drawn to "abstract idea of categorical data storage"). In order to make the argument that these cases are similar to this one, Defendants offer additional alternative characterizations

of the alleged abstract idea, arguing the Volume patents are directed to “organizing and manipulating electronic information” (D.I. 117 at 15) or, alternatively, “organizing and distributing information.” (*Id.* at 16). These alternative characterizations are a far cry from, and oversimplified to a greater degree than, “controlling audio settings for multiple audio devices.” (*Id.* at 13).

I think these claims are far more specific and limited than Defendants argue. For example, claim 1 of the '014 patent could only be considered to encompass collecting and organizing information if I were to restrict my analysis to the first two limitations involving displaying lists of available players. This is inappropriate. Considering the claim in its entirety reveals that there is more to the claim than organizing information. Rather, the third limitation calls for “forming a zone group,” an action that involves controlling actual devices and effecting a fundamental alteration in how the plurality of zone players are networked together. The remaining limitations involve controlling the zone players that have been grouped together, also actions that are not accurately characterized as organizing information. Similarly, claim 1 of the '949 patent claims a controller that provides a user interface allowing for the formation of groups of zone players and control of these players. To characterize this claim as being drawn to “organizing and distributing information” is a gross oversimplification. Defendants' arguments ignore tangible limitations that are tied to specific devices. I am not persuaded.

For similar reasons, I reject Defendants' argument that the concept claimed is fundamental to the entire field. The claims of both Volume patents relate not to the field of audio devices generally, but only to methods and devices for controlling the specific “players” referenced in the claims. I have already construed the term “player” to mean “data network device configured to process and output audio.” (D.I. 219 at 9). Claim 1 of each of the Volume Patents, therefore, requires concrete, tangible components, specifically a “plurality of players,” where the players are the specific devices described in the patents. Only under Defendants' oversimplified characterization of these patents could the claimed concept be considered fundamental to the technological field.

*6 Defendants further argue that these patents are similar to those invalidated in *TLI Commc'ns*. (Hr'g Tr. at 5:21-6:10). In *TLI*, the claims were found to be abstract

at step one because they were “directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two” rather than being directed to “a specific improvement to computer functionality.” *TLI Commc'ns*, 823 F.3d at 612. Importantly, however, the specification of the patent at issue in *TLI* did not “provide any technical details for the tangible components.” *Id.* In contrast, the claims of the Volume patents are not directed to “generic technology.” They are directed to controllers and networked audio players that are described in detail in the specifications. ('014 patent at 6:18-8:49; '949 patent at 7:8-13:10). Furthermore, the specifications of both Volume patents describe the problems presented and solved by these inventions as “dynamically managing the ad hoc creation and deletion of groups” of audio players and “control of the audio players as a group.” ('014 patent at 2:3-6; '949 patent at 2:10-13). Although Defendants attempt to argue that this is a “manufactured problem,” I do not think *TLI* is analogous to this case both because the Volume patents are directed to specific rather than generic technology and present a specific improvement to the existing technology.

Defendants next argue that “each of the recited steps can be manually performed by a human.” (D.I. 117 at 14). However, Defendants do not explain how a human could manually accomplish this feat. Nor could they. Performing the method of claim 1 of the '014 patent requires the following steps: 1) displaying a list of available players on a screen; 2) if one of the players is a zone head, displaying on the screen a second list of players that could be grouped with the zone head; 3) forming a group by selecting some of the players to group with the zone head; 4) synchronizing the players in the group; and 5) using the controller to synchronously adjust the volume of all of the grouped players. Even setting aside the steps involving displaying lists on a screen, it seems clear that in order to form a group in step 3 in a hard wired system contemplated by Defendants, a user would need to re-wire the audio system each time a new group is formed. Forming and changing the composition of player groups in real time simply by making a few selections on the screen of a device is not something a human could do manually in a hard wired system.

Similarly, claim 1 of the '949 patent is a device claim for a controller used to form and control groups of

audio players. Defendants' arguments that a human could perform the actions the device is said to perform is at best illogical. Defendants "provided no evidence that the process previously used [to group audio speakers] is the same as the process required by the claims." *McRO, Inc.*, 837 F.3d at 1314. As in *McRO*, the prior art method of grouping and controlling audio devices (*i.e.* by hardwiring them into the desired configuration) "would not be within the scope of the claims" because it does not involving using a controller with a user interface to view lists of available devices on the data network that are then grouped and controlled synchronously. Furthermore, unlike in *McRO*, the method is not implemented on a general purpose computer. Rather, as discussed above, the method is directed to specific devices that are described and claimed in the patents.

It seems to me that the invention as claimed in each of the Volume patents represents a substantial improvement over the existing technology—the invention described in the patents allows for the audio devices to be grouped and regrouped in real time simply using a user interface to select the desired members of the groups without the need for altering any hard wiring in the physical system. This is not simply a "more efficient" method of doing something already done by humans. It is a method that provides for capabilities far beyond what a traditional hardwired system offers. Plaintiff does not contend that audio speakers are a new technology. What is claimed, however, is not a traditional speaker; rather, the claims are directed to an improvement to the existing technology for grouping and controlling audio speakers. Furthermore, the claims are grounded in a specific device—the player/zone player/playback device that is described in the patent and that I previously construed to mean "data network device configured to process and output audio." (D.I. 219 at 9).

*7 Finally, Defendants argue that the claims of the '014 patent "encompass the admitted prior art of hard-wired traditional multi-zone systems." (D.I. 117 at 15). I am not persuaded that this is true for many of the same reasons I have already explained above. Whether it is true or not, however, is irrelevant in the context of this motion because "section 101 eligibility should not become a substitute for a patentability analysis related to prior art, adequate disclosure, or the other conditions and requirements of Title 35." *Research Corp. Tech., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010).

For the reasons given above, I find that the Volume patents claim patent-eligible subject matter under § 101. Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

B. The Pairing Patents

The '509 patent contains three independent claims: claim 1, claim 11, and claim 23. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9).² Claim 1 reads:

1. A method comprising:

identifying, via a controller, a plurality of playback devices on a local area network (LAN), wherein at least one of the plurality of playback devices is configured to request an audio data stream from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of playback devices to process the requested audio data stream into at least one of a first and a second channel of the requested audio data stream and to reproduce a respective one of the first and the second channel, wherein the plurality of playback devices, when grouped, provide multi-channel sound, such that a first playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the first channel of the requested audio data stream for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested audio data stream for the group; and

displaying, via the controller, an indication that each of the plurality of playback devices is configured to reproduce a respective channel.

('509 patent, claim 1). The '959 patent contains two independent claims. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 14 is representative. (Hr'g Tr. at 61:6-9). Claim 14 reads:

14. A method for outputting audio in a multi-channel listening environment, wherein the method is performed by a playback device, the method comprising:

receiving audio data over a network;

processing the audio data before the playback device outputs audio from a plurality of speaker drivers based on the audio data;

when the playback device is configured for a first type of pairing, performing a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers;

when the playback device is configured for a second type of pairing, performing a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers.

('959 patent, claim 14).

*8 Defendants argue that the claims of the '509 patent are directed to the abstract idea of "grouping and controlling audio players." (D.I. 117 at 19). According to Defendants, the method described in claim 1 forms "the very foundation of any audio system with more than one speaker." (*Id.*). As to the '959 patent, Defendants argue that the claims are directed to the abstract idea of "changing audio settings based on programmed instructions." (*Id.* at 23). Defendants further allege that the claims of this patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (*Id.*). As with the other patents at issue in this motion, Defendants argue that the claimed methods from both of the Pairing patents "can be performed entirely by humans." (*Id.*).

Plaintiff respond that the claims of both of the Pairing patents "are directed to several specific improvements in existing audio system technology." (D.I. 126 at 17, 21). Plaintiff also takes issue with Defendants' contention that the claimed methods can be performed by humans. (*Id.* at 19, 22). Plaintiff further argues, as with the Volume patents, that Defendants have advanced an oversimplified characterization of the claims. (*Id.* at 19).

Defendants make the same arguments here as they did for the Volume patents. I again reject those arguments. As with the Volume patents, I agree with Plaintiff that Defendants' characterization of the purportedly abstract idea is oversimplified. Just as with the Volume patents, the Pairing patents claim methods that involve specific devices (playback devices and controllers) that are described in

detail in the specifications. ('509 patent at 5:63-8:50; '959 patent at 7:8-13:10). Furthermore, as with the Volume patents, the claimed methods do not represent simply an automation of something done manually. Rather, the method of claim 1 the '509 patent requires using a controller to identify the playback devices on a local area network, instruct some of the devices to each output different channels of audio data, and display on the controller's screen which device is outputting which channel. In order to perform this method manually, leaving aside the steps involving using a controller or displaying on the screen of the controller, a person would have to manually rewire the devices each time a new selection is made for which devices are to output which channels. Similarly, the method of claim 14 of the '959 patent is performed by the playback device and involves receiving and then processing audio data, recognizing the type of pairing that has been selected for that playback devices, performing an equalization previously specified for that type of pairing, and then outputting audio. This simply is not the kind of method that could be performed manually and, even if it were, automating the method as claimed represents a substantial improvement to the functionality of a specific device. I also reject Defendants' argument that the claims of the '959 patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (D.I. 117 at 23). It seems clear to me that the two patents claim substantially different methods even if it could also be said they address "the same general idea."

At oral argument, Defendants drew an analogy between this case and the claims at issue in *Personalized Media*. (Hr'g Tr. at 12:16-13:2). *Personalized Media* involved a claim "directed to the abstract idea of using personal information to create a customized presentation." *Personalized Media Comm'ns, LLC v. Amazon.com, Inc.*, 161 F.Supp. 3d 325, 330 (D. Del. 2015), *aff'd*, 2016 WL 7118532 (Fed. Cir. Dec. 7, 2016). The claim in *Personalized Media*, however, is not analogous to the claims of the Pairing patents. These patents, like the Volume patents, are not about organizing, manipulating, or distributing information. Rather, these patents claim improvements to specific devices, not generic technology, and the methods involve controlling the devices to effect tangible changes in their configurations. For these reasons, I find that the Pairing patents claim patent-eligible subject matter under § 101.

*9 Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

For the reasons set forth above, the motion for judgment on the pleadings for lack of patentable subject matter (D.I. 116) will be denied. An appropriate order will be entered.

IV. CONCLUSION

All Citations

Slip Copy, 2017 WL 971700

Footnotes

- 1 At oral argument on November 14, 2016, the parties were directed to submit additional briefing to the extent that they felt claim 1 of each of these patents was not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that claim 1 of each patent is not representative. (D.I. 225).
- 2 At oral argument, the parties were directed to submit additional briefing to the extent that they felt claim 1 of the '509 patent and claim 14 of the '959 patent were not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that these claims are not representative. (D.I. 225).

End of Document

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
|
Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

***9 4. "multimedia"**

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. Court’s construction: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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2017 WL 123456
United States District Court,
D. Delaware.

Sonos, Inc., Plaintiff,

v.

D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA

|

Filed 01/12/2017

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

Go to Markman Construed Terms

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON &
CORROON LLP, Wilmington, DE; Jonathan A. Choa,
Esq., POTTER ANDERSON & CORROON LLP,
Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN
SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan,
Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago,
IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA
& SMITH, LLP, Chicago, IL; J. Dan Smith, Esq.,
LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL;
Michael P. Boyea, Esq., LEE SULLIVAN SHEA &
SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT
& TUNNELL LLP, Wilmington, DE; Michael J. Flynn,
Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP,
Wilmington, DE; John M. Jackson, Esq. (argued),
JACKSON WALKER LLP, Dallas, TX; Matthew C.
Acosta, Esq. (argued), JACKSON WALKER LLP,
Dallas, TX; Blake T. Dietrich, Esq., JACKSON
WALKER LLP, Dallas, TX; David Folsom, Esq.,
JACKSON WALKER LLP, Texarkana, TX., Attorneys
for Defendants

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim
construction of multiple terms in U.S. Patent Nos.
7,571,014 ("the '014 Patent"), 8,588,949 ("the '949
Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the
'312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556
("the '556 Patent"), 9,195,258 ("the '258 Patent"),
9,202,509 ("the '509 Patent"), 9,213,357 ("the '357
Patent"), 9,219,959 ("the '959 Patent"), and D559,197
("the '197 Patent"). The Court has considered the Parties'
Joint Claim Construction Brief. (D.I. 201). The Court
heard oral argument on December 14, 2016. (D.I. 206)
("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player “may also be connected to ... one or more audio reproduction devices.” ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #’258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure I from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word “play” as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr’g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff’s argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a “network audio system.” ('395 patent at 3:12). The same patent also characterizes the zone players as “digital data processing devices.” (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff’s proposed construction.

*8 2. “network interface”

- a. *Plaintiff’s proposed construction*: “A physical component of a device that provides an interconnection with a data network”
- b. *Defendants’ proposed construction*: “A system component operable to receive data and provide it to the system”
- c. *Court’s construction*: “physical component of a device that provides an interconnection with a data network”

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants’ primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a “method comprising: receiving, by a network interface, a data packet over a network.” ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an “apparatus comprising: a network interface.” (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #’258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that “[t]he zone player includes a network interface,” which “facilitates a data flow between a data network ... and the zone player,” which supports Plaintiff’s position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff’s construction.

3. “paired”/“pairing”

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. Court’s construction: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
|
Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure I from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. Court’s construction: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
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Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure I from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. *Court’s construction*: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
|
Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”

c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”

c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. *Court’s construction*: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”

c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
|
Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWII Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317-19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to ... one or more audio reproduction devices." ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr'g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system." ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

*8 2. "network interface"

- a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"
- b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"
- c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network ... and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. *Court’s construction*: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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United States District Court,
D. Delaware.

SONOS, INC., Plaintiff,

v.

D&M HOLDINGS INC. d/b/a the D
+M Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendants.

Civil Action No. 14-1330-RGA

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Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff.

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Nathaniel (Nate) S. Clair II, Esq., JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq., JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendant.

MEMORANDUM OPINION

ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter. (D.I. 116). The issues have

been fully briefed. (D.I. 117, 119, 124). The Court held oral argument on November 14, 2016. (D.I. 206) ("Hr'g Tr."). For the reasons that follow, the Court will deny Defendants' motion.

I. BACKGROUND

Plaintiff filed this patent infringement lawsuit against Defendant on October 14, 2014. (D.I. 1). Plaintiff has asserted a total of twelve patents in this suit. (D.I. 102). Defendants have moved for partial judgment on the pleadings with respect to four of the asserted patents, alleging that the patents are directed to ineligible subject matter. (D.I. 117). The patents at issue in this motion are U.S. Patent Nos. 8,588,949 ("the '949 patent"), 7,571,014 ("the '014 patent"), 9,202,509 ("the '509 patent"), and 9,219,959 ("the '959 patent").

The parties refer to the '949 and '014 patents collectively as the Volume patents. The '949 patent is directed to a multimedia controller and method for adjusting volume levels in a multi-zone system through the use of a user interface. The summary of the invention section of the specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups. According to one aspect of the present invention, a mechanism is provided to allow a user to group some of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner.

('949 patent at 2:28-34). The '014 patent is similarly directed to a method and apparatus for controlling multimedia players in a multi-zone system. The invention is described in the specification as follows:

In general, the present invention pertains to control of audio characteristics of a plurality of multimedia players, or simply players, from a controller. The characteristics include, but are not limited to, an audio source and

an audio volume being played in each of the players. In particular, the present invention enables the user to remotely control the audio characteristics of the players either as a group or as an individual player.

(’014 patent at 2:24-31).

The parties refer to the ’509 and ’959 patents collectively as the Pairing patents. The ’509 patent is directed to methods for grouping and pairing networked audio players. The specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups.... [I]ndividual players may be paired or grouped to stimulate [sic] a multi-channel listening environment. In [sic] instead of grouping selected players to play back an audio item, a user is allowed to activate one of the players to process the data of the audio item, essentially separating the data into individual streams, each of the streams representing a single-sound track and being played back in one of the players, thus creating a multi-channel listening environment with the selected players.

*2 (’509 patent at 2:26-27, 2:59-67). The ’959 patent is similarly directed to devices and methods for grouping, consolidating, and pairing networked audio players. The invention is described in the specification as follows:

In brief summary, the embodiments described herein provide technology for grouping, consolidating, and pairing individual playback devices to create or enhance a multi-channel listening environment. Particularly, the embodiments described herein enable two or more playback devices to be paired, such that multi-channel audio is achieved or enhanced. Such embodiments may be used to produce stereo sound or other audio

environments suitable for audio content encoded with more than two channels, such as for certain kinds of television, movies, and music.

(’959 patent at 2:54-63).

II. LEGAL STANDARD

Section 101 of the Patent Act defines patent-eligible subject matter. It provides: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. The Supreme Court has recognized an implicit exception for three categories of subject matter not eligible for patentability—laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). The purpose of these carve outs is to protect the “basic tools of scientific and technological work.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). “[A] process is not unpatentable simply because it contains a law of nature or a mathematical algorithm,” as “an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Id.* at 1293-94 (internal quotation marks and emphasis omitted). In order “to transform an unpatentable law of nature into a patent-eligible application of such a law, one must do more than simply state the law of nature while adding the words ‘apply it.’ ” *Id.* at 1294 (emphasis omitted).

The Supreme Court recently reaffirmed the framework laid out in *Mayo* “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. First, the court must determine whether the claims are drawn to a patent-ineligible concept. *Id.* If the answer is yes, the court must look to “the elements of the claim both individually and as an ‘ordered combination’ ” to see if there is an “‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’ ” *Id.* (alteration in original). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’ ” *Id.* at 2357

(alterations in original) (quoting *Mayo*, 132 S. Ct. at 1297). “[S]imply appending conventional steps, specified at a high level of generality, to ... abstract ideas cannot make those ... ideas patentable.” *Mayo*, 132 S. Ct. at 1300. Further, “the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment.” *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)). Thus, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Id.* For this second step, the machine-or-transformation test can be a “useful clue,” although it is not determinative. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014), *cert. denied*, 135 S. Ct. 2907 (2015).

*3 Patent eligibility under § 101 is a question of law suitable for resolution on a motion for judgment on the pleadings. *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016). The Federal Circuit follows regional circuit law for motions for judgment on the pleadings. *Id.* Under Third Circuit law, a Rule 12(c) motion for judgment on the pleadings is reviewed under the same standard as a Rule 12(b)(6) motion to dismiss when the Rule 12(c) motion alleges that the plaintiff failed to state a claim upon which relief can be granted. *Revell v. Port Auth.*, 598 F.3d 128, 134 (3d Cir. 2010); *Turbe v. Gov’t of the Virgin Islands*, 938 F.2d 427, 428 (3d Cir. 1991). The court must accept the factual allegations in the complaint and take them in the light most favorable to the non-moving party. *Erickson v. Pardus*, 551 U.S. 89, 94 (2007); *Christopher v. Harbury*, 536 U.S. 403, 406 (2002).

The Federal Circuit has held that the district court is not required to individually address claims not asserted or identified by the non-moving party, so long as the court identifies a representative claim and “all the claims are substantially similar and linked to the same abstract idea.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (internal quotation marks omitted).

III. DISCUSSION

A. The Volume Patents

The ‘949 patent contains three independent claims: claim 1, claim 8, and claim 15. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9).¹ Claim 1 reads:

1. A multimedia controller including a processor, the controller configured to:

provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent playback device configured to playback a multimedia output from multimedia source;

accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source;

for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; and

accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.

(‘949 patent, claim 1).

The ‘014 patent contains four independent claims, three of which have been asserted: claim 1, claim 16, and claim 38. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9). Claim 1 reads:

*4 1. A method for controlling a plurality of players, the method comprising: displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1).

"First, we determine whether the claims at issue are directed to [an abstract idea]." *Alice*, 134 S. Ct. at 2355. "The 'abstract ideas' category embodies 'the longstanding rule that an idea of itself is not patentable.'" *Id.* (internal quotation marks omitted) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). "The Supreme Court has not established a definitive rule to determine what constitutes an 'abstract idea' sufficient to satisfy the first step of the *Mayo/Alice* inquiry." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016). The Supreme Court has recognized, however, that "fundamental economic practice[s]," *Iliski*, 561 U.S. at 611, "method[s] of organizing human activity," *Alice*, 134 S. Ct. at 2356, and mathematical algorithms, *Benson*, 409 U.S. at 64, are abstract ideas. In navigating the parameters of such categories, courts have generally sought to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334. "But in determining whether the claims are directed to an abstract idea, we must be careful to avoid oversimplifying the claims because '[a]t some level, all inventions... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) (alterations in original) (quoting *Alice*, 134 S. Ct. at 2354).

Defendants assert that the "Volume patents are directed to the abstract idea of 'controlling audio settings for multiple audio devices.'" (D.I. 117 at 13). Defendants contend that, like the concept of collecting and storing data in *Content Extraction*, the Volume patents seek to claim a concept that is "very basic" and "fundamental to the entire technological field described in the Asserted Patents." (*Id.* at 14). According to Defendants, the claimed method "can be manually performed by a human." (*Id.*). Defendants also argue that the asserted claims of the '014 patent

encompass prior art devices because the claims are not limited to wirelessly networked audio players. (*Id.* at 15).

Plaintiff counters that Defendants are oversimplifying in characterizing the invention. (D.I. 126 at 12). Plaintiff asserts that the invention embodies "a concrete and tangible concept limited to a specific technological field and it is tethered to specific devices." (*Id.* at 13). Plaintiff further asserts that the invention discloses new functionality and is not simply an automation of steps previously performed by humans. (*Id.*) Finally, Plaintiff objects to Defendants' characterization of the "network" as encompassing prior art hardwired audio systems. (*Id.* at 10). Plaintiff contends, rather, that the claims are limited to audio players on a data network. (*Id.*).

*5 I agree with Plaintiff that Defendants have advanced an oversimplified characterization of the allegedly abstract idea. "Under step one of *Mayo/Alice*, the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents*, 790 F.3d at 1346. As the Federal Circuit has cautioned, "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims." *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *TLI Commc'ns*, 823 F.3d at 611).

As support for their proposed characterization, Defendants cite to several cases they claim are similar to this one. Many of these cases are inapplicable, however, as they are directed to the abstract idea of collecting, organizing, and storing data. See *TLI Commc'ns*, 823 F.3d at 613 ("claims directed to abstract idea of classifying, organizing, and storing digital images"); *Content Extraction*, 776 F.3d at 1347 (claims drawn to abstract idea of collecting, recognizing, and storing data); *Digitex Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (claims drawn to abstract idea of "organizing information through mathematical correlations" where claims "not tied to a specific structure or machine"); *Visual Memory LLC v. NVIDIA Corp.*, 2016 WL 3041847, at *4 (D. Del. May 27, 2016), *appeal docketed*, No. 16-2254 (Fed. Cir. June 28, 2016) (claims drawn to "abstract idea of categorical data storage"). In order to make the argument that these cases are similar to this one, Defendants offer additional alternative characterizations

of the alleged abstract idea, arguing the Volume patents are directed to “organizing and manipulating electronic information” (D.I. 117 at 15) or, alternatively, “organizing and distributing information.” (*Id.* at 16). These alternative characterizations are a far cry from, and oversimplified to a greater degree than, “controlling audio settings for multiple audio devices.” (*Id.* at 13).

I think these claims are far more specific and limited than Defendants argue. For example, claim 1 of the '014 patent could only be considered to encompass collecting and organizing information if I were to restrict my analysis to the first two limitations involving displaying lists of available players. This is inappropriate. Considering the claim in its entirety reveals that there is more to the claim than organizing information. Rather, the third limitation calls for “forming a zone group,” an action that involves controlling actual devices and effecting a fundamental alteration in how the plurality of zone players are networked together. The remaining limitations involve controlling the zone players that have been grouped together, also actions that are not accurately characterized as organizing information. Similarly, claim 1 of the '949 patent claims a controller that provides a user interface allowing for the formation of groups of zone players and control of these players. To characterize this claim as being drawn to “organizing and distributing information” is a gross oversimplification. Defendants' arguments ignore tangible limitations that are tied to specific devices. I am not persuaded.

For similar reasons, I reject Defendants' argument that the concept claimed is fundamental to the entire field. The claims of both Volume patents relate not to the field of audio devices generally, but only to methods and devices for controlling the specific “players” referenced in the claims. I have already construed the term “player” to mean “data network device configured to process and output audio.” (D.I. 219 at 9). Claim 1 of each of the Volume Patents, therefore, requires concrete, tangible components, specifically a “plurality of players,” where the players are the specific devices described in the patents. Only under Defendants' oversimplified characterization of these patents could the claimed concept be considered fundamental to the technological field.

*6 Defendants further argue that these patents are similar to those invalidated in *TLI Commc'ns*. (Hr'g Tr. at 5:21-6:10). In *TLI*, the claims were found to be abstract

at step one because they were “directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two” rather than being directed to “a specific improvement to computer functionality.” *TLI Commc'ns*, 823 F.3d at 612. Importantly, however, the specification of the patent at issue in *TLI* did not “provide any technical details for the tangible components.” *Id.* In contrast, the claims of the Volume patents are not directed to “generic technology.” They are directed to controllers and networked audio players that are described in detail in the specifications. ('014 patent at 6:18-8:49; '949 patent at 7:8-13:10). Furthermore, the specifications of both Volume patents describe the problems presented and solved by these inventions as “dynamically managing the ad hoc creation and deletion of groups” of audio players and “control of the audio players as a group.” ('014 patent at 2:3-6; '949 patent at 2:10-13). Although Defendants attempt to argue that this is a “manufactured problem,” I do not think *TLI* is analogous to this case both because the Volume patents are directed to specific rather than generic technology and present a specific improvement to the existing technology.

Defendants next argue that “each of the recited steps can be manually performed by a human.” (D.I. 117 at 14). However, Defendants do not explain how a human could manually accomplish this feat. Nor could they. Performing the method of claim 1 of the '014 patent requires the following steps: 1) displaying a list of available players on a screen; 2) if one of the players is a zone head, displaying on the screen a second list of players that could be grouped with the zone head; 3) forming a group by selecting some of the players to group with the zone head; 4) synchronizing the players in the group; and 5) using the controller to synchronously adjust the volume of all of the grouped players. Even setting aside the steps involving displaying lists on a screen, it seems clear that in order to form a group in step 3 in a hard wired system contemplated by Defendants, a user would need to re-wire the audio system each time a new group is formed. Forming and changing the composition of player groups in real time simply by making a few selections on the screen of a device is not something a human could do manually in a hard wired system.

Similarly, claim 1 of the '949 patent is a device claim for a controller used to form and control groups of

audio players. Defendants' arguments that a human could perform the actions the device is said to perform is at best illogical. Defendants "provided no evidence that the process previously used [to group audio speakers] is the same as the process required by the claims." *McRO, Inc.*, 837 F.3d at 1314. As in *McRO*, the prior art method of grouping and controlling audio devices (*i.e.* by hardwiring them into the desired configuration) "would not be within the scope of the claims" because it does not involving using a controller with a user interface to view lists of available devices on the data network that are then grouped and controlled synchronously. Furthermore, unlike in *McRO*, the method is not implemented on a general purpose computer. Rather, as discussed above, the method is directed to specific devices that are described and claimed in the patents.

It seems to me that the invention as claimed in each of the Volume patents represents a substantial improvement over the existing technology—the invention described in the patents allows for the audio devices to be grouped and regrouped in real time simply using a user interface to select the desired members of the groups without the need for altering any hard wiring in the physical system. This is not simply a "more efficient" method of doing something already done by humans. It is a method that provides for capabilities far beyond what a traditional hardwired system offers. Plaintiff does not contend that audio speakers are a new technology. What is claimed, however, is not a traditional speaker; rather, the claims are directed to an improvement to the existing technology for grouping and controlling audio speakers. Furthermore, the claims are grounded in a specific device—the player/zone player/playback device that is described in the patent and that I previously construed to mean "data network device configured to process and output audio." (D.I. 219 at 9).

*7 Finally, Defendants argue that the claims of the '014 patent "encompass the admitted prior art of hard-wired traditional multi-zone systems." (D.I. 117 at 15). I am not persuaded that this is true for many of the same reasons I have already explained above. Whether it is true or not, however, is irrelevant in the context of this motion because "section 101 eligibility should not become a substitute for a patentability analysis related to prior art, adequate disclosure, or the other conditions and requirements of Title 35." *Research Corp. Tech., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010).

For the reasons given above, I find that the Volume patents claim patent-eligible subject matter under § 101. Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

B. The Pairing Patents

The '509 patent contains three independent claims: claim 1, claim 11, and claim 23. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9).² Claim 1 reads:

1. A method comprising:

identifying, via a controller, a plurality of playback devices on a local area network (LAN), wherein at least one of the plurality of playback devices is configured to request an audio data stream from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of playback devices to process the requested audio data stream into at least one of a first and a second channel of the requested audio data stream and to reproduce a respective one of the first and the second channel, wherein the plurality of playback devices, when grouped, provide multi-channel sound, such that a first playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the first channel of the requested audio data stream for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested audio data stream for the group; and

displaying, via the controller, an indication that each of the plurality of playback devices is configured to reproduce a respective channel.

('509 patent, claim 1). The '959 patent contains two independent claims. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 14 is representative. (Hr'g Tr. at 61:6-9). Claim 14 reads:

14. A method for outputting audio in a multi-channel listening environment, wherein the method is performed by a playback device, the method comprising:

receiving audio data over a network;

processing the audio data before the playback device outputs audio from a plurality of speaker drivers based on the audio data;

when the playback device is configured for a first type of pairing, performing a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers;

when the playback device is configured for a second type of pairing, performing a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers.

('959 patent, claim 14).

*8 Defendants argue that the claims of the '509 patent are directed to the abstract idea of "grouping and controlling audio players." (D.I. 117 at 19). According to Defendants, the method described in claim 1 forms "the very foundation of any audio system with more than one speaker." (*Id.*). As to the '959 patent, Defendants argue that the claims are directed to the abstract idea of "changing audio settings based on programmed instructions." (*Id.* at 23). Defendants further allege that the claims of this patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (*Id.*). As with the other patents at issue in this motion, Defendants argue that the claimed methods from both of the Pairing patents "can be performed entirely by humans." (*Id.*).

Plaintiff respond that the claims of both of the Pairing patents "are directed to several specific improvements in existing audio system technology." (D.I. 126 at 17, 21). Plaintiff also takes issue with Defendants' contention that the claimed methods can be performed by humans. (*Id.* at 19, 22). Plaintiff further argues, as with the Volume patents, that Defendants have advanced an oversimplified characterization of the claims. (*Id.* at 19).

Defendants make the same arguments here as they did for the Volume patents. I again reject those arguments. As with the Volume patents, I agree with Plaintiff that Defendants' characterization of the purportedly abstract idea is oversimplified. Just as with the Volume patents, the Pairing patents claim methods that involve specific devices (playback devices and controllers) that are described in

detail in the specifications. ('509 patent at 5:63-8:50; '959 patent at 7:8-13:10). Furthermore, as with the Volume patents, the claimed methods do not represent simply an automation of something done manually. Rather, the method of claim 1 the '509 patent requires using a controller to identify the playback devices on a local area network, instruct some of the devices to each output different channels of audio data, and display on the controller's screen which device is outputting which channel. In order to perform this method manually, leaving aside the steps involving using a controller or displaying on the screen of the controller, a person would have to manually rewire the devices each time a new selection is made for which devices are to output which channels. Similarly, the method of claim 14 of the '959 patent is performed by the playback device and involves receiving and then processing audio data, recognizing the type of pairing that has been selected for that playback devices, performing an equalization previously specified for that type of pairing, and then outputting audio. This simply is not the kind of method that could be performed manually and, even if it were, automating the method as claimed represents a substantial improvement to the functionality of a specific device. I also reject Defendants' argument that the claims of the '959 patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (D.I. 117 at 23). It seems clear to me that the two patents claim substantially different methods even if it could also be said they address "the same general idea."

At oral argument, Defendants drew an analogy between this case and the claims at issue in *Personalized Media*. (Hr'g Tr. at 12:16-13:2). *Personalized Media* involved a claim "directed to the abstract idea of using personal information to create a customized presentation." *Personalized Media Comm'ns, LLC v. Amazon.com, Inc.*, 161 F.Supp. 3d 325, 330 (D. Del. 2015), *aff'd*, 2016 WL 7118532 (Fed. Cir. Dec. 7, 2016). The claim in *Personalized Media*, however, is not analogous to the claims of the Pairing patents. These patents, like the Volume patents, are not about organizing, manipulating, or distributing information. Rather, these patents claim improvements to specific devices, not generic technology, and the methods involve controlling the devices to effect tangible changes in their configurations. For these reasons, I find that the Pairing patents claim patent-eligible subject matter under § 101.

*9 Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

For the reasons set forth above, the motion for judgment on the pleadings for lack of patentable subject matter (D.I. 116) will be denied. An appropriate order will be entered.

IV. CONCLUSION

All Citations

Slip Copy, 2017 WL 971700

Footnotes

- 1 At oral argument on November 14, 2016, the parties were directed to submit additional briefing to the extent that they felt claim 1 of each of these patents was not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that claim 1 of each patent is not representative. (D.I. 225).
- 2 At oral argument, the parties were directed to submit additional briefing to the extent that they felt claim 1 of the '509 patent and claim 14 of the '959 patent were not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that these claims are not representative. (D.I. 225).

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
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Filed 01/12/2017

Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317-19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player “may also be connected to ... one or more audio reproduction devices.” ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #’258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word “play” as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr’g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff’s argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a “network audio system.” ('395 patent at 3:12). The same patent also characterizes the zone players as “digital data processing devices.” (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff’s proposed construction.

*8 2. “network interface”

- a. *Plaintiff’s proposed construction*: “A physical component of a device that provides an interconnection with a data network”
- b. *Defendants’ proposed construction*: “A system component operable to receive data and provide it to the system”
- c. *Court’s construction*: “physical component of a device that provides an interconnection with a data network”

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants’ primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a “method comprising: receiving, by a network interface, a data packet over a network.” ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an “apparatus comprising: a network interface.” (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #’258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that “[t]he zone player includes a network interface,” which “facilitates a data flow between a data network ... and the zone player,” which supports Plaintiff’s position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff’s construction.

3. “paired”/“pairing”

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”

c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”

c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. *Court’s construction*: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”

b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”

c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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2017 WL 123456
United States District Court,
D. Delaware.

Go to Markman Construed Terms

Sonos, Inc., Plaintiff,
v.
D&M Holdings, Inc. d/b/a The D+M
Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendant.

Civil Action No. 1:14-cv-01330-RGA
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Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

West Headnotes (3)

[1] Patents

⌘ In general;utility

US Patent 7,571,014, US Patent 8,588,949,
US Patent 8,843,224, US Patent 8,938,312,
US Patent 8,938,637, US Patent 9,042,556,
US Patent 9,195,258, US Patent 9,202,509,
US Patent 9,213,357, US Patent 9,219,959.
Construed.

Cases that cite this headnote

[2] Patents

⌘ Design

US Patent D559,197. Cited.

Cases that cite this headnote

[3] Patents

⌘ In general;utility

US Patent 8,020,023, US Patent 8,234,395,
US Patent 8,370,678, US Patent 8,689,036,
US Patent 8,788,080, US Patent 9,187,777, US
Patent 9,213,356. Cited.

Cases that cite this headnote

MEMORANDUM OPINION

RICHARD G. ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent Nos. 7,571,014 ("the '014 Patent"), 8,588,949 ("the '949 Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the '312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556 ("the '556 Patent"), 9,195,258 ("the '258 Patent"), 9,202,509 ("the '509 Patent"), 9,213,357 ("the '357 Patent"), 9,219,959 ("the '959 Patent"), and D559,197 ("the '197 Patent"). The Court has considered the Parties' Joint Claim Construction Brief. (D.I. 201). The Court heard oral argument on December 14, 2016. (D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging infringement of four patents. (D.I. 1). Plaintiff subsequently amended its complaint (D.I. 6, 31, 102) to assert a total of twelve patents. The parties stipulated to dismissal of one asserted patent with prejudice on August 25, 2016. (D.I. 150). The remaining patents-in-suit claim devices and methods for controlling audio devices. One of the asserted patents, the '197 Patent, is a design patent with a single claim for a control strip. The only claim of the '197 patent was rejected after completion of an *ex parte* re-examination on June 29, 2016. (D.I. 208).

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWII Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.' " *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

*2 When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317-19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osrham GMBH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-In-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

*3 A method for controlling an audio amplifier, the method comprising:

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

(312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame;

an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from a source device and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played.

*4 ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional *playback device*, and a consolidation of the *playback device* with an additional *playback device*.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock*

time information are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

***5** A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the first *playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the *audio information*, and device *clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the device *clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, the *playback device* comprising:

a *network interface* configured to receive *audio data* over a network;

***6** a plurality of speaker drivers configured to output audio based on the *audio data*;

one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the

instructions, when executed by the one or more processors, cause the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. “zone player”/“playback device”/“player”

- a. *Plaintiff's proposed construction*: “A data network device configured to process and output audio”
- b. *Defendants' proposed construction*: “A device configured to output sound waves”
- c. *Court's construction*: “data network device configured to process and output audio”

These three terms appear in asserted claims in nine of the asserted patents, the '014 (“player”), '258 (“zone player”), '357, '312, '637, '959, '949, '509, and '556 (“playback device”) patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216–1 at 199). Plaintiff counters that the '258 patent shares a “formal familial relationship as ‘sibling’ ” to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395

(non-asserted) (“the '395 patent”).¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216–1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a “zone player,” while the other patents, including the '395 patent, claim a “playback device” and a “player.” (D.I. 216–1 at 199). It seems to me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a “playback device,” the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9–15).

*7 The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs “sound waves” as Defendants insist or “audio” as Plaintiff asserts. As an initial matter, I will reject Defendant's construction as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, “The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216.” ('014 patent at 6:20–24). A speaker or speaker transducer is never

mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player “may also be connected to ... one or more audio reproduction devices.” ('395 patent at 3:15–18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated speakers.² (*See* #’258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28–35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants emphasized in their briefing and at oral argument Figure I from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word “play” as requiring the production of sound waves. (D.I. 201 at 16, 22–23; Hr’g Tr. at 26:6–28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff’s argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a “network audio system.” ('395 patent at 3:12). The same patent also characterizes the zone players as “digital data processing devices.” (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (*See, e.g.*, '014 patent at 4:19–20, 6:20–24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30–32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff’s proposed construction.

*8 2. “network interface”

- a. *Plaintiff’s proposed construction*: “A physical component of a device that provides an interconnection with a data network”
- b. *Defendants’ proposed construction*: “A system component operable to receive data and provide it to the system”
- c. *Court’s construction*: “physical component of a device that provides an interconnection with a data network”

This term appears in the '258, '357, '014, '959, '312, and '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959 patent lists the '395 patent as prior art on its face. Defendants’ primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a “method comprising: receiving, by a network interface, a data packet over a network.” ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an “apparatus comprising: a network interface.” (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (*See* #’258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20–21; '959 patent, cl. 1; '312 patent, cl. 1). Furthermore, the specification of the '224 patent provides that “[t]he zone player includes a network interface,” which “facilitates a data flow between a data network ... and the zone player,” which supports Plaintiff’s position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45–51). This construction is supported by the specifications of the other patents at issue. (*See, e.g.*, '312 patent at 3:24–25; '395 patent at 24:36–41). Therefore, I will adopt Plaintiff’s construction.

3. “paired”/“pairing”

- a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"
- b. *Defendants' proposed construction*: "plain and ordinary meaning"
- c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," as commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right, left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19–23, 6:32–34; '556 patent at 6:32, 16:30–32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19–22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64–66, cl. 1; '959 patent at 3:58–61). Therefore, I will adopt Plaintiff's proposed construction.

*9 4. "multimedia"

- a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"
- b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

- c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60–63). Defendants' proposed construction would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50–52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35–36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

- 5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "encoded sound and not the sound itself"

c. *Court's construction*: “no construction necessary”

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30–31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that “the speaker transducer is to receive and output the audio data stream.” Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires “playback of the audio information” by the playback device. I have already determined in construing the term “playback device” that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated speaker. Therefore, I read this claim to indicate that “audio information” may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

*10 6. “independently clocked”

- a. *Plaintiff's proposed construction*: “The phrases ‘wherein the first and second zone players remain independently clocked while playing back audio in synchrony’ and ‘wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony’ mean that ‘each zone player operates in accordance with its own respective clock during synchronous playback.’”
- b. *Defendants' proposed construction*: “Operating autonomously to any external clock”
- c. *Court's construction*: “operating in accordance with their own respective clocks during synchronous playback”

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification with the exception of the Incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider “critical to the construction of the term.” (D.I. 201 at 63). Defendants insist that the clock in the phrase “independently clocked” necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that “independently clocked” refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8–9, 24:24–26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback with the first player. (*Id.* at 24:27–31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22–35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand “independently clocked” to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of “independent” to require “autonomous” operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony

group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with the notion of “operating autonomously to any external clock.” Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff’s construction.

***11 7. “clock information”/“clock time information”**

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A time reference identifying a specific point in time at a minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

“indication of when to play one or more samples in a frame”/“indication of when to play the frame”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Indication of a frame-specific minimum resolution of time”
- c. *Court’s construction*: decline to construe at this time.

As an initial matter, I will reject Defendants’ constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as “minimum resolution,” that do not appear in any of the patents. It seems to me that Defendants’ proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and “plain and ordinary” meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. “playback timing information”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “A clock time associated with a frame of audio data”

c. Court’s construction: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the “playback timing information” is associated with a “frame” of data appears in dependent claim 10 in the ‘258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips* 415 F.3d at 1315. Therefore, I will reject Defendants’ proposed construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. “line in connector”

- a. *Plaintiff’s proposed construction*: “plain and ordinary meaning/no construction necessary”
- b. *Defendants’ proposed construction*: “Analog TRS-type connector/socket”
- c. *Court’s construction*: “plain and ordinary meaning”

This term appears in the ‘312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74–76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, “Other types of connectors may also be used depending on the application.” (‘312 patent at 22:67–23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

***12 11. “equalization”**

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

***13 12** The scope of the design claimed in the '197 Patent

- a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."
- b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"
- c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

All Citations

Slip Copy, 2017 WL 123456, 2017 Markman 123456

Footnotes

- 1 The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '656, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.
- 2 The '949 and '509 patents do not include device claims.

End of Document

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United States District Court,
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SONOS, INC., Plaintiff,

v.

D&M HOLDINGS INC. d/b/a the D
+M Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendants.

Civil Action No. 14-1330-RGA

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Attorneys and Law Firms

Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyca, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff.

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Nathaniel (Nate) S. Clair II, Esq., JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq., JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendant.

MEMORANDUM OPINION

ANDREWS, U.S. DISTRICT JUDGE

*1 Presently before the Court is Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter. (D.I. 116). The issues have

been fully briefed. (D.I. 117, 119, 124). The Court held oral argument on November 14, 2016. (D.I. 206) ("Hr'g Tr."). For the reasons that follow, the Court will deny Defendants' motion.

I. BACKGROUND

Plaintiff filed this patent infringement lawsuit against Defendant on October 14, 2014. (D.I. 1). Plaintiff has asserted a total of twelve patents in this suit. (D.I. 102). Defendants have moved for partial judgment on the pleadings with respect to four of the asserted patents, alleging that the patents are directed to ineligible subject matter. (D.I. 117). The patents at issue in this motion are U.S. Patent Nos. 8,588,949 ("the '949 patent"), 7,571,014 ("the '014 patent"), 9,202,509 ("the '509 patent"), and 9,219,959 ("the '959 patent").

The parties refer to the '949 and '014 patents collectively as the Volume patents. The '949 patent is directed to a multimedia controller and method for adjusting volume levels in a multi-zone system through the use of a user interface. The summary of the invention section of the specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups. According to one aspect of the present invention, a mechanism is provided to allow a user to group some of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner.

('949 patent at 2:28-34). The '014 patent is similarly directed to a method and apparatus for controlling multimedia players in a multi-zone system. The invention is described in the specification as follows:

In general, the present invention pertains to control of audio characteristics of a plurality of multimedia players, or simply players, from a controller. The characteristics include, but are not limited to, an audio source and

an audio volume being played in each of the players. In particular, the present invention enables the user to remotely control the audio characteristics of the players either as a group or as an individual player.

(’014 patent at 2:24-31).

The parties refer to the ’509 and ’959 patents collectively as the Pairing patents. The ’509 patent is directed to methods for grouping and pairing networked audio players. The specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups.... [I]ndividual players may be paired or grouped to stimulate [sic] a multi-channel listening environment. In [sic] instead of grouping selected players to play back an audio item, a user is allowed to activate one of the players to process the data of the audio item, essentially separating the data into individual streams, each of the streams representing a single-sound track and being played back in one of the players, thus creating a multi-channel listening environment with the selected players.

*2 (’509 patent at 2:26-27, 2:59-67). The ’959 patent is similarly directed to devices and methods for grouping, consolidating, and pairing networked audio players. The invention is described in the specification as follows:

In brief summary, the embodiments described herein provide technology for grouping, consolidating, and pairing individual playback devices to create or enhance a multi-channel listening environment. Particularly, the embodiments described herein enable two or more playback devices to be paired, such that multi-channel audio is achieved or enhanced. Such embodiments may be used to produce stereo sound or other audio

environments suitable for audio content encoded with more than two channels, such as for certain kinds of television, movies, and music.

(’959 patent at 2:54-63).

II. LEGAL STANDARD

Section 101 of the Patent Act defines patent-eligible subject matter. It provides: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. The Supreme Court has recognized an implicit exception for three categories of subject matter not eligible for patentability—laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). The purpose of these carve outs is to protect the “basic tools of scientific and technological work.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012). “[A] process is not unpatentable simply because it contains a law of nature or a mathematical algorithm,” as “an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Id.* at 1293-94 (internal quotation marks and emphasis omitted). In order “to transform an unpatentable law of nature into a patent-eligible application of such a law, one must do more than simply state the law of nature while adding the words ‘apply it.’ ” *Id.* at 1294 (emphasis omitted).

The Supreme Court recently reaffirmed the framework laid out in *Mayo* “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice*, 134 S. Ct. at 2355. First, the court must determine whether the claims are drawn to a patent-ineligible concept. *Id.* If the answer is yes, the court must look to “the elements of the claim both individually and as an ‘ordered combination’ ” to see if there is an “‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’ ” *Id.* (alteration in original). “A claim that recites an abstract idea must include ‘additional features’ to ensure ‘that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].’ ” *Id.* at 2357

(alterations in original) (quoting *Mayo*, 132 S. Ct. at 1297). “[S]imply appending conventional steps, specified at a high level of generality, to ... abstract ideas cannot make those ... ideas patentable.” *Mayo*, 132 S. Ct. at 1300. Further, “the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment.” *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11 (2010)). Thus, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Id.* For this second step, the machine-or-transformation test can be a “useful clue,” although it is not determinative. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014), *cert. denied*, 135 S. Ct. 2907 (2015).

*3 Patent eligibility under § 101 is a question of law suitable for resolution on a motion for judgment on the pleadings. *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016). The Federal Circuit follows regional circuit law for motions for judgment on the pleadings. *Id.* Under Third Circuit law, a Rule 12(c) motion for judgment on the pleadings is reviewed under the same standard as a Rule 12(b)(6) motion to dismiss when the Rule 12(c) motion alleges that the plaintiff failed to state a claim upon which relief can be granted. *Revell v. Port Auth.*, 598 F.3d 128, 134 (3d Cir. 2010); *Turbe v. Gov’t of the Virgin Islands*, 938 F.2d 427, 428 (3d Cir. 1991). The court must accept the factual allegations in the complaint and take them in the light most favorable to the non-moving party. *Erickson v. Pardus*, 551 U.S. 89, 94 (2007); *Christopher v. Harbury*, 536 U.S. 403, 406 (2002).

The Federal Circuit has held that the district court is not required to individually address claims not asserted or identified by the non-moving party, so long as the court identifies a representative claim and “all the claims are substantially similar and linked to the same abstract idea.” *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (internal quotation marks omitted).

III. DISCUSSION

A. The Volume Patents

The ‘949 patent contains three independent claims: claim 1, claim 8, and claim 15. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9).¹ Claim 1 reads:

1. A multimedia controller including a processor, the controller configured to:

provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent playback device configured to playback a multimedia output from multimedia source;

accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source;

for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; and

accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.

(‘949 patent, claim 1).

The ‘014 patent contains four independent claims, three of which have been asserted: claim 1, claim 16, and claim 38. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr’g Tr. at 61:6-9). Claim 1 reads:

*4 1. A method for controlling a plurality of players, the method comprising: displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1).

"First, we determine whether the claims at issue are directed to [an abstract idea]." *Alice*, 134 S. Ct. at 2355. "The 'abstract ideas' category embodies 'the longstanding rule that an idea of itself is not patentable.'" *Id.* (internal quotation marks omitted) (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). "The Supreme Court has not established a definitive rule to determine what constitutes an 'abstract idea' sufficient to satisfy the first step of the *Mayo/Alice* inquiry." *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016). The Supreme Court has recognized, however, that "fundamental economic practice[s]," *Iliski*, 561 U.S. at 611, "method[s] of organizing human activity," *Alice*, 134 S. Ct. at 2356, and mathematical algorithms, *Benson*, 409 U.S. at 64, are abstract ideas. In navigating the parameters of such categories, courts have generally sought to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334. "But in determining whether the claims are directed to an abstract idea, we must be careful to avoid oversimplifying the claims because '[a]t some level, all inventions... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016) (alterations in original) (quoting *Alice*, 134 S. Ct. at 2354).

Defendants assert that the "Volume patents are directed to the abstract idea of 'controlling audio settings for multiple audio devices.'" (D.I. 117 at 13). Defendants contend that, like the concept of collecting and storing data in *Content Extraction*, the Volume patents seek to claim a concept that is "very basic" and "fundamental to the entire technological field described in the Asserted Patents." (*Id.* at 14). According to Defendants, the claimed method "can be manually performed by a human." (*Id.*). Defendants also argue that the asserted claims of the '014 patent

encompass prior art devices because the claims are not limited to wirelessly networked audio players. (*Id.* at 15).

Plaintiff counters that Defendants are oversimplifying in characterizing the invention. (D.I. 126 at 12). Plaintiff asserts that the invention embodies "a concrete and tangible concept limited to a specific technological field and it is tethered to specific devices." (*Id.* at 13). Plaintiff further asserts that the invention discloses new functionality and is not simply an automation of steps previously performed by humans. (*Id.*) Finally, Plaintiff objects to Defendants' characterization of the "network" as encompassing prior art hardwired audio systems. (*Id.* at 10). Plaintiff contends, rather, that the claims are limited to audio players on a data network. (*Id.*).

*5 I agree with Plaintiff that Defendants have advanced an oversimplified characterization of the allegedly abstract idea. "Under step one of *Mayo/Alice*, the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." *Internet Patents*, 790 F.3d at 1346. As the Federal Circuit has cautioned, "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims." *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *TLI Commc'ns*, 823 F.3d at 611).

As support for their proposed characterization, Defendants cite to several cases they claim are similar to this one. Many of these cases are inapplicable, however, as they are directed to the abstract idea of collecting, organizing, and storing data. See *TLI Commc'ns*, 823 F.3d at 613 ("claims directed to abstract idea of classifying, organizing, and storing digital images"); *Content Extraction*, 776 F.3d at 1347 (claims drawn to abstract idea of collecting, recognizing, and storing data); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (claims drawn to abstract idea of "organizing information through mathematical correlations" where claims "not tied to a specific structure or machine"); *Visual Memory LLC v. NVIDIA Corp.*, 2016 WL 3041847, at *4 (D. Del. May 27, 2016), *appeal docketed*, No. 16-2254 (Fed. Cir. June 28, 2016) (claims drawn to "abstract idea of categorical data storage"). In order to make the argument that these cases are similar to this one, Defendants offer additional alternative characterizations

of the alleged abstract idea, arguing the Volume patents are directed to “organizing and manipulating electronic information” (D.I. 117 at 15) or, alternatively, “organizing and distributing information.” (*Id.* at 16). These alternative characterizations are a far cry from, and oversimplified to a greater degree than, “controlling audio settings for multiple audio devices.” (*Id.* at 13).

I think these claims are far more specific and limited than Defendants argue. For example, claim 1 of the '014 patent could only be considered to encompass collecting and organizing information if I were to restrict my analysis to the first two limitations involving displaying lists of available players. This is inappropriate. Considering the claim in its entirety reveals that there is more to the claim than organizing information. Rather, the third limitation calls for “forming a zone group,” an action that involves controlling actual devices and effecting a fundamental alteration in how the plurality of zone players are networked together. The remaining limitations involve controlling the zone players that have been grouped together, also actions that are not accurately characterized as organizing information. Similarly, claim 1 of the '949 patent claims a controller that provides a user interface allowing for the formation of groups of zone players and control of these players. To characterize this claim as being drawn to “organizing and distributing information” is a gross oversimplification. Defendants' arguments ignore tangible limitations that are tied to specific devices. I am not persuaded.

For similar reasons, I reject Defendants' argument that the concept claimed is fundamental to the entire field. The claims of both Volume patents relate not to the field of audio devices generally, but only to methods and devices for controlling the specific “players” referenced in the claims. I have already construed the term “player” to mean “data network device configured to process and output audio.” (D.I. 219 at 9). Claim 1 of each of the Volume Patents, therefore, requires concrete, tangible components, specifically a “plurality of players,” where the players are the specific devices described in the patents. Only under Defendants' oversimplified characterization of these patents could the claimed concept be considered fundamental to the technological field.

*6 Defendants further argue that these patents are similar to those invalidated in *TLI Commc'ns*. (Hr'g Tr. at 5:21-6:10). In *TLI*, the claims were found to be abstract

at step one because they were “directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two” rather than being directed to “a specific improvement to computer functionality.” *TLI Commc'ns*, 823 F.3d at 612. Importantly, however, the specification of the patent at issue in *TLI* did not “provide any technical details for the tangible components.” *Id.* In contrast, the claims of the Volume patents are not directed to “generic technology.” They are directed to controllers and networked audio players that are described in detail in the specifications. ('014 patent at 6:18-8:49; '949 patent at 7:8-13:10). Furthermore, the specifications of both Volume patents describe the problems presented and solved by these inventions as “dynamically managing the ad hoc creation and deletion of groups” of audio players and “control of the audio players as a group.” ('014 patent at 2:3-6; '949 patent at 2:10-13). Although Defendants attempt to argue that this is a “manufactured problem,” I do not think *TLI* is analogous to this case both because the Volume patents are directed to specific rather than generic technology and present a specific improvement to the existing technology.

Defendants next argue that “each of the recited steps can be manually performed by a human.” (D.I. 117 at 14). However, Defendants do not explain how a human could manually accomplish this feat. Nor could they. Performing the method of claim 1 of the '014 patent requires the following steps: 1) displaying a list of available players on a screen; 2) if one of the players is a zone head, displaying on the screen a second list of players that could be grouped with the zone head; 3) forming a group by selecting some of the players to group with the zone head; 4) synchronizing the players in the group; and 5) using the controller to synchronously adjust the volume of all of the grouped players. Even setting aside the steps involving displaying lists on a screen, it seems clear that in order to form a group in step 3 in a hard wired system contemplated by Defendants, a user would need to re-wire the audio system each time a new group is formed. Forming and changing the composition of player groups in real time simply by making a few selections on the screen of a device is not something a human could do manually in a hard wired system.

Similarly, claim 1 of the '949 patent is a device claim for a controller used to form and control groups of

audio players. Defendants' arguments that a human could perform the actions the device is said to perform is at best illogical. Defendants "provided no evidence that the process previously used [to group audio speakers] is the same as the process required by the claims." *McRO, Inc.*, 837 F.3d at 1314. As in *McRO*, the prior art method of grouping and controlling audio devices (*i.e.* by hardwiring them into the desired configuration) "would not be within the scope of the claims" because it does not involving using a controller with a user interface to view lists of available devices on the data network that are then grouped and controlled synchronously. Furthermore, unlike in *McRO*, the method is not implemented on a general purpose computer. Rather, as discussed above, the method is directed to specific devices that are described and claimed in the patents.

It seems to me that the invention as claimed in each of the Volume patents represents a substantial improvement over the existing technology—the invention described in the patents allows for the audio devices to be grouped and regrouped in real time simply using a user interface to select the desired members of the groups without the need for altering any hard wiring in the physical system. This is not simply a "more efficient" method of doing something already done by humans. It is a method that provides for capabilities far beyond what a traditional hardwired system offers. Plaintiff does not contend that audio speakers are a new technology. What is claimed, however, is not a traditional speaker; rather, the claims are directed to an improvement to the existing technology for grouping and controlling audio speakers. Furthermore, the claims are grounded in a specific device—the player/zone player/playback device that is described in the patent and that I previously construed to mean "data network device configured to process and output audio." (D.I. 219 at 9).

*7 Finally, Defendants argue that the claims of the '014 patent "encompass the admitted prior art of hard-wired traditional multi-zone systems." (D.I. 117 at 15). I am not persuaded that this is true for many of the same reasons I have already explained above. Whether it is true or not, however, is irrelevant in the context of this motion because "section 101 eligibility should not become a substitute for a patentability analysis related to prior art, adequate disclosure, or the other conditions and requirements of Title 35." *Research Corp. Tech., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010).

For the reasons given above, I find that the Volume patents claim patent-eligible subject matter under § 101. Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

B. The Pairing Patents

The '509 patent contains three independent claims: claim 1, claim 11, and claim 23. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9).² Claim 1 reads:

1. A method comprising:

identifying, via a controller, a plurality of playback devices on a local area network (LAN), wherein at least one of the plurality of playback devices is configured to request an audio data stream from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of playback devices to process the requested audio data stream into at least one of a first and a second channel of the requested audio data stream and to reproduce a respective one of the first and the second channel, wherein the plurality of playback devices, when grouped, provide multi-channel sound, such that a first playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the first channel of the requested audio data stream for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested audio data stream for the group; and

displaying, via the controller, an indication that each of the plurality of playback devices is configured to reproduce a respective channel.

('509 patent, claim 1). The '959 patent contains two independent claims. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 14 is representative. (Hr'g Tr. at 61:6-9). Claim 14 reads:

14. A method for outputting audio in a multi-channel listening environment, wherein the method is performed by a playback device, the method comprising:

receiving audio data over a network;

processing the audio data before the playback device outputs audio from a plurality of speaker drivers based on the audio data;

when the playback device is configured for a first type of pairing, performing a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers;

when the playback device is configured for a second type of pairing, performing a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers.

('959 patent, claim 14).

*8 Defendants argue that the claims of the '509 patent are directed to the abstract idea of "grouping and controlling audio players." (D.I. 117 at 19). According to Defendants, the method described in claim 1 forms "the very foundation of any audio system with more than one speaker." (*Id.*). As to the '959 patent, Defendants argue that the claims are directed to the abstract idea of "changing audio settings based on programmed instructions." (*Id.* at 23). Defendants further allege that the claims of this patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (*Id.*). As with the other patents at issue in this motion, Defendants argue that the claimed methods from both of the Pairing patents "can be performed entirely by humans." (*Id.*).

Plaintiff respond that the claims of both of the Pairing patents "are directed to several specific improvements in existing audio system technology." (D.I. 126 at 17, 21). Plaintiff also takes issue with Defendants' contention that the claimed methods can be performed by humans. (*Id.* at 19, 22). Plaintiff further argues, as with the Volume patents, that Defendants have advanced an oversimplified characterization of the claims. (*Id.* at 19).

Defendants make the same arguments here as they did for the Volume patents. I again reject those arguments. As with the Volume patents, I agree with Plaintiff that Defendants' characterization of the purportedly abstract idea is oversimplified. Just as with the Volume patents, the Pairing patents claim methods that involve specific devices (playback devices and controllers) that are described in

detail in the specifications. ('509 patent at 5:63-8:50; '959 patent at 7:8-13:10). Furthermore, as with the Volume patents, the claimed methods do not represent simply an automation of something done manually. Rather, the method of claim 1 the '509 patent requires using a controller to identify the playback devices on a local area network, instruct some of the devices to each output different channels of audio data, and display on the controller's screen which device is outputting which channel. In order to perform this method manually, leaving aside the steps involving using a controller or displaying on the screen of the controller, a person would have to manually rewire the devices each time a new selection is made for which devices are to output which channels. Similarly, the method of claim 14 of the '959 patent is performed by the playback device and involves receiving and then processing audio data, recognizing the type of pairing that has been selected for that playback devices, performing an equalization previously specified for that type of pairing, and then outputting audio. This simply is not the kind of method that could be performed manually and, even if it were, automating the method as claimed represents a substantial improvement to the functionality of a specific device. I also reject Defendants' argument that the claims of the '959 patent "are so broad and abstract as to encompass the same general idea and practice identified in the '509 patent." (D.I. 117 at 23). It seems clear to me that the two patents claim substantially different methods even if it could also be said they address "the same general idea."

At oral argument, Defendants drew an analogy between this case and the claims at issue in *Personalized Media*. (Hr'g Tr. at 12:16-13:2). *Personalized Media* involved a claim "directed to the abstract idea of using personal information to create a customized presentation." *Personalized Media Comm'ns, LLC v. Amazon.com, Inc.*, 161 F.Supp. 3d 325, 330 (D. Del. 2015), *aff'd*, 2016 WL 7118532 (Fed. Cir. Dec. 7, 2016). The claim in *Personalized Media*, however, is not analogous to the claims of the Pairing patents. These patents, like the Volume patents, are not about organizing, manipulating, or distributing information. Rather, these patents claim improvements to specific devices, not generic technology, and the methods involve controlling the devices to effect tangible changes in their configurations. For these reasons, I find that the Pairing patents claim patent-eligible subject matter under § 101.

*9 Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

For the reasons set forth above, the motion for judgment on the pleadings for lack of patentable subject matter (D.I. 116) will be denied. An appropriate order will be entered.

IV. CONCLUSION

All Citations

Slip Copy, 2017 WL 971700

Footnotes

- 1 At oral argument on November 14, 2016, the parties were directed to submit additional briefing to the extent that they felt claim 1 of each of these patents was not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that claim 1 of each patent is not representative. (D.I. 225).
- 2 At oral argument, the parties were directed to submit additional briefing to the extent that they felt claim 1 of the '509 patent and claim 14 of the '959 patent were not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that these claims are not representative. (D.I. 225).

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2015 WL 5277194

Only the Westlaw citation is currently available.

United States District Court,
D. Delaware.

Sonos, Inc., Plaintiff;

v.

D & M Holdings Inc. d/b/a the D + M
Group., D & M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendants.

Civil Action No. 14-1330-RGA

|

Signed September 9, 2015

Attorneys and Law Firms

Philip A. Rovner, Esq. (argued), Jonathan A. Choa, Esq., Potter Anderson & Corroon LLP, Wilmington, DE; George I. Lee, Esq., Sean M. Sullivan, Esq., Rory P. Shea, Esq., J. Dan Smith, Esq., Lee Sullivan Shea & Smith LLP, Chicago, IL, Attorneys for Plaintiff.

Jack B. Blumenfeld, Esq., Michael J. Flynn, Esq., Morris, Nichols, Arsht & Tunnell LLP, Wilmington, DE; John M. Jackson, Esq., Nathaniel (Nate) St. Clair II, Esq., Kurt A. Schwarz, Esq. (argued), Matthew C. Acosta, Esq., Jackson Walker L.L.P., Dallas, TX; David Folsom, Esq., Jackson Walker L.L.P., Texarkana, TX, Attorneys for Defendants.

MEMORANDUM OPINION

ANDREWS, U.S. District Judge

*1 Before the Court is Defendants' motion to disqualify the law firm of Lee, Sullivan, Shea & Smith ("Lee Sullivan"). (D.I.19). The matter has been fully briefed. (D.I.20, 28, 45). The Court held oral argument on June 19, 2015. (D.I.50). For the reasons set forth below, Defendants' motion is denied.

I. BACKGROUND

Plaintiff filed the present action for patent infringement against Defendants on October 21, 2014, alleging infringement of multiple patents relating to wireless audio technology. (D.I.1). Plaintiff accuses Defendants' home

entertainment operating system (HEOS) of infringement. (*Id.*). At the time of the complaint, Plaintiff was represented by the law firm McDonnell, Boehnen, Hulbert & Berghoff LLP ("McDonnell Boehnen"). McDonnell Boehnen has since withdrawn as Plaintiff's counsel. (D.I.5). Plaintiff is now represented by Lee Sullivan. (D.I.15).

McDonnell Boehnen began representing Defendants in patent related matters in 2002. (D.I. 33 6). Mr. George Lee began working on patent litigation matters for Defendants in 2002 but stopped in March 2009. (*Id.* ¶ 8). Mr. Sean Sullivan worked on patent matters for Defendants between 2003 and mid-2007. (D.I. 36 ¶ 8). Mr. Rory Shea only worked on two assignments for Defendants, one as a summer associate in 2005 and another as an associate in September 2006. (D.I. 34 ¶ 8). Mr. Dan Smith never performed any work for Defendants. (D.I. 35 ¶ 8).

In early 2012, Mr. Lee began representing Plaintiff while he was still working at McDonnell Boehnen. (D.I. 33 ¶ 20). Defendants acquired the technology behind the accused HEOS product in the latter part of 2012. (D.I. 38-1 at 16 [Exh. C]). In June 2014, Defendants launched the accused product. (D.I.21 ¶ 11). Defendants issued a press release to this effect on June 2, 2014. (D.I. 38-1 at 2 [Exh. A]). On June 5, 2014, McDonnell Boehnen ended its attorney-client relationship with Defendants. (D.I. 23 ¶ 4; D.I. 33 ¶ 25). There is no allegation that any of the Lee Sullivan lawyers learned anything about HEOS from Defendants while at McDonnell Boehnen. (*See generally* D.I. 21).

Plaintiff asked McDonnell Boehnen to analyze Defendants' HEOS products for possible infringement in September 2014. (D.I. 33 ¶ 29). McDonnell Boehnen filed the complaint in the present case on behalf of Plaintiff in October 2014 (with Mr. Sullivan and Mr. Shea on the complaint (D.I. 1 at 20)). McDonnell Boehnen withdrew as Plaintiff's counsel on November 19, 2014. (D.I.5). In December 2014, Mr. Lee, Mr. Sullivan, Mr. Shea, and Mr. Smith left McDonnell Boehnen. (D.I. 33, 34, 35 & 36). They formed Lee Sullivan on January 1, 2015. (D.I. 33 ¶ 4). Lee Sullivan entered an appearance in the present case on behalf of Plaintiff on January 26, 2015. (D.I.15).

II. LEGAL STANDARD

This Court has summarized the relevant legal principles for determining a motion to disqualify:

The Court has the inherent authority to supervise the professional conduct of attorneys appearing before it, including the power to disqualify an attorney from a representation. See *United States v. Miller*, 624 F.2d 1198, 1201 (3d Cir.1980). Motions to disqualify are “generally disfavored” and, therefore, require the moving party to show clearly that “continued representation would be impermissible.” *Talecris Biotherapeutics, Inc. v. Baxter Int'l Inc.*, 491 F.Supp.2d 510, 513 (D.Del.2007) (internal quotation marks and citations omitted); see also *Conley v. Chaffinch*, 431 F. Supp.2d 494, 496 (D.Del.2006) (same). Because “[t]he maintenance of public confidence in the propriety of the conduct of those associated with the administration of justice is so important,” however, a court may disqualify an attorney “for failing to avoid even the appearance of impropriety.” *Kabi Pharmacia AB v. Alcon Surgical, Inc.*, 803 F.Supp. 957, 960 (D.Del.1992).

*2 Attorney conduct is governed by the ethical standards of the court before which the attorney appears. See *In re Com Derivatives Antitrust Litig.*, 748 F.2d 157, 160 (3d Cir.1984). The District of Delaware has adopted the Model Rules of Professional Conduct (“M.R.P.C.”). See D. Del. LR 83.6(d)(2). M.R.P.C. Rule 1.9(a) provides:

A lawyer who has formerly represented a client in a matter shall not thereafter represent another person in the same or a substantially related matter in which that person's interests are materially adverse to the interests of the former client unless the former client gives informed consent, confirmed in writing.

To establish that a representation violates Rule 1.9, four elements must be shown: “(1) the lawyer must have had an attorney-client relationship with the former client; (2) the present client's matter must either be the same as the matter the lawyer worked on for the first client, or a ‘substantially related’ matter; (3) the interests of the second client must be materially adverse to the interests of the former client; and (4) the former client must not have consented to the representation after consultation.” *Apeldyn Corp. v. Samsung Elecs. Co., Ltd.*, 660 F.Supp.2d 557, 561 (D.Del.2009).

To determine whether a current matter is “substantially related” to a matter involved in a former representation, and, thus, whether disqualification under Rule 1.9 is appropriate, the Court must answer the following three

questions: “(1) What is the nature and scope of the prior representation at issue? (2) What is the nature of the present lawsuit against the former client? (3) In the course of the prior representation, might the client have disclosed to his attorney confidences which could be relevant to the present action? In particular, could any such confidences be detrimental to the former client in the current litigation?” *Satellite Fin. Planning Corp. v. First Nat'l Bank of Wilmington*, 652 F.Supp. 1281, 1283 (D.Del.1987) (internal quotation marks and citations omitted); see also *Talecris*, 491 F.Supp.2d at 514.

As the Third Circuit has explained, M.R.P.C. 1.9 exists for the purpose of preventing “even the potential that a former client's confidences and secrets may be used against him,” to maintain “public confidence in the integrity of the bar,” and to fulfill a client's rightful expectation of “the loyalty of his attorney in the matter for which he is retained.” *Corn Derivatives*, 748 F.2d at 162. Therefore, in attempting to determine whether a “substantial relationship” exists, “disqualification is proper when the similarity in the two representations is enough to raise a common-sense inference that what the lawyer learned from his former client will prove useful in his representation of another client whose interests are adverse to those of the former client.” *Cardona v. General Motors Corp.*, 942 F.Supp. 968, 973 (D.N.J.1996) (internal quotation marks and citations omitted). While the party seeking disqualification bears the burden of establishing the existence of a substantial relationship, any doubts about whether disqualification is appropriate should be resolved in favor of the moving party, in order to ensure protection of client confidences. See *INA Underwriters v. Nalibotsky*, 594 F.Supp. 1199, 1207 (E.D.Pa.1984); see also *Buschmeier v. G & G Invs., Inc.*, 2007 WL4150408, at *7 (E.D.Pa. Nov. 19, 2007).

*3 To the extent that a motion to disqualify involves imputing an individual lawyer's representation to an entire firm, M.R.P.C. 1.10(a) is also relevant. Rule 1.10(a)(1) provides:

While lawyers are associated in a firm, none of them shall knowingly represent a client when any one of them practicing alone would be prohibited from doing so by Rules 1.7 or 1.9, unless the prohibition is based on a personal interest of the prohibited lawyer and does not present a significant risk of

materially limiting the representation of the client by the remaining lawyers in the firm.

Rule 1.10(a)(2) applies in circumstances in which a firm is conflicted due to a prior representation undertaken by an attorney while the attorney was at a different law firm. Rule 1.10 “imputes one attorney’s conflicts to all other attorneys in his firm.” *United States v. McDade*, 404 Fed.Appx. 681, 683 (3d Cir. Dec. 22, 2010); *see also Exterior Sys. v. Noble Composites, Inc.*, 210 F.Supp.2d 1062, 1068 (N.D.Ind.2002) (“Rule 1.10 addresses situations where a conflict of interest may be imputed to other lawyers associated in the same firm with the tainted lawyer.”).

Resolving the question of whether to disqualify counsel requires the Court to “carefully sift all the facts and circumstances.” *Nemours Found. v. Gilbane, Aetna, Fed. Ins. Co.*, 632 F.Supp. 418, 428 (D.Del.1986) (internal citations and quotation marks omitted). Indeed, “whether disqualification is appropriate depends on the facts of the case and is never automatic.” *Boston Scientific Corp. v. Johnson & Johnson, Inc.*, 647 F.Supp.2d 369, 374 n.7 (D.Del.2009). The required inquiry necessarily involves “a painstaking analysis of the facts.” *Satellite Fin. Planning*, 652 F.Supp. at 1283 (internal quotation marks omitted); *see also Carlyle Towers Condo. Ass’n v. Crossland Sav., FSB*, 944 F.Supp. 341, 345 (D.N.J.1996) (“Disqualification questions are intensely fact-specific, and it is essential to approach such problems with a keen sense of practicality as well as a precise picture of the underlying facts.”). Furthermore, the Court approaches motions to disqualify counsel with “cautious scrutiny,” mindful of a litigant’s right to the counsel of its choice. *Laker Airways, Ltd. v. Pan American World Airways*, 103 F.R.D. 22, 27–28 (D.D.C.1984).

Intellectual Ventures I LLC v. Checkpoint Software Techs. Ltd., 2011 WL 2692968, *4–6 (D. Del. June 22, 2011).

III. DISCUSSION

Defendants argue that Lee Sullivan should be disqualified under Rule 1.7, which pertains to concurrent conflicts of interest. (D.I.20 at 12). Rule 1.7 states:

(a) Except as provided in paragraph (b), a lawyer shall not represent a client if the representation involves a

concurrent conflict of interest. A concurrent conflict of interest exists if:

- (1) the representation of one client will be directly adverse to another client; or
- (2) there is a significant risk that the representation of one or more clients will be materially limited by the lawyer’s responsibilities to another client, a former client or a third person or by a personal interest of the lawyer.

None of the Lee Sullivan lawyers has had an actual concurrent conflict of interest in the present case. Mr. Lee, who was the last of the Lee Sullivan lawyers to do any work for Defendants, stopped working on matters for Defendants in March 2009 and began representing Plaintiff in early 2012. (D.I.33). Defendants, however, were still clients of McDonnell Boehnen in 2012. I declined to take any *ex parte* submissions from Defendants (*see* D.I. 50 at 53), and thus it is possible that some of the patent applications that McDonnell Boehnen lawyers were pursuing on behalf of Plaintiff were “directly adverse” to the Defendants’ interests. There is no evidence, however, that any of the Lee Sullivan lawyers, as prohibited by Rule 1.10(a)(1), “knowingly” represented Plaintiff at a time when they had any reason to believe (let alone knowledge) that there was a conflict with another client’s interests. Plaintiff operates in the field of wireless audio technology, and Defendants did not publicly enter this field until they released their HEOS product in June 2014. Thus, when Mr. Lee began representing Plaintiff in litigation in 2012, he had no concurrent conflict, and during the entire time McDonnell Boehnen represented Defendants in 2012 to 2014, he had no actual concurrent conflict and did not violate any disciplinary rules. Therefore, Rule 1.7 does not apply.¹

*4 Since I have not reviewed the proffered *ex parte* materials, I will assume without deciding that Rule 1.7(a) applied to the Lee Sullivan lawyers while at McDonnell Boehnen as imputed grounds for disqualification. *See* Rule 1.10(a)(1). I do not think this matters. When the Lee Sullivan lawyers left McDonnell Boehnen, they left any imputed disqualifications behind them. The rule of imputed disqualification applies “[w]hile lawyers are associated in a firm.” *Id.* When lawyers are no longer associated in a firm, they are not subject to the imputed disqualifications they had while in the firm. Plaintiff raised this argument in its brief, citing multiple cases. (D.I.32,

pp. 13–17). Defendants did not respond to it in their reply brief. (D.I.45). Plaintiff raised this argument again at oral argument. (D.I. 50 at 30–35). Defendants responded, but without disagreeing with Plaintiff that imputed disqualification would not follow the Lee Sullivan lawyers to their new firm. Rather, Defendants' position was that the Lee Sullivan lawyers had an actual conflict because two of them had signed the complaint in this case. (D.I. 50 at 48). Thus, Defendants do not contest Plaintiff's argument that imputed disqualification does not follow them to their new firm.

As for Defendants' position at oral argument, I disagree. When the two Lee Sullivan lawyers signed the complaint, Defendants had not been McDonnell Boehnen's client for about 4 1/2 months. An imputed conflict does not become an actual conflict just because it is not noticed.

Defendants also argue that Lee Sullivan should be disqualified under Rule 1.9, which pertains to conflicts of interest arising out of an attorney-client relationship with a former client. (D.I. 20 at 15). It is undisputed that Defendants are former clients of the Lee Sullivan attorneys and that Plaintiff's and Defendants' interests are materially adverse in the present case. The only issue is whether Lee Sullivan's current representation of Plaintiff is the "same" or "substantially related" to its attorneys' prior representation of Defendants while at McDonnell Boehnen. I find it is not.

Although the Lee Sullivan attorneys' prior representation of Defendants involved matters relating to patent litigation, it involved different patents and different products. Defendants were not operating in the field of wireless audio technology until Defendants launched their HEOS product in June 2014. At the time this occurred, McDonnell Boehnen ended its attorney-client

relationship with Defendants. Thus, anything the Lee Sullivan attorneys worked on for Defendants prior to March 2009 (as they did no work for Defendants after then) is not substantially related to their representation of Plaintiff. The present litigation is solely related to the asserted patents and the accused HEOS technology. Any confidences that Defendants disclosed to the Lee Sullivan attorneys during their prior representation occurred before March 2009 and involved unrelated patents and technology. Thus, no confidential information disclosed in prior cases would be relevant to the patents or technology in suit. At most, Defendants disclosed their general strategy for handling patent litigation, which is not enough to warrant disqualification. Thus, I do not believe there is any evidence that the Lee Sullivan attorneys' representation of Plaintiff in this case is substantially related to any of the work previously performed for Defendants. Therefore, the Lee Sullivan attorneys have no actual or imputed conflicts of interest, and I will not disqualify them.

IV. CONCLUSION

For the reasons set forth herein, Defendants' motion is denied. A separate order will be entered.

ORDER

For the reasons stated in the accompanying Memorandum Opinion, this 9 day of September 2015, **IT IS HEREBY ORDERED** that Defendants' motion to disqualify (D.I.19) is **DENIED**.

All Citations

Not Reported in F.Supp.3d, 2015 WL 5277194

Footnotes

- 1 Defendants also rely on the so-called 'hot potato' doctrine for their Rule 1.7 argument. The Third Circuit, however, has not had occasion to adopt the hot potato doctrine. The evidence in the record is the decision to terminate the attorney-client relationship with Defendants was not made by any of the Lee Sullivan lawyers. Therefore, assuming the existence of the 'hot potato' doctrine, I do not find that it applies here to the Lee Sullivan lawyers.

2016 WL 4249493

Only the Westlaw citation is currently available.

United States District Court,
D. Delaware.

Sonos, Inc., Plaintiff,

v.

D&M Holdings Inc. d/b/a D+M Group,
D&M Holdings U.S. Inc., and Denon
Electronics (USA), LLC, Defendants.

C.A. No. 14-1330-RGA-MPT

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Signed 08/10/2016

Attorneys and Law Firms

Philip A. Royner, Jonathan A. Choa, Potter Anderson & Corroon, LLP, Wilmington, DE, George I. Lee, Pro Hac Vice, John D. Smith, III, Pro Hac Vice, Michael P. Boyea, Pro Hac Vice, Rory P. Shea, Pro Hac Vice, Sean M. Sullivan, Pro Hac Vice, for Plaintiff.

Michael J. Flynn, Jack B. Blumenfeld, Morris, Nichols, Arsht & Tunnell LLP, Wilmington, DE, Blake T. Dietrich, Pro Hac Vice, John M. Jackson, Pro Hac Vice, for Defendants.

REPORT and RECOMMENDATION

Mary Pat Thyngne, Chief United States Magistrate Judge

I. INTRODUCTION

*1 On October 21, 2014, Sonos, Inc. ("Sonos") filed its original complaint for patent infringement against defendants, D&M Holdings Inc. d/b/a The D+M Group ("D&M Japan"), D&M Holdings U.S. Inc. ("D&M U.S."), and Denon Electronics (USA), LLC ("Denon U.S.") (collectively, "D&M").¹ Sonos then filed a first amended complaint on December 17, 2014 and a second amended complaint on March 9, 2015.²

On April 30, 2015, D&M filed its first answer in response to Sonos's second amended complaint.³ On November 30, 2015, D&M moved for leave to amend its answer to Sonos's second amended complaint to add counterclaims accusing Sonos of infringing upon one D&M Japanese

patent and eight D&M U.S. patents.⁴ While D&M's motion for leave was pending, Sonos filed a motion for leave on January 29, 2016 to file a third amended complaint.⁵

On March 7, 2016, the court issued an Order that resolved both parties' pending motions.⁶ In that Order, the court granted D&M's motion for leave to amend its answer to Sonos's second amended complaint, and severed D&M's infringement counterclaims into a new case (C.A. No. 16-141-RGA). Sonos's motion for leave to file its third amended complaint was also granted.

On March 28, 2016, D&M filed its answer to Sonos's third amended complaint, which includes eleven affirmative defenses.⁷ Currently before the court is Sonos's motion to strike six of D&M's affirmative defenses, pursuant to FED. R. CIV. P. 12(f), due to their alleged facial insufficiency, lack of factual support, and bare bones conclusory nature.⁸ The affirmative defenses which Sonos moves to strike are failure to state a claim (First); limitations on damages and costs (Fourth); unenforceability – estoppel, acquiescence, and waiver (Fifth); patent exhaustion, patent misuse, and first sale doctrine (Sixth); personal jurisdiction (Ninth); and prosecution laches (Tenth).⁹ Specifically, Sonos maintains that these affirmative defenses are insufficient on their face and should be struck to "clean up the proceedings, streamline litigation, and avoid unnecessary forays into immaterial matters."¹⁰

D&M opposes Sonos's motion, but requests leave to amend its answer under FED. R. CIV. P. 15(a)(2), should the court strike any of its affirmative defenses.¹¹ Sonos does not object to D&M's request to address any possible pleading deficiencies, but reserves the right to challenge in the future D&M's amended defenses on similar grounds.¹²

II. BACKGROUND

Sonos, Inc. is a Delaware corporation with its principal place of business in Santa Barbara, California,¹³ and represents itself to be an "innovator and industry leader in the field of wireless audio technology."¹⁴ Sonos has been manufacturing, distributing, and selling wireless home audio products for roughly ten years and is acknowledged

by multiple media sources for its innovations in this area.¹⁵ This matter focuses on Sonos's "PLAY:5" speakers, "PLAY:3" speakers, "PLAY:1" speakers, and the "CONNECT" pre-amplifier home audio system, which are controlled by a Sonos programmed application and allegedly covered by the patents-at-issue.¹⁶

*2 D&M Holdings Inc. d/b/a The D+M Group is a Japanese corporation with its principal place of business in Kanagawa, Japan.¹⁷ It offers a similar line of wireless home audio equipment, specifically the "HEOS 7" speaker, "HEOS 3" speaker, "HEOS 1" speaker, "HEOS LINK" pre-amplifier, "HEOS AMP" amplifier, "HEOS DRIVE" multi-room amplifier, and the "HEOS HomeCinema" television sound system, all of which are controlled by a D&M programmed application.¹⁸ D&M Holdings U.S. Inc. is a Delaware corporation with its principal place of business in Mahwah, New Jersey.¹⁹ Denon Electronics (USA), LLC is a wholly-owned subsidiary of D&M Holdings U.S. Inc. and has its principal place of business in Mahwah, New Jersey.²⁰

Sonos alleges that D&M's marketing of the HEOS system directly competes with Sonos's wireless audio system by copying Sonos's system, and infringing on its patents.²¹ Sonos also contends D&M markets its products using substantially similar naming conventions as used by Sonos to market its line of home audio equipment.²²

III. GOVERNING LAW

FED. R. CIV. P. 12(f) states in relevant part that "the court may strike from a pleading an insufficient defense or any redundant, immaterial, impertinent, or scandalous matter."²³ "Motions to strike serve to clean up the pleadings, streamline litigation, and avoid unnecessary forays into immaterial matters."²⁴ An immaterial matter is "that which has no essential important relationship to the claim for relief or the defenses being pleaded,"²⁵ while an impertinent matter "consists of statements that do not pertain, and are not necessary, to the issues in question."²⁶ "Motions to strike are generally disfavored and ordinarily denied unless the allegations have no possible relation to the controversy and may cause prejudice to one of the parties."²⁷ Motions to strike under Rule 12(f) "should not be granted unless the presence of

the surplusage will prejudice the adverse party."²⁸ When deciding a motion to strike, "the court must construe all facts in favor of the nonmoving party and deny the motion if the defense is sufficient under law."²⁹ A court "should not strike a defense unless insufficiency is clearly apparent."³⁰ However, a "[c]ourt is not required to accept affirmative defenses that are mere 'bare-bones conclusory allegations,' and may strike such inadequately pleaded defenses."³¹ "A motion to strike will not be granted where the sufficiency of the defense depends on disputed issues of facts or where it is used to determine disputed and substantial questions of law."³²

An examination of FED. R. CIV. P. 8 is useful to determine the requirements of pleading affirmative defenses. An affirmative defense is "a pleading subject to Rule 8(a), and therefore must include a short and plain statement of the defense."³³ A defense may be deemed meritless because it is simply a conclusory allegation which fails to provide an appropriate statement of facts or to allege the necessary elements of the claims.³⁴ "The purpose of requiring the defendant to plead available affirmative defenses in his answer is to avoid surprise and undue prejudice by providing the plaintiff with notice and the opportunity to demonstrate why the affirmative defenses should not succeed."³⁵ "In responding to a pleading, a party must affirmatively state any avoidance or affirmative defense"³⁶

IV. DISCUSSION

A. Application of LR 7.1.1/Timeliness of Sonos's Objections

*3 Before considering Sonos's motion to strike, the issues regarding LR 7.1.1, the statement required to be filed with nondispositive motions, and dispositive motions need to be addressed. D&M relies on LR 72.1 which is directed to the authority and duties of Magistrate Judges. It provides that a "Magistrate Judge is authorized to perform all judicial duties assigned by the Court ... which include, but are not limited to, the following described civil duties" D&M latches onto to LR 72.1(a)(3) as presumptive definition of dispositive motions, despite case law to the contrary in this jurisdiction before and after the issuance our Local Rules, and conflates that with 7.1.1. A motion to strike under Rule 12(f) is dispositive since it dismisses or strikes from a pleading the challenged

defense.³⁷ Therefore, contrary to D&M's argument, a motion to strike is dispositive, and LR 7.1.1, which concerns nondispositive motions, is not applicable.

Regarding whether Sonos's objections are untimely, D&M represents the challenged defenses were initially raised on April 30, 2015 in response to the second amended complaint.³⁸ Between then and the filing of the third amended complaint, Sonos failed to challenge any affirmative defense.³⁹ Sonos also never objected to these defenses in response to D&M's motion for leave to file an amended answer and counterclaims.⁴⁰ D&M further notes that no interrogatory was propounded by Sonos on the affirmative defenses until after the filing of this motion to strike.⁴¹ D&M maintains since no timely objections were filed, they, rather than Sonos, are prejudiced since the deadline to amend pleadings has passed.⁴²

Sonos counters that its objections are timely relying on Fed. R. Civ. P. 12(f) which allows a motion to strike "within 21 days after being served with the pleading." Since D&M's answer was filed on March 28, 2016 and the present motion to strike was filed on April 21, 2016, its motion is timely.⁴³ It points out that D&M's most recent answer included the two new defenses of prosecution laches and prosecution history estoppel.⁴⁴ Sonos further notes that discovery is in its early stages.⁴⁵

The effect of the allowance by the court of the motion to amend for the third amended complaint means that the complaint is the operative document on which the Sonos's action is based. It raises infringement claims for seven additional patents. Although certain of D&M's defenses were raised in prior answers, these defenses and their two new defenses now relate to these additional patents and the facts related thereto. D&M's concern to challenge Sonos's third amended complaint is addressed by their request for leave to amend their pleadings which is granted.

Turning to the motion to dismiss, Sonos asserts that D&M's affirmative defenses are insufficiently pled and should be struck,⁴⁶ because they are conclusory and fail to provide sufficient notice of the bases for these defenses, thereby subjecting Sonos to surprise and undue

prejudice.⁴⁷ Sonos further contends that D&M has no factual basis for its 35 U.S.C. § 288 defense.⁴⁸

B. Motion to Strike Affirmative Defenses

i. Failure to State a Claim

*4 Sonos moves to strike D&M's first affirmative defense, failure to state a claim upon which relief may be granted, because D&M has provided "no notice whatsoever of the nature or basis for [this] defense."⁴⁹ D&M counters that FED. R. CIV. P. 12(h)(2) allows this defense to be raised in any pleading, by later motion, or at trial.⁵⁰ To survive a Rule 12(f) motion to strike, the affirmative defense must be pled in accordance with FED. R. CIV. P. 8(c).⁵¹ D&M has met Rule 8(c) by affirmatively stating this defense in its answer in response to Sonos's third amended complaint.⁵² Sonos has not demonstrated any prejudice.⁵³ Therefore, Sonos's motion to strike D&M's first affirmative defense under FED. R. CIV. P. 12(f) is denied.

ii. 35 U.S.C. § 288

Sonos avers that D&M has not pled any factual basis for their 35 U.S.C. § 288 affirmative defense, which should be struck pursuant to Rule 12(f).⁵⁴ Specifically, Sonos emphasizes that none of the "asserted patents has ever been found invalid."⁵⁵ Sonos concludes that, consistent with the language of § 288, there is "no possible factual basis for D&M's § 288 defense,"⁵⁶ and the mere possibility of one of the patents being determined invalid is purely hypothetical, without any factual support.⁵⁷

35 U.S.C. § 288 provides:

Whenever a claim of a patent is invalid, an action may be maintained for the infringement of a claim of the patent which may be valid. The patentee shall recover no costs unless a disclaimer of the invalid claim has been entered at the

Patent and Trademark Office *before*
the commencement of the suit.⁵⁸

D&M counters that “[a] motion to strike is not the appropriate vehicle to resolve this disputed question of law.”⁵⁹ However, D&M ignores the plain language of the statute and has not shown that any asserted Sonos patent has been found invalid before the commencement of the present action. Rather, D&M surmises that one or more of Sonos's patents will be found invalid. Lastly, D&M argues that the cases relied on by Sonos are non-precedential and mere dicta.⁶⁰ This court held in *Cordance Corp. v. Amazon.com, Inc.*, that § 288 precludes recovering costs where a claim is found invalid *before* commencement of the action.⁶¹ Under 35 U.S.C. § 282, an issued patent is presumed valid.⁶² Since no determination has occurred regarding validity of any asserted claim and D&M's answer merely alleges the possibility of invalidity, D&M's Fourth affirmative defense is struck.

iii. Equitable Defenses

Sonos submits that its motion to strike D&M's Fifth affirmative defense, Unenforceability – Estoppel; Acquiescence; Waiver; and Unclean Hands, should be granted because this defense is insufficiently pled and does not meet FED. R. CIV. P. 9(a) pleading standards of fair notice and particularity for equitable defenses.⁶³ D&M asserts that numerous courts have ruled these affirmative defenses, similarly pled, were sufficient to withstand a motion to strike.⁶⁴ D&M further argues that “[Sonos] is on fair notice of the nature of these defenses” and “[t]he discovery process, and not endless pleading, is the appropriate forum for [Sonos] to seek additional information concerning these defenses.”⁶⁵

*5 D&M has pled insufficient facts in support of their estoppel defense. Estoppel, an equitable defense, requires the showing of three elements:

- (1) The patentee, through misleading conduct, leads the alleged infringer to reasonably infer that the patentee does not intend to enforce its patent against the alleged infringer ...
- (2) The alleged infringer relies on that conduct.

- (3) Due to its reliance, the alleged infringer will be materially prejudiced if the patentee is allowed to proceed with its claim.⁶⁶

An element of estoppel is fraud or misrepresentation, which requires the defense to be pled with particularity under FED. R. CIV. P. 9(b).⁶⁷ D&M has not pled any of the circumstances giving rise to the alleged wrongful conduct with particularity.⁶⁸ Here, D&M alleges only that “Sonos is barred in part or whole by the doctrine of equitable estoppel”⁶⁹ Considering the answer and this affirmative defense in their entirety, D&M's conclusory allegation provides no basis for any misleading conduct.⁷⁰ This defense, as presently pled, should be struck.⁷¹

D&M has pled insufficient facts in support of its unclean hands defense. Unclean hands is an equitable defense requiring the showing of five elements:

- (1) the party seeking affirmative relief
- (2) is guilty of conduct involving fraud, deceit, unconscionability, or bad faith
- (3) directly related to matter in issue
- (4) that injures other party
- (5) and affects balance of equities between litigants.⁷²

Because an element of unclean hands is based in fraud, the defense must be pled with particularity under FED. R. CIV. P. 9(b).⁷³ Unlike *Sum Microsystems, Inc.*, D&M has not pled any facts to suggest misconduct by Sonos.⁷⁴ Therefore, Sonos's motion to strike is granted.

Similarly, D&M has not pled adequate information tending to show the elements of the equitable defense of waiver: (1) an existing right; (2) knowledge of the right; (3) and an actual intention to relinquish the right.⁷⁵ No allegations suggest Sonos's actual intent to relinquish its patent rights.⁷⁶ Sonos's motion to strike should be granted.

Finally, with respect to its acquiescence defense, D&M maintains it applies “in circumstances where a patentee asserts claim scope or validity during litigation over

matters which were acquiesced during the prosecution of the patents.”⁷⁷ Sonos rebuts that this defense is no different from a prosecution history estoppel defense, which D&M has pled separately as its eleventh affirmative defense.⁷⁸ A party is deemed to have acquiesced when it:

*6 has full knowledge of his rights and the material facts and (1) remains inactive for a considerable time; or (2) freely does what amounts to recognition of the complained of act; or (3) acts in a manner inconsistent with the subsequent repudiation, which leads the other party to believe the act has been approved.⁷⁹

For this defense to apply, the narrow question is whether Sonos's conduct amounted to recognition and acceptance.⁸⁰ D&M has not pled sufficient facts to demonstrate either. As a result, D&M's acquiescence defense should be struck.

iv. Unenforceability Defenses

Sonos also moves to strike D&M's sixth affirmative defense, patent exhaustion, patent misuse, and first sale doctrine, because it is conclusory, provides no notice of the nature or the basis of these defenses and subjects Sonos to the risk of surprise and undue prejudice.⁸¹ Sonos further alleges that D&M fails to adequately provide notice as to the alleged actions that form the basis of its patent misuse defense.⁸² In its answering brief, D&M maintains that Sonos has engaged in *per se* patent misuse by tying “the narrow patented features of its products to the unpatented staple features ... in an attempt to monopolize an entire section of the market using its collection of patents on narrow technologies.”⁸³

Patent misuse is:

an affirmative defense to an accusation of patent infringement, ... which requires that the alleged infringer show that the patentee has impermissibly

broadened the physical or temporal scope of the patent grant with anticompetitive effect.⁸⁴

Since a successful claim of patent misuse requires the infringer to show that the patentee has impermissibly broadened the scope of the patent, resulting in an anticompetitive effect, D&M is required to assert a basis showing an anticompetitive effect in its pleadings; delegating this in its answering brief is not sufficient.⁸⁵ Therefore, Sonos's motion to strike should be granted.

D&M's defense of patent exhaustion and first sale doctrine survive the motion to strike. Patent exhaustion “provides that the initial authorized sale of a patented item terminates all patent rights to that item”⁸⁶ which the asserting party must prove at trial.⁸⁷ Unlike the equitable defenses, neither patent exhaustion nor first sale doctrine require the element of fraud, misconduct or misrepresentation. Despite Sonos's argument that patent exhaustion and first sale doctrine are the same defense, the first sale doctrine is just one way patent rights may be exhausted. Although related, they are not the same defense. D&M alleges Sonos has exhausted its patent rights by the first sale doctrine, licensing the manufacture and/or use of their products, or a combination of both.⁸⁸ For example, if sale of a patented item by Sonos was unconditional, its patent rights would be exhausted via the first sale doctrine. Similarly, if any licensing agreements authorized D&M to produce the accused products, Sonos's patent rights would also be exhausted. At this stage, D&M notes they have insufficient information.⁸⁹ Such information would likely be within the control of Sonos. Discovery for both sides, rather than a motion to strike, is the more appropriate route to learn further information on these affirmative defenses.

*7 On the affirmative defenses of patent exhaustion and first sale doctrine, Sonos's motion to strike should be denied.

v. Prosecution Laches

Prosecution laches is an “equitable defense to a charge of patent infringement.”⁹⁰ An unreasonable and inexcusable delay is required to successfully assert a defense of prosecution laches.⁹¹ D&M avers, based on

information and belief, that Sonos's claims are barred in whole or in part by the doctrine of prosecution laches.⁹² Sonos asks the court to strike this affirmative defense because it is "insufficient [and] unduly prejudicial."⁹³ Additionally, Sonos contends D&M has not identified or alleged any facts supporting the elements of a prosecution laches defense: prejudice, intervening rights, or unreasonable and unexpected delay.⁹⁴ D&M responds that Sonos has 25 issued patents, of which 23 include the word "clock" in its claims.⁹⁵ D&M argues Sonos attempted to "cover the concept of using a clock in a wireless audio device" with 24 patents and 640 claims, thereby illustrating a pattern of unduly and repetitive filings which creates an overall delay in the issuance of claims.⁹⁶

D&M's assertion of prosecution laches is limited to a one sentence conclusory statement,⁹⁷ containing no information to support the elements of unreasonable and inexcusable delay.⁹⁸ They attempt to supplement this single comment by detailing certain facts in their answering brief, which is insufficient to plead the affirmative defense of prosecution laches.⁹⁹ Therefore, Sonos's motion to strike D&M's defense of prosecution laches is granted.

As granted previously in this Report and Recommendation, the court will allow D&M's request for

leave to amend its pleading to remedy the deficiencies noted.

V. CONCLUSION

For the foregoing reasons, it is recommended that:

(1) Sonos's motion to strike (D.I. 111) be **GRANTED** as to D&M's Fourth, Fifth, Tenth, and Patent Misuse (Sixth) defenses and **DENIED** as to D&M's First affirmative defense and Patent Exhaustion/First Sale Doctrine (Sixth) defenses;

(2) D&M's request for leave to amend their answer be **GRANTED**. D&M's amended answer shall be due on or before September 7, 2016.

This Report and Recommendation is filed pursuant to 28 U.S.C. § 636(b)(1)(B), FED. R. CIV. P. 72(b)(1), and D. DEL. LR 72.1. The parties may serve and file specific written objections within ten (10) days after being served with a copy of this Report and Recommendation.

The parties are directed to the Court's Standing Order in Non-Pro Se matters for Objections Filed under FED. R. CIV. P. 72, dated October 9, 2013, a copy of which is available on the Court's website, www.ded.uscourts.gov.

All Citations

Slip Copy, 2016 WL 4249493

Footnotes

- 1 D.I. 1.
- 2 D.I. 6; D.I. 31.
- 3 D.I. 48.
- 4 D.I. 81.
- 5 D.I. 93; D.I. 94.
- 6 D.I. 100.
- 7 D.I. 106.
- 8 D.I. 112 at 4.
- 9 D.I. 112 at 2. D&M has since withdrawn its claim of lack of personal jurisdiction. As a result, this Report & Recommendation will not address the ninth affirmative defense.
- 10 D.I. 112 at 2.
- 11 D.I. 119 at 14.
- 12 D.I. 124 at 10.
- 13 D.I. 102 at 1.
- 14 *Id.* at 3.
- 15 *Id.*

16 *Id.*
17 *Id.* at 1.
18 D.I. 102 at 4.
19 *Id.* at 2.
20 *Id.*
21 *Id.* at
22 D.I. 102 at 5.
23 FED. R. CIV. P. 12(f).
24 *Sun Microsystems, Inc. v. Versata Enterprises, Inc.*, 630 F. Supp. 2d 395, 402 (D. Del. 2009).
25 *Delaware Health Care, Inc. v. MCD Holding Co.*, 893 F. Supp. 1279, 1292 (D. Del. 1995).
26 *Id.*
27 *Sun Microsystems, Inc.*, 630 F. Supp. 2d at 402.
28 *Symbol Techs., Inc.*, 609 F. Supp. 2d 353, 359 (D. Del. 2009).
29 *Procter & Gamble Co. v. Nabisco Brands, Inc.*, 697 F. Supp. 1361, 1362 (D. Del. 1988).
30 *Feesnak & Assocs., LLP v. U.S. Bank Nat. Ass'n*, 722 F. Supp. 2d 496, 502 (D. Del. 2010).
31 *Sun Microsystems, Inc.*, 630 F. Supp. 2d at 408.
32 *Gross v. Weinstein, Weinburg & Fox, LLC*, 123 F. Supp. 3d 575, 580 (D. Del. 2015)(quoting *Cadence Pharm., Inc. v. Paddock Labs, Inc.*, 2012 WL 4565013, at *1 (D. Del. Oct. 1, 2012)).
33 *See, e.g., Do It Best Corp. v. Heinen Hardware, LLC*, No. 13-69, 2013 WL 3421924, at *3 (N.D. Ind. July 8, 2013). *See also* 8(b) which requires when "responding to a pleading, a party must state in short and plain terms its defenses to each claim asserted."
34 *Heiler Fin., Inc. v. Midwhay Powder Co., Inc.*, 883 F.2d 1286, 1294 (7th Cir. 1989).
35 *In re Sterten*, 546 F.3d 278, 285(3d. Cir. 2008).
36 FED. R. CIV. P. 8(c)(1).
37 *See StairMaster Sports/Med. Products, Inc. v. Groupe Procycle, Inc.*, 182 F.R.D.117, 120 (D. Del. 1998) (confirming that a motion to strike affirmative defenses is issue dispositive, and regarding plaintiff's motion to strike stated "... the Court is hard pressed to devise a more issue dispositive motion"). *See also, Chase Bank USA N.A. v. Hess*, C.A. No. 08-121-LPS, 2013 WL 5314706, at *1 (D. Del. Sept. 20, 2013) (noting that a motion to strike defendant's answer presents a case dispositive issue); *United States v. Parcel of Land in Town of Middletown, New Castle Cty.*, 32 F. Supp. 718, 721 (D. Del. 1940) (commenting that a motion to strike is "equivalent to a motion to dismiss.").
38 D.I. 119 at 4. D&M claims the only affirmative defense not previously asserted was prosecution laches.
39 *Id.*
40 *Id.*
41 *Id.*
42 *Id.*
43 D.I. 124 at 2.
44 *Id.*
45 *Id.* at 3.
46 D.I. 112 at 2.
47 *Id.* The prejudice alleged includes modification by D&M of its defense theories without having to request leave of the court or provide timely notice; obtaining the details regarding the nature and bases of the defenses via discovery; and potentially subjecting Sonos to unnecessary discovery and/or motion practice of non-viable defenses. *See* D.I. 124 at 4.
48 *Id.*
49 D.I. 124 at 9.
50 D.I. 119 at 12; *see also* FED. R. CIV. P. 12(h)(2).
51 FED. R. CIV. P. 8(c).
52 D.I. 106 at 16.
53 D.I. 112 at 9-10.
54 *Id.* at 10.
55 D.I. 124 at 9. Sonos does not challenge D&M's claim that Sonos's recovery is limited by 35 U.S.C. §§ 286 and 287.

56 D.I. 124 at 9.
57 *Id.*
58 35 U.S.C. § 288 (emphasis added).
59 D.I. 119 at 13 (quoting *Cadence Pharm., Inc. v. Paddock Labs., Inc.*, C.A. No. 11-733-LPS, 2012 WL 4565013, at *3 (D. Del. Oct. 1, 2012)).
60 D.I. 119 at 13.
61 *Cordance Corp. v. Amazon.com, Inc.*, 631 F. Supp. 2d 484, 503 (D. Del. 2009). (emphasis added).
62 35 U.S.C. § 282.
63 D.I. 112 at 5-6.
64 D.I. 119 at 7.
65 *Id.*
66 *Phillips Electronics North America Corp. v. Contec Corp.*, 312 F. Supp. 2d 639, 641 (D. Del. 2004) (citing *A.C. Aukerman Co. v. R.L. Chaides Construction Co.*, 960 F.2d 1020, 1041 (Fed. Cir. 1992)).
67 FED. R. CIV. P. 9(b).
68 See D.I. 106 at 17; D.I. 119 at 11-13.
69 D.I. 106 at 17.
70 See *Sun Microsystems, Inc. v. Versata Enterprises, Inc.*, 630 F. Supp. 2d 395, 409 (D. Del. 2009).
71 Unlike the defendant in *Symbol Technologies, Inc. v. Aruba Networks, Inc.*, 609 F. Supp. 2d 353, 356 (D. Del. 2009), D&M has alleged no bases for equitable estoppel.
72 *Id.* at 410 (citing *Castle v. Cohen*, 676 F. Supp. 620, 627 (E.D. Pa. 1987)).
73 FED. R. CIV. P. 9(b).
74 Compare D.I. 106 at 17 with *Sun Microsystems, Inc.*, 630 F. Supp. 2d at 410.
75 *Sun Microsystems, Inc.*, 630 F. Supp. 2d at 409.
76 D.I. 106 at 7; see *Sun Microsystems, Inc.*, 630 F. Supp. 2d at 410.
77 D.I. 119 at 8.
78 D.I. 124 at 6.
79 *Klassen v. Allegro Development Corp.*, 106 A3d 1035, 1047 (Del. 2014).
80 *Id.*
81 D.I. 112 at 7.
82 D.I. 112 at 8.
83 D.I. 119 at 9-10.
84 *Intellectual Ventures I LLC v. Symantec Corp.*, C.A. No. 13-1440-LPS, 2014 WL 4773954 (D. Del. Sept. 24, 2014) (citing *VA Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 868 (Fed. Cir. 1997)).
85 *Id.*
86 *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617, 625 (2008).
87 *Intel Corp. v. Broadcom Corp.*, 173 F. Supp. 2d 201, 206 (D. Del. 2001).
88 D.I. 119 at 10-11.
89 *Id.*
90 *Cancer Research Tech. Ltd. v. Barr Labs., Inc.*, 625 F.3d 724, 729 (Fed. Cir. 2010).
91 *Id.*; *Cordance Corp. v. Amazon.com, Inc.*, 631 F. Supp. 2d 484, 489 (D. Del. Jun. 30, 2009).
92 D.I. 106 at 18.
93 D.I. 112 at 9; D.I. 124 at 8.
94 *Id.* at 9. See *Cancer Research Tech.* 625 F.3d at 729.
95 D.I. 119 at 11-12.
96 *Id.*
97 D.I. 106 at 18. See *Symbol Techs., Inc. v. Aruba Networks, Inc.*, 609 F. Supp. 2d 353, 359 (D. Del. 2009).
98 D.I. 106 at 18 (“Based on information and belief, Sonos is barred in whole or in part by the doctrine of prosecution laches from enforcing the Patents-in-Suit against Defendants.”).
99 D.I. 119 at 16-17.

End of Document

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Only the Westlaw citation is currently available.

United States District Court,
D. Delaware.

Sonos Inc., Plaintiff,

v.

D&M Holdings Inc., et al., Defendants.

Civil Action No. 14-1330-RGA

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Attorneys and Law Firms

Philip A. Rovner, Jonathan A. Choa, Potter Anderson &
Corroon, LLP, Wilmington, DE, for Plaintiff.

George I. Lee, Pro Hac Vice.

John D. Smith, III, Pro Hac Vice.

Michael P. Boyea, Pro Hac Vice.

Rory P. Shea, Pro Hac Vice.

Sean M. Sullivan, Pro Hac Vice.

Michael J. Flynn, Jack B. Blumenfeld, Morris, Nichols,
Arsht & Tunnell LLP, Wilmington, DE, for Defendants.

Blake T. Dietrich, Pro Hac Vice.

John M. Jackson, Pro Hac Vice.

ORDER

Richard G. Andrews, United States District Judge

*1 This 31 day of August 2016, upon consideration of the Magistrate Judge's Report and Recommendation dated August 10, 2016, and no objections to the Report and Recommendation having been received, and the Court having reviewed the Magistrate Judge's Report and Recommendation, IT IS HEREBY ORDERED:

1. The Report and Recommendation (D.I. 143) is **ADOPTED**.

2. Plaintiff's Motion to Strike (D.I. 111) is **GRANTED in part and DENIED in part** as set forth in the Report and Recommendation.

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SONOS, INC., Plaintiff,

v.

D&M HOLDINGS INC. d/b/a The D
+M Group, D&M Holdings U.S. Inc., and
Denon Electronics (USA), LLC, Defendants.

Civil Action No. 14-1330-RGA

Entered 02/03/2017

Attorneys and Law Firms

Phillip A. Royner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL., Attorneys for Plaintiff

Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq., JACKSON WALKER LLP, Dallas, TX; Kurt A. Schwarz, Esq., JACKSON WALKER LLP, Dallas, TX; Nathaniel (Nate) S. Clair II, Esq., JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq., JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX., Attorneys for Defendants

MEMORANDUM OPINION

Richard G. Andrews, United States District Judge

*1 Presently before the Court is Defendants' Motion for Leave to Amend Their Answer to Add the Defense

of Inequitable Conduct. (D.I. 176). The issues have been fully briefed. (D.I. 177, 189, 192). For the reasons that follow, the Court will deny Defendant's motion.

I. BACKGROUND

Plaintiff filed this patent infringement lawsuit against Defendants on October 14, 2014. (D.I. 1). On August 25, 2015, the Court issued a Scheduling Order specifying that amendments to the pleadings to assert the defense of inequitable conduct must be filed on or before August 1, 2016. (D.I. 65). On August 1, 2016, Defendants filed a Motion for Leave to Amend Answer to Add the Defense of Inequitable Conduct. (D.I. 141). At that time, Defendants filed their proposed First Amended Answer. (D.I. 141-2). Plaintiff opposed Defendants' motion, arguing that Defendants proposed First Amended Answer did not meet the heightened pleading standard required for inequitable conduct. (D.I. 152 at 8). On September 9, 2016, Defendants filed their reply brief, including a proposed Second Amended Answer containing substantially more material related to their inequitable conduct defense. (D.I. 160). Unsurprisingly, Plaintiff filed a Motion to Strike Defendants' New Amended Answer Submitted with Their Reply Brief. (D.I. 161). On October 7, 2016, the Court issued an Order directing Defendants to advise the Court by October 12, 2016 as to whether they intended to rely on the First Amended Answer or the Second Amended Answer. (D.I. 172). The Court further advised that if Defendants intended to rely on the Second Amended Answer, they would need to file a new motion to amend. (*Id.*). On October 12, 2016, Defendants filed the instant Motion to Amend in which they indicated that they elected the proposed Second Amended Answer. (D.I. 177 at 8). In light of this election, the Court dismissed Defendants' first Motion to Amend as moot. (D.I. 180).

II. LEGAL STANDARD

Rule 15(a) of the Federal Rules of Civil Procedure provides that "[a] party may amend its pleading once as a matter of course within 21 days after serving it." A party seeking to amend after this deadline or more than once may only do so "with the opposing party's written consent or the court's leave." Fed. R. Civ. P. 15(a)(2). Leave to amend "should [be] freely give[n] ... when justice so requires." *Id.* The decision to grant or deny leave to amend lies within the discretion of the court. *Foman v. Davis*, 371 U.S. 178, 182 (1962); *In re Burlington Coat*

Factory Secs. Litig., 114 F.3d 1410, 1434 (3d Cir. 1997). The Third Circuit has adopted a liberal approach to the amendment of pleadings. *Dole v. Arco*, 921 F.2d 484, 487 (3d Cir. 1990). In the absence of undue delay, bad faith, or dilatory motives on the part of the moving party, the amendment should be freely granted, unless it is futile or unfairly prejudicial to the non-moving party. *Foman*, 371 U.S. at 182; *In re Burlington*, 114 F.3d at 1434.

When a pleading deadline imposed by a scheduling order has passed, however, a party seeking to amend must, as a threshold matter, show “good cause” to modify the deadlines. Fed. R. Civ. P. 16(b)(4); *E. Minerals & Chemicals Co. v. Mahan*, 225 F.3d 330, 340 (3d Cir. 2000). Good cause is found when, despite diligence on the part of the party seeking to amend, the deadline in the scheduling order “cannot reasonably be met.” Fed. R. Civ. P. 16 Advisory Committee’s Notes (1983 amendments). The focus of the “good cause” inquiry is, therefore, on diligence of the moving party, rather than on prejudice, futility, bad faith, or any of the other Rule 15 factors. *Glaxosmithkline LLC v. Glenmark Pharm. Inc.*, 2016 WL 7319670, at *1 (D. Del. Dec. 15, 2016).

III. DISCUSSION

*2 As an initial matter, I reject Defendants’ assertions that the current motion is not subject to the more stringent “good cause” standard of Rule 16(b). Defendants argue that because they “openly disclosed their legally sufficient theories of inequitable conduct” prior to the deadline, the current proposed amendment should not be subject to the “good cause” standard. (D.I. 177 at 17–18, n.5). This is incorrect. Disclosing a legal theory is not the equivalent of substantively amending a pleading. Defendants’ proposed Second Amended Answer is substantially and materially different from their First Amended Answer.¹ If Defendants wanted their motion to be considered under the more lenient standard of Rule 15, they should have elected to rely on their proposed First Amended Answer, which was filed by the deadline imposed by the Court’s Scheduling Order. Since Defendants elected their proposed Second Amended Answer with its much more extensive allegations, they must, as a threshold matter, meet the more stringent “good cause” standard.

Defendants have not shown good cause for this belated amendment. In fact, Defendants focus in their briefing primarily on why they should not have to meet the good cause standard and why they believe they meet the lesser Rule 15 standard. The only argument Defendants make in support of diligence, the only factor important in the Rule 16 analysis, is that they “have diligently pursued their request for leave since August 1, 2016.” (D.I. 177 at 18). This is the wrong time frame for the diligence analysis, however. To show good cause, Defendants must show diligence in pursuing their inequitable conduct defense prior to the deadline for amendments; whether Defendants acted diligently, after the deadline, in addressing the deficiencies Plaintiff identified in their First Amended Answer is simply irrelevant. Furthermore, Defendants have not argued that their defense is based on newly disclosed evidence that could not have been obtained prior to the deadline. Nor could they. The inequitable conduct allegations in the proposed Second Amended Answer rest entirely on information that was publicly available months or even years before the deadline for amendments.

Because Defendants have failed to show good cause for allowing this belated amendment, I decline to address the parties’ arguments regarding prejudice and futility.²

IV. CONCLUSION

*3 For the reasons set forth herein, Defendants’ Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct is **DENIED**.

An appropriate order will be entered.

ORDER

For the reasons set forth in the accompanying memorandum, **IT IS HEREBY ORDERED** that Defendants’ Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct (D.I. 176) is **DENIED**.

All Citations

Slip Copy, 2017 WL 476279

Footnotes

- 1 Defendants' Second Amended Answer includes an additional thirty-six paragraphs and fourteen pages of allegations in the Inequitable Conduct section not present in their First Amended Answer. (D.I. 142-1, 177-1).
- 2 Even if I were to find some hint of good cause for this amendment, I am dubious about whether Defendants' pleading is sufficient. In order "to plead the 'circumstances' of inequitable conduct with the requisite 'particularity' under Rule 9(b), the pleading must identify the specific who, what, when, where, and how of the material misrepresentation or omission committed before the PTO." *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1328 (Fed. Cir. 2009). Furthermore, the pleading "must include sufficient allegations of underlying facts from which a court may reasonably infer that a specific individual (1) knew of the withheld material information or of the falsity of the material misrepresentation, and (2) withheld or misrepresented this information with a specific intent to deceive the PTO." *Id.* at 1328-29. Defendants' identification of the required "who" is murky at best, with most allegations centering on Sonos's current in-house counsel, an attorney who was not even employed by Sonos until March 2014, years after the occurrence of much of the alleged misconduct. (D.I. 189 at 16). In addition, Defendants' allegations of intent revolve around Sonos's attorneys' knowledge of the existence of prior art references cited during prosecution of some patents, but not others. (D.I. 177-1 at ¶¶44, 52). This alone is insufficient. "The mere fact that an applicant disclosed a reference during prosecution of one application, but did not disclose it during prosecution of a related application, is insufficient to meet the threshold level of deceptive intent required to support an allegation of inequitable conduct." *Exergen*, 575 F.3d at 1331.

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References Cited Items (12)

Title	Date	Type
1. LEVEL METER FOR DIGITALLY-ENCODED AUDIO Out Of Place US PAT 5751819	Jul 24, 1995	Patents
2. MULTI MACHINE MONITOR FOR TV POST PRODUCTION Out Of Place US PAT 5299266	Mar 20, 1992	Patents
3. INTERNET FACILITATED EMERGENCY AND GENERAL PAGING SYSTEM Out Of Place US PAT 7218708	Mar 12, 2004	Patents
4. COMPUTER MEDIA SYNCHRONIZATION PLAYER Out Of Place US PAT APP 20040252400	Jun 13, 2003	Patents
5. REAL TIME VIDEO PRODUCTION SYSTEM AND METHOD Out Of Place US PAT APP 20020109710	Apr 15, 2002	Patents
6. AUDIO POWER MONITORING SYSTEM Out Of Place US PAT APP 20050047605	Sep 03, 2003	Patents
7. LEVEL ADJUSTMENT APPARATUS Out Of Place US PAT APP 20040008852	Jul 09, 2003	Patents
8. SYSTEM AND METHOD FOR SYNCHRONIZING OPERATIONS AMONG A PLURALITY OF INDEPENDENTLY CLOCKED DIGITAL DATA PROCESSING DEVICES Out Of Place US PAT APP 20070038999	Apr 01, 2004	Patents
9. DATA STRUCTURE FOR AN ENTERTAINMENT AND COMMUNICATIONS NETWORK Out Of Place US PAT APP 20020188762	May 04, 2001	Patents
10. METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS FOR ZONE BASED DISTRIBUTION OF AUDIO SIGNALS Out Of Place US PAT APP 20020124097	Dec 29, 2000	Patents
11. SYNCHRONOUS MEDIA PLAYBACK AND MESSAGING SYSTEM Out Of Place US PAT APP 20030126211	Dec 12, 2001	Patents
12. FADER DEVICE HAVING A FINE ADJUSTMENT OF THE SIGNAL LEVEL Out Of Place US PAT 5239458	Jul 20, 1990	Patents

Citing References (333)

Treatment	Title	Date	Type	Depth	Headnote(s)
Examined by	1. Patent Owner D&M Holdings Inc.'s Preliminary Response <small>Out Of Play</small> SONOS, INC., Petitioner, v. D&M HOLDINGS INC., Patent Owner. 2017 WL 2888651, *1+ , Patent Tr. & App. Bd. (Administrative Filing)	July 06, 2017	Administrative Filing		—
Examined by	2. Second Amended complaint for Patent Infringement <small>Out Of Play</small> SONOS, INC., Plaintiff, v. D&M HOLDINGS INC. d/ b/a the D+M Group, D&M Holdings U.S. Inc., and Denon Electronics (USA), LLC, Defendants. 2015 WL 5398693, *1+ , D.Del. (Trial Pleading)	Mar. 09, 2015	Petition		—
Examined by	3. First Amended Complaint for Patent Infringement <small>Out Of Play</small> SONOS, INC., Plaintiff, v. D&M HOLDINGS INC. d/ b/a the D+M Group, D&M Holdings U.S. Inc., and Denon Electronics (USA), LLC, Defendants. 2014 WL 10394226, *1+ , D.Del. (Trial Pleading)	Dec. 17, 2014	Petition		—
Cited by	4. Multi-channel pairing in a media system LitAlert P2014-43-64	Oct. 21, 2014	Lit Alert		—
Cited by	5. Patent Owner D&M Holdings Inc.'s Preliminary Response <small>Out Of Play</small> SONOS, INC., Petitioner, v. D&M HOLDINGS INC., Patent Owner. 2017 WL 2888650, *1+ , Patent Tr. & App. Bd. (Administrative Filing)	July 06, 2017	Administrative Filing		—
Cited by	6. Patent Owner Preliminary Response Pursuant to 37 C.F.R. s 42.107 <small>Out Of Play</small> UNIFIED PATENTS INC., Petitioner, v. QURIO HOLDINGS, INC., Patent Owner. 2016 WL 696517, *1 , Patent Tr. & App. Bd. (Administrative Filing)	Jan. 07, 2016	Administrative Filing		—
Cited by	7. Petition for Inter Partes Review of U.S. Patent 7,767,904 <small>Out Of Play</small> UNIFIED PATENTS INC., Petitioner, v. QURIO HOLDINGS, INC., Patent Owner. 2015 WL 5782138, *1 , Patent Tr. & App. Bd. (Administrative Filing)	Sep. 28, 2015	Administrative Filing		—
Cited by	8. Defendants' Response in Opposition to Plaintiff's Motion to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f) <small>Out Of Play</small> SONOS, INC., Plaintiff, v. D&M HOLDINGS INC. d/ b/a the D+M Group, D&M Holdings U.S. Inc., and Denon Electronics (USA), LLC, Defendants. 2016 WL 4771470, *1 , D.Del. (Trial Motion, Memorandum and Affidavit)	May 09, 2016	Motion		—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	9. NETWORK DIGITAL AUDIO SYSTEM HAS ONE TASK SOURCE PROCESSOR AND SEVERAL MEMBER PROCESSORS, SUCH THAT EACH MEMBER PROCESSOR DETERMINES ITS TASK EXECUTION TIME BASED ON CURRENT TIME VALUE INDICATED BY SOURCE PROCESSOR Out Of Plan DWPI 2005-172844+	July 28, 2003	DWPI	—	—
—	10. VOLUME CONTROL SYSTEM, CONTROLLER, AND AMPLIFYING APPARATUS Out Of Plan US PAT 8571236 , U.S. PTO Utility	Oct. 29, 2013	Patents	—	—
—	11. MULTI-CHANNEL BROADCASTING SYSTEM USING DIGITAL MATRIX AMPLIFIER AND METHOD OF CONTROLLING THE SAME Out Of Plan US PAT 8553902 , U.S. PTO Utility	Oct. 08, 2013	Patents	—	—
—	12. REMOTE AUDIO AMPLIFIER MONITORING SYSTEM Out Of Plan US PAT 8554347 , U.S. PTO Utility	Oct. 08, 2013	Patents	—	—
—	13. SYSTEM AND METHODS FOR ADJUSTING GRAPHICAL REPRESENTATIONS OF MEDIA FILES BASED ON PREVIOUS USAGE Out Of Plan US PAT 8527876 , U.S. PTO Utility	Sep. 03, 2013	Patents	—	—
—	14. AUDIO RELATED SYSTEM LINK MANAGEMENT Out Of Plan US PAT 8473844 , U.S. PTO Utility	June 25, 2013	Patents	—	—
—	15. SYNCHRONIZED PLAYBACK OF MEDIA PLAYERS Out Of Plan US PAT 8463875 , U.S. PTO Utility	June 11, 2013	Patents	—	—
—	16. SYSTEM AND METHOD FOR SHARING PLAYLISTS Out Of Plan US PAT 8458356 , U.S. PTO Utility	June 04, 2013	Patents	—	—
—	17. CONTROL DEVICE, CONTROL METHOD, AND CONTROL SYSTEM Out Of Plan US PAT 8458594 , U.S. PTO Utility	June 04, 2013	Patents	—	—
—	18. USER INTERFACE FOR MANAGING THE OPERATION OF NETWORKED MEDIA PLAYBACK DEVICES Out Of Plan US PAT 8423893 , U.S. PTO Utility	Apr. 16, 2013	Patents	—	—
—	19. PRE-PROGRAMMED MULTIMEDIA CONTROLLER FOR E.G. REMOTELY CONTROLLING MPEG-1 AUDIO LAYER 3 PLAYERS, HAS PROCESSOR CONTROLLING OPERATION OF PARTS IN ZONE PLAYER, WHERE ZONE SCENE CONFIGURATION INCLUDES ACTIVATION OF GROUP AUTOMATICALLY AT TIME Out Of Plan DWPI 2012-N21945	June 05, 2004	DWPI	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	20. MULTIMEDIA PLAYER I.E. AUDIO PLAYER, CONTROL METHOD FOR MULTI-ZONE MULTI MEDIA SYSTEM, INVOLVES CHANGING VOLUME OF EACH GROUP OF PLAYERS SYNCHRONOUSLY IN ACCORDANCE WITH ADJUSTMENT MADE BY USER Out Of File DWPI 2009-M16194	Apr. 01, 2004	DWPI	—	—
—	21. RF 038329/0253 Out Of File	Apr. 01, 2016	Assignments	—	—
—	22. RF 037112/0014 Out Of File	Nov. 15, 2015	Assignments	—	—
—	23. RF 028345/0881 Out Of File	June 08, 2012	Assignments	—	—
—	24. RF 023998/0778 Out Of File	Feb. 26, 2010	Assignments	—	—
—	25. RF 017664/0836 Out Of File	May 24, 2006	Assignments	—	—
—	26. RF 015443/0654 Out Of File	June 05, 2004	Assignments	—	—
—	27. USER INTERFACES FOR CONTROLLING AND MANIPULATING GROUPINGS IN A MULTI-ZONE MEDIA SYSTEM Out Of File US PAT APP 20130288802 , U.S. PTO Application	Oct. 31, 2013	Patents	—	—
—	28. VOLUME CONTROL SYSTEM, CONTROLLER PROGRAM OF THE VOLUME CONTROL SYSTEM, AND AUDIO OUTPUT DEVICE OF THE VOLUME CONTROL SYSTEM Out Of File US PAT APP 20130148825 , U.S. PTO Application	June 13, 2013	Patents	—	—
—	29. PatStat 7571014	Feb. 14, 2017	Patent Status Files	—	—
—	30. PatStat 7571014	Apr. 09, 2013	Patent Status Files	—	—
—	32. The program of the controller of a sound volume control system and a sound volume control system, and the audio voice output apparatus of a sound volume control system Out Of File JP PAT APP 2013123154 A (MAT)	June 20, 2013	Patents	—	—
—	33. CALIBRATION OF MULTIPLE PLAYBACK DEVICES Out Of File US PAT 9699555 , U.S. PTO Utility	July 04, 2017	Patents	—	—
—	34. SPEAKER CALIBRATION Out Of File US PAT 9690271 , U.S. PTO Utility	June 27, 2017	Patents	—	—
—	35. METHOD AND APPARATUS FOR DISPLAYING SINGLE AND INTERNET RADIO ITEMS IN A PLAY QUEUE Out Of File US PAT 9690466 , U.S. PTO Utility	June 27, 2017	Patents	—	—
—	36. SPEAKER CALIBRATION USER INTERFACE Out Of File US PAT 9690539 , U.S. PTO Utility	June 27, 2017	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
---	37. SOCIAL MEDIA QUEUE <small>Out Of Plan</small> US PAT 9690540 , U.S. PTO Utility	June 27, 2017	Patents	---	---
---	38. TRANSDUCER DIAPHRAGM <small>Out Of Plan</small> US PAT 9693146 , U.S. PTO Utility	June 27, 2017	Patents	---	---
---	39. DETERMINING DIRECTION OF NETWORKED MICROPHONE DEVICE RELATIVE TO AUDIO PLAYBACK DEVICE <small>Out Of Plan</small> US PAT 9693164 , U.S. PTO Utility	June 27, 2017	Patents	---	---
---	40. VALIDATION OF AUDIO CALIBRATION USING MULTI-DIMENSIONAL MOTION CHECK <small>Out Of Plan</small> US PAT 9693165 , U.S. PTO Utility	June 27, 2017	Patents	---	---
---	41. PLAYBACK ZONE SILENT CONNECT <small>Out Of Plan</small> US PAT 9684484 , U.S. PTO Utility	June 20, 2017	Patents	---	---
---	42. FAST-RESUME AUDIO PLAYBACK <small>Out Of Plan</small> US PAT 9684485 , U.S. PTO Utility	June 20, 2017	Patents	---	---
---	43. ADAPTIVE USER INTERFACE FOR MULTI-SOURCE SYSTEMS <small>Out Of Plan</small> US PAT 9686145 , U.S. PTO Utility	June 20, 2017	Patents	---	---
---	44. AUTOMATIC CONFIGURATION OF HOUSEHOLD PLAYBACK DEVICES <small>Out Of Plan</small> US PAT 9686282 , U.S. PTO Utility	June 20, 2017	Patents	---	---
---	45. GROUP COORDINATOR SELECTION BASED ON COMMUNICATION PARAMETERS <small>Out Of Plan</small> US PAT 9686351 , U.S. PTO Utility	June 20, 2017	Patents	---	---
---	46. SMART-LINE IN PROCESSING <small>Out Of Plan</small> US PAT 9686606+ , U.S. PTO Utility	June 20, 2017	Patents	---	---
---	47. IDENTIFICATION OF AUDIO CONTENT FACILITATED BY PLAYBACK DEVICE <small>Out Of Plan</small> US PAT 9678707 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	48. VOLUME LIMIT <small>Out Of Plan</small> US PAT 9678708 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	49. REMOTE COMMAND LEARNING <small>Out Of Plan</small> US PAT 9678712 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	50. WEBPAGE MEDIA PLAYBACK <small>Out Of Plan</small> US PAT 9679054 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	51. ANTENNA ASSEMBLIES <small>Out Of Plan</small> US PAT 9680214 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	52. SATELLITE VOLUME CONTROL <small>Out Of Plan</small> US PAT 9680433 , U.S. PTO Utility	June 13, 2017	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
---	53. RECEIVING MEDIA CONTENT BASED ON MEDIA PREFERENCES OF MULTIPLE USERS Out Of Plan US PAT 9680960 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	54. SMART LINE-IN PROCESSING IN A GROUP Out Of Plan US PAT 9681223+ , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	55. CONTROL OF MULTIPLE PLAYBACK DEVICES Out Of Plan US PAT 9681232 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	56. LOUDSPEAKER DIAPHRAGM Out Of Plan US PAT 9681233 , U.S. PTO Utility	June 13, 2017	Patents	---	---
---	57. PLAYBACK DEVICE CONTROL Out Of Plan US PAT 9671780 , U.S. PTO Utility	June 06, 2017	Patents	---	---
---	58. ZONE GROUPING Out Of Plan US PAT 9671997 , U.S. PTO Utility	June 06, 2017	Patents	---	---
---	59. PROVIDING MEDIA ITEMS FROM PLAYBACK HISTORY Out Of Plan US PAT 9672213 , U.S. PTO Utility	June 06, 2017	Patents	---	---
---	60. DATA ROUTING OPTIMIZATION Out Of Plan US PAT 9674246 , U.S. PTO Utility	June 06, 2017	Patents	---	---
---	61. SYSTEMS AND METHODS FOR NETWORKED MUSIC PLAYBACK INCLUDING REMOTE ADD TO QUEUE Out Of Plan US PAT 9674587 , U.S. PTO Utility	June 06, 2017	Patents	---	---
---	62. METHODS AND SYSTEMS TO SELECT AN AUDIO TRACK Out Of Plan US PAT 9665339 , U.S. PTO Utility	May 30, 2017	Patents	---	---
---	63. SYNCHRONIZED AUDIO MIXING Out Of Plan US PAT 9665341 , U.S. PTO Utility	May 30, 2017	Patents	---	---
---	64. OBTAINING CONTENT BASED ON CONTROL BY MULTIPLE CONTROLLERS Out Of Plan US PAT 9665343+ , U.S. PTO Utility	May 30, 2017	Patents	---	---
---	65. INDICATING AN ASSOCIATION BETWEEN A SOCIAL-MEDIA ACCOUNT AND A MEDIA PLAYBACK SYSTEM Out Of Plan US PAT 9667679 , U.S. PTO Utility	May 30, 2017	Patents	---	---
---	66. AUDIO CONTENT PLAYBACK MANAGEMENT Out Of Plan US PAT 9668026 , U.S. PTO Utility	May 30, 2017	Patents	---	---
---	67. PLAYBACK DEVICE CALIBRATION USER INTERFACES Out Of Plan US PAT 9668049 , U.S. PTO Utility	May 30, 2017	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	68. DISPLAY SCREEN PORTION WITH GRAPHICAL USER INTERFACE <small>Out Of Plan</small> US PAT D787532 , U.S. PTO Design	May 23, 2017	Patents	—	—
—	69. RESUMING SYNCHRONOUS PLAYBACK OF CONTENT <small>Out Of Plan</small> US PAT 9658820+ , U.S. PTO Utility	May 23, 2017	Patents	—	—
—	70. GROUP VOLUME CONTROL <small>Out Of Plan</small> US PAT 9654073 , U.S. PTO Utility	May 16, 2017	Patents	—	—
—	71. CLOUD QUEUE SYNCHRONIZATION PROTOCOL <small>Out Of Plan</small> US PAT 9654459 , U.S. PTO Utility	May 16, 2017	Patents	—	—
—	72. CLOUD QUEUE PLAYBACK POLICY <small>Out Of Plan</small> US PAT 9654536 , U.S. PTO Utility	May 16, 2017	Patents	—	—
—	73. GROUP COORDINATOR DEVICE SELECTION <small>Out Of Plan</small> US PAT 9654545 , U.S. PTO Utility	May 16, 2017	Patents	—	—
—	74. SYSTEMS AND METHODS FOR NETWORKED MUSIC PLAYBACK <small>Out Of Plan</small> US PAT 9654821 , U.S. PTO Utility	May 16, 2017	Patents	—	—
—	75. DISPLAY SCREEN OR PORTION THEREOF WITH GRAPHICAL USER INTERFACE <small>Out Of Plan</small> US PAT D786266 , U.S. PTO Design	May 09, 2017	Patents	—	—
—	76. MUSIC STREAMING USING SUPPORTED SERVICES <small>Out Of Plan</small> US PAT 9646085 , U.S. PTO Utility	May 09, 2017	Patents	—	—
—	77. CLOUD QUEUE ACCESS CONTROL <small>Out Of Plan</small> US PAT 9648070 , U.S. PTO Utility	May 09, 2017	Patents	—	—
—	78. CLOUD QUEUE PLAYHEAD <small>Out Of Plan</small> US PAT 9648071 , U.S. PTO Utility	May 09, 2017	Patents	—	—
—	79. CONCURRENT MULTI-LOUDSPEAKER CALIBRATION WITH A SINGLE MEASUREMENT <small>Out Of Plan</small> US PAT 9648422 , U.S. PTO Utility	May 09, 2017	Patents	—	—
—	80. DISPLAY SCREEN OR PORTION THEREOF GRAPHICAL USER INTERFACE <small>Out Of Plan</small> US PAT D785649 , U.S. PTO Design	May 02, 2017	Patents	—	—
—	81. DISPLAY SCREEN PORTION WITH ICON <small>Out Of Plan</small> US PAT D784404 , U.S. PTO Design	Apr. 18, 2017	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	82. WOODEN OR OTHER DIELECTRIC CAPACITIVE TOUCH INTERFACE AND LOUDSPEAKER HAVING SAME Out Of Plan US PAT 9628880 , U.S. PTO Utility	Apr. 18, 2017	Patents	---	---
—	83. USER FRIENDLY INTERFACE FOR CONTROL UNIT Out Of Plan US PAT 9612032 , U.S. PTO Utility	Apr. 04, 2017	Patents	---	---
—	84. MULTI-TRACK PLAYBACK OF MEDIA CONTENT DURING REPETITIVE MOTION ACTIVITIES Out Of Plan US PAT 9606620 , U.S. PTO Utility	Mar. 28, 2017	Patents	---	---
—	85. AUDIO SYSTEMS AND RELATED DEVICES AND METHODS Out Of Plan US PAT 9607083 , U.S. PTO Utility	Mar. 28, 2017	Patents	---	---
—	86. METHOD AND DEVICE FOR SHARING A PLAYLIST AT A DEDICATED MEDIA PLAYER DEVICE Out Of Plan US PAT 9584591 , U.S. PTO Utility	Feb. 28, 2017	Patents	---	---
—	87. HVAC CONTROLLER WITH USER-FRIENDLY INSTALLATION FEATURES WITH WIRE INSERTION DETECTION Out Of Plan US PAT 9575496 , U.S. PTO Utility	Feb. 21, 2017	Patents	---	---
—	88. OBTAINING CONTENT FROM MULTIPLE REMOTE SOURCES FOR PLAYBACK Out Of Plan US PAT 9569170+ , U.S. PTO Utility	Feb. 14, 2017	Patents	---	---
—	89. OBTAINING CONTENT FROM LOCAL AND REMOTE SOURCES FOR PLAYBACK Out Of Plan US PAT 9569171+ , U.S. PTO Utility	Feb. 14, 2017	Patents	---	---
—	90. RESUMING SYNCHRONOUS PLAYBACK OF CONTENT Out Of Plan US PAT 9569172+ , U.S. PTO Utility	Feb. 14, 2017	Patents	---	---
—	91. OBTAINING CONTENT FROM REMOTE SOURCE FOR PLAYBACK Out Of Plan US PAT 9563394+ , U.S. PTO Utility	Feb. 07, 2017	Patents	---	---
—	92. LOUDNESS MATCHING Out Of Plan US PAT 9564867 , U.S. PTO Utility	Feb. 07, 2017	Patents	---	---
—	93. AUDIO PROCESSING ALGORITHM DATABASE Out Of Plan US PAT 9557958 , U.S. PTO Utility	Jan. 31, 2017	Patents	---	---
—	94. GRAPHICAL USER INTERFACE FOR SETPOINT CREATION AND MODIFICATION Out Of Plan US PAT 9552002 , U.S. PTO Utility	Jan. 24, 2017	Patents	---	---
—	95. SYSTEMS AND METHODS FOR NETWORKED MUSIC PLAYBACK Out Of Plan US PAT 9554178 , U.S. PTO Utility	Jan. 24, 2017	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
---	96. WIRELESS SPEAKER FOR RECEIVING FROM A MOBILE PHONE DIRECTIONS TO RECEIVE AND RENDER A PLAYLIST FROM A CONTENT SERVER ON THE INTERNET Out Of Place US PAT 9554405 , U.S. PTO Utility	Jan. 24, 2017	Patents	---	---
---	97. METHODS AND APPARATUS TO LEARN AND SHARE REMOTE COMMANDS Out Of Place US PAT 9547298 , U.S. PTO Utility	Jan. 17, 2017	Patents	---	---
---	98. VOLUME LIMIT Out Of Place US PAT 9547469 , U.S. PTO Utility	Jan. 17, 2017	Patents	---	---
---	99. SPEAKER CALIBRATION USER INTERFACE Out Of Place US PAT 9547470 , U.S. PTO Utility	Jan. 17, 2017	Patents	---	---
---	100. GROUP COORDINATOR DEVICE SELECTION Out Of Place US PAT 9549020 , U.S. PTO Utility	Jan. 17, 2017	Patents	---	---
---	101. AUDIO OUTPUT BALANCING Out Of Place US PAT 9549258+ , U.S. PTO Utility	Jan. 17, 2017	Patents	---	---
---	102. BASE PROPERTIES IN A MEDIA PLAYBACK SYSTEM Out Of Place US PAT 9544701 , U.S. PTO Utility	Jan. 10, 2017	Patents	---	---
---	103. AUDIO OUTPUT BALANCING Out Of Place US PAT 9544707+ , U.S. PTO Utility	Jan. 10, 2017	Patents	---	---
---	104. DISPLAY SCREEN OR PORTION THEREOF WITH GRAPHICAL USER INTERFACE Out Of Place US PAT D775632 , U.S. PTO Design	Jan. 03, 2017	Patents	---	---
---	105. APPLICATION LAUNCH Out Of Place US PAT 9535986 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
---	106. ANTENNA SELECTION Out Of Place US PAT 9537213 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
---	107. FACILITATING THE RESOLUTION OF ADDRESS CONFLICTS IN A NETWORKED MEDIA PLAYBACK SYSTEM Out Of Place US PAT 9537819 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
---	108. CLOUD QUEUE ACCESS CONTROL Out Of Place US PAT 9537852 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
---	109. REPLACING MEDIA ITEM Out Of Place US PAT 9537915 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
---	110. SYSTEMS AND METHODS FOR NETWORKED MUSIC PLAYBACK Out Of Place US PAT 9538236 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	111. AUDIO SYNCHRONIZATION AMONG PLAYBACK DEVICES USING OFFSET INFORMATION <small>Out Of Plan</small> US PAT 9538300 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
—	112. CALIBRATION ERROR CONDITIONS <small>Out Of Plan</small> US PAT 9538305 , U.S. PTO Utility	Jan. 03, 2017	Patents	---	---
—	113. LOW-LATENCY AUDIO NETWORKING <small>Out Of Plan</small> US PAT 9529906 , U.S. PTO Utility	Dec. 27, 2016	Patents	---	---
—	114. METHODS AND SYSTEMS FOR SUBWOOFER CALIBRATION <small>Out Of Plan</small> US PAT 9524098 , U.S. PTO Utility	Dec. 20, 2016	Patents	---	---
—	115. PLAYBACK OF MEDIA CONTENT ACCORDING TO MEDIA PREFERENCES <small>Out Of Plan</small> US PAT 9524338 , U.S. PTO Utility	Dec. 20, 2016	Patents	---	---
—	116. CONTEXTUAL INDEXING OF MEDIA ITEMS <small>Out Of Plan</small> US PAT 9524339 , U.S. PTO Utility	Dec. 20, 2016	Patents	---	---
—	117. PLAYBACK BASED ON RECEIVED SOUND WAVES <small>Out Of Plan</small> US PAT 9525931 , U.S. PTO Utility	Dec. 20, 2016	Patents	---	---
—	118. LOCK SCREEN MEDIA PLAYBACK CONTROL <small>Out Of Plan</small> US PAT 9519413 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---
—	119. METHODS AND APPARATUS FOR DIRECT ROUTING BETWEEN NODES OF NETWORKS <small>Out Of Plan</small> US PAT 9521074 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---
—	120. SERVICE PROVIDER USER ACCOUNTS <small>Out Of Plan</small> US PAT 9521212 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---
—	121. ASSOCIATING PLAYBACK DEVICES WITH PLAYBACK QUEUES <small>Out Of Plan</small> US PAT 9521454 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---
—	122. CALIBRATION ADJUSTMENT BASED ON BARRIER <small>Out Of Plan</small> US PAT 9521487 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---
—	123. PLAYBACK DEVICE SETTING BASED ON DISTORTION <small>Out Of Plan</small> US PAT 9521488 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---
—	124. OPERATION USING POSITIONING INFORMATION <small>Out Of Plan</small> US PAT 9521489 , U.S. PTO Utility	Dec. 13, 2016	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
---	125. DEVICE BASE <small>Out Of Place</small> US PAT 9512954 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	126. MICROPHONE CALIBRATION <small>Out Of Place</small> US PAT 9513865 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	127. SOFTWARE APPLICATION AND ZONES <small>Out Of Place</small> US PAT 9513868 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	128. METHOD, DEVICE, AND SYSTEM FOR DIRECTING A WIRELESS SPEAKER FROM A MOBILE PHONE TO RECEIVE AND RENDER A PLAYLIST FROM A CONTENT SERVER ON THE INTERNET <small>Out Of Place</small> US PAT 9516370 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	129. PLAYBACK DEVICE SETTING ACCORDING TO THRESHOLD(S) <small>Out Of Place</small> US PAT 9516419 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	130. PROVIDING A MULTI-CHANNEL AND A MULTI- ZONE AUDIO ENVIRONMENT <small>Out Of Place</small> US PAT 9516440 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	131. INTELLIGENT AMPLIFIER ACTIVATION <small>Out Of Place</small> US PAT 9516441 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	132. MEDIA CONTENT BASED ON PLAYBACK ZONE AWARENESS <small>Out Of Place</small> US PAT 9516445 , U.S. PTO Utility	Dec. 06, 2016	Patents	---	---
---	133. DISPLAY SCREEN OR PORTION THEREOF WITH GRAPHICAL USER INTERFACE <small>Out Of Place</small> US PAT D772918 , U.S. PTO Design	Nov. 29, 2016	Patents	---	---
---	134. DEVICE PLAYBACK FAILURE RECOVERY AND REDISTRIBUTION <small>Out Of Place</small> US PAT 9507560 , U.S. PTO Utility	Nov. 29, 2016	Patents	---	---
---	135. SYSTEM AND METHOD FOR A MEDIA EXPERIENCE SOCIAL INTERFACE <small>Out Of Place</small> US PAT 9510055 , U.S. PTO Utility	Nov. 29, 2016	Patents	---	---
---	136. PRIVATE QUEUE FOR A MEDIA PLAYBACK SYSTEM <small>Out Of Place</small> US PAT 9501533 , U.S. PTO Utility	Nov. 22, 2016	Patents	---	---
---	137. PLAYLIST MODIFICATION <small>Out Of Place</small> US PAT 9495076 , U.S. PTO Utility	Nov. 15, 2016	Patents	---	---
---	138. CLOUD QUEUE ACCESS CONTROL <small>Out Of Place</small> US PAT 9497182 , U.S. PTO Utility	Nov. 15, 2016	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	139. USER INTERFACES FOR REMOTE MANAGEMENT AND CONTROL OF NETWORK-CONNECTED THERMOSTATS <small>Out Of Place</small> US PAT 9489062 , U.S. PTO Utility	Nov. 08, 2016	Patents	—	—
—	140. SYSTEM AND METHOD FOR PLAYBACK OF MEDIA CONTENT WITH AUDIO TOUCH MENU FUNCTIONALITY <small>Out Of Place</small> US PAT 9489113 , U.S. PTO Utility	Nov. 08, 2016	Patents	—	—
—	141. SYSTEM AND METHOD FOR PLAYBACK OF MEDIA CONTENT WITH SUPPORT FOR AUDIO TOUCH CACHING <small>Out Of Place</small> US PAT 9483166 , U.S. PTO Utility	Nov. 01, 2016	Patents	—	—
—	142. WEARABLE DEVICE ZONE GROUP CONTROL <small>Out Of Place</small> US PAT 9483230 , U.S. PTO Utility	Nov. 01, 2016	Patents	—	—
—	143. INCONSISTENT QUEUES <small>Out Of Place</small> US PAT 9485545 , U.S. PTO Utility	Nov. 01, 2016	Patents	—	—
—	144. HIGH-SPEED WAN TO WIRELESS LAN GATEWAY <small>Out Of Place</small> US PAT 9485804 , U.S. PTO Utility	Nov. 01, 2016	Patents	—	—
—	145. DISPLAY SCREEN OR PORTION THEREOF WITH SEQUENTIAL GRAPHICAL USER INTERFACE <small>Out Of Place</small> US PAT D769897 , U.S. PTO Design	Oct. 25, 2016	Patents	—	—
—	146. DYNAMIC DEVICE-ASSOCIATED FEEDBACK INDICATIVE OF RESPONSIBLE DEVICE USAGE <small>Out Of Place</small> US PAT 9476606 , U.S. PTO Utility	Oct. 25, 2016	Patents	—	—
—	147. CAPACITIVE PROXIMITY SENSOR CONFIGURATION INCLUDING A SPEAKER GRILLE <small>Out Of Place</small> US PAT 9477440 , U.S. PTO Utility	Oct. 25, 2016	Patents	—	—
—	148. MANAGEMENT OF MEDIA CONTENT PLAYBACK <small>Out Of Place</small> US PAT 9478247 , U.S. PTO Utility	Oct. 25, 2016	Patents	—	—
—	149. ZONE GROUP CONTROL <small>Out Of Place</small> US PAT 9467737 , U.S. PTO Utility	Oct. 11, 2016	Patents	—	—
—	150. SYSTEMS AND METHODS FOR ENERGY-EFFICIENT CONTROL OF AN ENERGY-CONSUMING SYSTEM <small>Out Of Place</small> US PAT 9459018 , U.S. PTO Utility	Oct. 04, 2016	Patents	—	—
—	151. SYSTEMS, METHODS, APPARATUS, AND ARTICLES OF MANUFACTURE FOR PLAYBACK DEMONSTRATION AT A POINT OF SALE DISPLAY <small>Out Of Place</small> US PAT 9460631 , U.S. PTO Utility	Oct. 04, 2016	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
---	152. QUEUE IDENTIFICATION <small>Out Of Place</small> US PAT 9460755 , U.S. PTO Utility	Oct. 04, 2016	Patents	---	---
---	153. METHODS AND GRAPHICAL USER INTERFACES FOR REPORTING PERFORMANCE INFORMATION FOR AN HVAC SYSTEM CONTROLLED BY A SELF- PROGRAMMING NETWORK-CONNECTED THERMOSTAT <small>Out Of Place</small> US PAT 9453655 , U.S. PTO Utility	Sep. 27, 2016	Patents	---	---
---	154. VOLUME INTERACTIONS FOR CONNECTED PLAYBACK DEVICES <small>Out Of Place</small> US PAT 9455679 , U.S. PTO Utility	Sep. 27, 2016	Patents	---	---
---	155. IDENTIFYING A USEFUL WIRED CONNECTION <small>Out Of Place</small> US PAT 9456037 , U.S. PTO Utility	Sep. 27, 2016	Patents	---	---
---	156. BRIDGE SYSTEM FOR AUXILIARY DISPLAY DEVICES <small>Out Of Place</small> US PAT 9448814 , U.S. PTO Utility	Sep. 20, 2016	Patents	---	---
---	157. SATELLITE VOLUME CONTROL <small>Out Of Place</small> US PAT 9438193 , U.S. PTO Utility	Sep. 06, 2016	Patents	---	---
---	158. PROXIMITY DETECTION USING AUDIO PULSE <small>Out Of Place</small> US PAT 9439021 , U.S. PTO Utility	Sep. 06, 2016	Patents	---	---
---	159. PLAYBACK DEVICE SPEAKER CONFIGURATION BASED ON PROXIMITY DETECTION <small>Out Of Place</small> US PAT 9439022 , U.S. PTO Utility	Sep. 06, 2016	Patents	---	---
---	160. STREAMING MUSIC USING AUTHENTICATION INFORMATION <small>Out Of Place</small> US PAT 9432365 , U.S. PTO Utility	Aug. 30, 2016	Patents	---	---
---	161. SYSTEM AND METHOD FOR BYPASSING AN ACCESS POINT IN A LOCAL AREA NETWORK FOR P2P DATA TRANSFERS <small>Out Of Place</small> US PAT 9433023 , U.S. PTO Utility	Aug. 30, 2016	Patents	---	---
---	162. SYSTEM AND METHOD FOR PLAYBACK OF MEDIA CONTENT WITH AUDIO SPINNER FUNCTIONALITY <small>Out Of Place</small> US PAT 9423998 , U.S. PTO Utility	Aug. 23, 2016	Patents	---	---
---	163. AUDIO SETTINGS BASED ON ENVIRONMENT <small>Out Of Place</small> US PAT 9419575 , U.S. PTO Utility	Aug. 16, 2016	Patents	---	---
---	164. PLAYBACK ZONE REPRESENTATIONS <small>Out Of Place</small> US PAT 9408008 , U.S. PTO Utility	Aug. 02, 2016	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	165. PLAYBACK ACCORDING TO PLAYBACK RESPONSIBILITY IN STEREO PAIR <small>Out Of Place</small> US PAT 9400632 , U.S. PTO Utility	July 26, 2016	Patents	—	—
—	166. DETECTION AND CONTROL OF MULTIMEDIA APPLICATIONS <small>Out Of Place</small> US PAT 9395871 , U.S. PTO Utility	July 19, 2016	Patents	—	—
—	167. GROUPING ZONES <small>Out Of Place</small> US PAT 9395877 , U.S. PTO Utility	July 19, 2016	Patents	—	—
—	168. METHODS AND APPARATUS TO MANAGE ZONES OF A MULTI-ZONE MEDIA PLAYBACK SYSTEM <small>Out Of Place</small> US PAT 9395878 , U.S. PTO Utility	July 19, 2016	Patents	—	—
—	169. AUDIO CONTENT AUDITIONING <small>Out Of Place</small> US PAT 9395950 , U.S. PTO Utility	July 19, 2016	Patents	—	—
—	170. AUDIO CONTENT AUDITIONING <small>Out Of Place</small> US PAT 9395951 , U.S. PTO Utility	July 19, 2016	Patents	—	—
—	171. NETWORK-ENABLED AUDIO DEVICE <small>Out Of Place</small> US PAT 9397627 , U.S. PTO Utility	July 19, 2016	Patents	—	—
—	172. UNGROUPING ZONES <small>Out Of Place</small> US PAT 9383896 , U.S. PTO Utility	July 05, 2016	Patents	—	—
—	173. VOLUME INTERACTIONS FOR CONNECTED PLAYBACK DEVICES <small>Out Of Place</small> US PAT 9379683 , U.S. PTO Utility	June 28, 2016	Patents	—	—
—	174. DISPLAY SCREEN PORTION WITH GRAPHICAL USER INTERFACE <small>Out Of Place</small> US PAT D759700 , U.S. PTO Design	June 21, 2016	Patents	—	—
—	175. MEDIA SYSTEM CONTROLLER INTERFACE <small>Out Of Place</small> US PAT 9372610 , U.S. PTO Utility	June 21, 2016	Patents	—	—
—	176. MEDIA PLAYBACK SYSTEM WITH GUEST ACCESS <small>Out Of Place</small> US PAT 9374607 , U.S. PTO Utility	June 21, 2016	Patents	—	—
—	177. AUDIO SYSTEM DISPLAY WITH GRAPHICAL USER INTERFACE <small>Out Of Place</small> US PAT D759069 , U.S. PTO Design	June 14, 2016	Patents	—	—
—	178. AUDIO SETTINGS <small>Out Of Place</small> US PAT 9367283 , U.S. PTO Utility	June 14, 2016	Patents	—	—
—	179. DETECTING IMPROPER POSITION OF A PLAYBACK DEVICE <small>Out Of Place</small> US PAT 9367611 , U.S. PTO Utility	June 14, 2016	Patents	—	—
—	180. AUDIO OUTPUT BALANCING <small>Out Of Place</small> US PAT 9369104 , U.S. PTO Utility	June 14, 2016	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	181. PLAYLIST UPDATE IN A MEDIA PLAYBACK SYSTEM <small>Out Of File</small> US PAT 9361371 , U.S. PTO Utility	June 07, 2016	Patents	—	—
—	182. CLOUD QUEUE ACCESS CONTROL <small>Out Of File</small> US PAT 9363254 , U.S. PTO Utility	June 07, 2016	Patents	—	—
—	183. CLOUD QUEUE PLAYHEAD <small>Out Of File</small> US PAT 9363255 , U.S. PTO Utility	June 07, 2016	Patents	—	—
—	184. AUDIO OUTPUT BALANCING <small>Out Of File</small> US PAT 9363601 , U.S. PTO Utility	June 07, 2016	Patents	—	—
—	185. METHOD AND APPARATUS FOR DYNAMIC CHANNELIZATION DEVICE SWITCHING IN A SYNCHRONY GROUP <small>Out Of File</small> US PAT 9354656 , U.S. PTO Utility	May 31, 2016	Patents	—	—
—	186. SYSTEM AND METHOD FOR ISSUING COMMANDS IN A MEDIA PLAYBACK SYSTEM <small>Out Of File</small> US PAT 9355555 , U.S. PTO Utility	May 31, 2016	Patents	—	—
—	187. SYSTEMS AND METHODS FOR SYNCHRONIZING OPERATIONS AMONG A PLURALITY OF INDEPENDENTLY CLOCKED DIGITAL DATA PROCESSING DEVICES WITHOUT A VOLTAGE CONTROLLED CRYSTAL OSCILLATOR <small>Out Of File</small> US PAT 9348354 , U.S. PTO Utility	May 24, 2016	Patents	—	—
—	188. DEVICE GROUP IDENTIFICATION <small>Out Of File</small> US PAT 9348824 , U.S. PTO Utility	May 24, 2016	Patents	—	—
—	189. METHOD AND APPARATUS FOR UPDATING ZONE CONFIGURATIONS IN A MULTI-ZONE SYSTEM <small>Out Of File</small> US PAT 9344206 , U.S. PTO Utility	May 17, 2016	Patents	—	—
—	190. SYSTEMS AND METHODS FOR PLAYER SETUP ROOM NAMES <small>Out Of File</small> US PAT 9344292 , U.S. PTO Utility	May 17, 2016	Patents	—	—
—	191. INDICATION OF BARRIER DETECTION <small>Out Of File</small> US PAT 9344829 , U.S. PTO Utility	May 17, 2016	Patents	—	—
—	192. ACCOUNT AWARE MEDIA PREFERENCES <small>Out Of File</small> US PAT 9338514 , U.S. PTO Utility	May 10, 2016	Patents	—	—
—	193. PLAYBACK EXPANSION <small>Out Of File</small> US PAT 9329831 , U.S. PTO Utility	May 03, 2016	Patents	—	—
—	194. PLAYBACK EXPANSION <small>Out Of File</small> US PAT 9330096 , U.S. PTO Utility	May 03, 2016	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	195. AUDIO SYSTEMS AND RELATED DEVICES AND METHODS Out Of Plan US PAT 9330169 , U.S. PTO Utility	May 03, 2016	Patents	—	—
—	196. MEDIA CONTENT REQUEST INCLUDING ZONE NAME Out Of Plan US PAT 9332348 , U.S. PTO Utility	May 03, 2016	Patents	—	—
—	197. CAPACITIVE PROXIMITY SENSOR CONFIGURATION INCLUDING AN ANTENNA GROUND PLANE Out Of Plan US PAT 9323404 , U.S. PTO Utility	Apr. 26, 2016	Patents	—	—
—	198. SYSTEM WITH SPEAKER, TRANSCEIVER AND RELATED DEVICES Out Of Plan US PAT 9326069 , U.S. PTO Utility	Apr. 26, 2016	Patents	—	—
—	199. MEDIA CONTENT BASED ON PLAYBACK ZONE AWARENESS Out Of Plan US PAT 9326070 , U.S. PTO Utility	Apr. 26, 2016	Patents	—	—
—	200. MEDIA CONTENT SUGGESTION BASED ON PLAYBACK ZONE AWARENESS Out Of Plan US PAT 9326071 , U.S. PTO Utility	Apr. 26, 2016	Patents	—	—
—	201. MOBILE SOURCE MEDIA CONTENT ACCESS Out Of Plan US PAT 9319153 , U.S. PTO Utility	Apr. 19, 2016	Patents	—	—
—	202. AUTOMATIC CONFIGURATION OF HOUSEHOLD PLAYBACK DEVICES Out Of Plan US PAT 9319409 , U.S. PTO Utility	Apr. 19, 2016	Patents	—	—
—	203. SYSTEMS AND METHODS FOR PRE-FETCHING MEDIA CONTENT Out Of Plan US PAT 9319445 , U.S. PTO Utility	Apr. 19, 2016	Patents	—	—
—	204. AUDIO SYNCHRONIZATION AMONG PLAYBACK DEVICES USING OFFSET INFORMATION Out Of Plan US PAT 9313591 , U.S. PTO Utility	Apr. 12, 2016	Patents	—	—
—	205. ENERGY EFFICIENCY PROMOTING SCHEDULE LEARNING ALGORITHMS FOR INTELLIGENT THERMOSTAT Out Of Plan US PAT 9298196 , U.S. PTO Utility	Mar. 29, 2016	Patents	—	—
—	206. COMMUNICATION ROUTES BASED ON LOW POWER OPERATION Out Of Plan US PAT 9298244 , U.S. PTO Utility	Mar. 29, 2016	Patents	—	—
—	207. SYSTEMS AND METHODS TO PROVIDE PLAY/PAUSE CONTENT Out Of Plan US PAT 9298415 , U.S. PTO Utility	Mar. 29, 2016	Patents	—	—
—	208. SOFTWARE APPLICATION AND ZONES Out Of Plan US PAT 9300647 , U.S. PTO Utility	Mar. 29, 2016	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	209. THERMOSTAT USER INTERFACE <small>Out Of Plan</small> US PAT 9291359 , U.S. PTO Utility	Mar. 22, 2016	Patents	—	—
—	210. METHODS AND SYSTEMS TO SHARE MEDIA <small>Out Of Plan</small> US PAT 9286384 , U.S. PTO Utility	Mar. 15, 2016	Patents	—	—
—	211. COORDINATOR DEVICE FOR PAIRED OR CONSOLIDATED PLAYERS <small>Out Of Plan</small> US PAT 9288596 , U.S. PTO Utility	Mar. 15, 2016	Patents	—	—
—	212. VOLUME CONTROL SYSTEM, CONTROLLER PROGRAM OF THE VOLUME CONTROL SYSTEM, AND AUDIO OUTPUT DEVICE OF THE VOLUME CONTROL SYSTEM <small>Out Of Plan</small> US PAT 9270243 , U.S. PTO Utility	Feb. 23, 2016	Patents	—	—
—	213. PLAYBACK DEVICE CONFIGURATION BASED ON PROXIMITY DETECTION <small>Out Of Plan</small> US PAT 9264839 , U.S. PTO Utility	Feb. 16, 2016	Patents	—	—
—	214. POWER DECREASE BASED ON PACKET TYPE <small>Out Of Plan</small> US PAT 9252721 , U.S. PTO Utility	Feb. 02, 2016	Patents	—	—
—	215. MEDIA PLAYBACK SYSTEM USING STANDBY MODE IN A MESH NETWORK <small>Out Of Plan</small> US PAT 9244516 , U.S. PTO Utility	Jan. 26, 2016	Patents	—	—
—	216. POWER INCREASE BASED ON PACKET TYPE <small>Out Of Plan</small> US PAT 9246442 , U.S. PTO Utility	Jan. 26, 2016	Patents	—	—
—	217. SYSTEMS, METHODS, AND USER INTERFACES FOR PREVIEWING MEDIA CONTENT <small>Out Of Plan</small> US PAT 9246967 , U.S. PTO Utility	Jan. 26, 2016	Patents	—	—
—	218. PLAYBACK QUEUE TRANSFER IN A MEDIA PLAYBACK SYSTEM <small>Out Of Plan</small> US PAT 9247363 , U.S. PTO Utility	Jan. 26, 2016	Patents	—	—
—	219. SYSTEMS AND METHODS FOR MULTI-NETWORK AUDIO CONTROL <small>Out Of Plan</small> US PAT 9247492 , U.S. PTO Utility	Jan. 26, 2016	Patents	—	—
—	220. MEDIA SYSTEM ACCESS VIA CELLULAR NETWORK <small>Out Of Plan</small> US PAT 9241355 , U.S. PTO Utility	Jan. 19, 2016	Patents	—	—
—	221. AUTOMATIC CONFIGURATION OF HOUSEHOLD PLAYBACK DEVICES <small>Out Of Plan</small> US PAT 9237384 , U.S. PTO Utility	Jan. 12, 2016	Patents	—	—
—	222. VOLUME ENHANCEMENTS IN A MULTI-ZONE MEDIA PLAYBACK SYSTEM <small>Out Of Plan</small> US PAT 9231545 , U.S. PTO Utility	Jan. 05, 2016	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
---	223. ASSOCIATING PLAYBACK DEVICES WITH PLAYBACK QUEUES Out Of Plan US PAT 9232277 , U.S. PTO Utility	Jan. 05, 2016	Patents	---	---
---	224. TOUCHSCREEN DEVICE USER INTERFACE FOR REMOTE CONTROL OF A THERMOSTAT Out Of Plan US PAT 9222693 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	225. USER FRIENDLY INTERFACE FOR CONTROL UNIT Out Of Plan US PAT 9223323 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	226. AMBIENT LIGHT PROXIMITY SENSING CONFIGURATION Out Of Plan US PAT 9223353 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	227. METHODS AND APPARATUS TO MANAGE ZONES OF A MULTI-ZONE MEDIA PLAYBACK SYSTEM Out Of Plan US PAT 9223490 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	228. METHODS AND APPARATUS TO MANAGE ZONES OF A MULTI-ZONE MEDIA PLAYBACK SYSTEM Out Of Plan US PAT 9223491 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	229. REMOTE STORAGE AND PROVISIONING OF LOCAL- MEDIA INDEX Out Of Plan US PAT 9223862 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	230. ENTERTAINMENT SYSTEM WITH SOURCELESS SELECTION OF NETWORKED AND NON-NETWORKED MEDIA CONTENT Out Of Plan US PAT 9225773 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	231. MEDIA CONTENT BASED ON PLAYBACK ZONE AWARENESS Out Of Plan US PAT 9226072 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	232. AUDIO OUTPUT BALANCING DURING SYNCHRONIZED PLAYBACK Out Of Plan US PAT 9226073 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	233. AUDIO OUTPUT BALANCING DURING SYNCHRONIZED PLAYBACK Out Of Plan US PAT 9226087 , U.S. PTO Utility	Dec. 29, 2015	Patents	---	---
---	234. SYSTEMS AND METHODS FOR CONTROLLING MEDIA PLAYERS IN A SYNCHRONY GROUP Out Of Plan US PAT 9218017 , U.S. PTO Utility	Dec. 22, 2015	Patents	---	---
---	235. AUDIO SETTINGS BASED ON ENVIRONMENT Out Of Plan US PAT 9219460 , U.S. PTO Utility	Dec. 22, 2015	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	236. MULTI-CHANNEL PAIRING IN A MEDIA SYSTEM <small>Out Of Plan</small> US PAT 9219959 , U.S. PTO Utility	Dec. 22, 2015	Patents	—	—
—	237. METHOD AND APPARATUS FOR SYNCHRONY GROUP CONTROL VIA ONE OR MORE INDEPENDENT CONTROLLERS <small>Out Of Plan</small> US PAT 9213356 , U.S. PTO Utility	Dec. 15, 2015	Patents	—	—
—	238. OBTAINING CONTENT FROM REMOTE SOURCE FOR PLAYBACK <small>Out Of Plan</small> US PAT 9213357 , U.S. PTO Utility	Dec. 15, 2015	Patents	—	—
—	239. OPERATION USING POSITIONING INFORMATION <small>Out Of Plan</small> US PAT 9213762 , U.S. PTO Utility	Dec. 15, 2015	Patents	—	—
—	240. METHOD AND APPARATUS FOR PROVIDING SYNCHRONY GROUP STATUS INFORMATION <small>Out Of Plan</small> US PAT 9207905 , U.S. PTO Utility	Dec. 08, 2015	Patents	—	—
—	241. CONTROLLING AND GROUPING IN A MULTI-ZONE MEDIA SYSTEM <small>Out Of Plan</small> US PAT 9202509 , U.S. PTO Utility	Dec. 01, 2015	Patents	—	—
—	242. SYSTEM AND METHOD FOR SYNCHRONIZING OPERATIONS AMONG A PLURALITY OF INDEPENDENTLY CLOCKED DIGITAL DATA PROCESSING DEVICES <small>Out Of Plan</small> US PAT 9195258 , U.S. PTO Utility	Nov. 24, 2015	Patents	—	—
—	243. METHOD AND APPARATUS TO RECEIVE, PLAY, AND PROVIDE AUDIO CONTENT IN A MULTI-ZONE SYSTEM <small>Out Of Plan</small> US PAT 9189010 , U.S. PTO Utility	Nov. 17, 2015	Patents	—	—
—	244. METHOD AND APPARATUS FOR PROVIDING AUDIO AND PLAYBACK TIMING INFORMATION TO A PLURALITY OF NETWORKED AUDIO DEVICES <small>Out Of Plan</small> US PAT 9189011 , U.S. PTO Utility	Nov. 17, 2015	Patents	—	—
—	245. SYSTEMS AND METHODS FOR CONNECTING AN AUDIO CONTROLLER TO A HIDDEN AUDIO NETWORK <small>Out Of Plan</small> US PAT 9191699 , U.S. PTO Utility	Nov. 17, 2015	Patents	—	—
—	246. SYSTEM AND METHOD FOR SYNCHRONIZING OPERATIONS AMONG A PLURALITY OF INDEPENDENTLY CLOCKED DIGITAL DATA PROCESSING DEVICES <small>Out Of Plan</small> US PAT 9182777 , U.S. PTO Utility	Nov. 10, 2015	Patents	—	—
—	247. STREAMING MUSIC USING AUTHENTICATION INFORMATION <small>Out Of Plan</small> US PAT 9185103 , U.S. PTO Utility	Nov. 10, 2015	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
---	248. THERMOSTAT USER INTERFACE <small>(Out Of Plan)</small> US PAT 9175871 , U.S. PTO Utility	Nov. 03, 2015	Patents	---	---
---	249. METHOD AND APPARATUS FOR CAUSING A DEVICE TO JOIN A SYNCHRONY GROUP <small>(Out Of Plan)</small> US PAT 9176519 , U.S. PTO Utility	Nov. 03, 2015	Patents	---	---
---	250. OBTAINING AND TRANSMITTING AUDIO <small>(Out Of Plan)</small> US PAT 9176520 , U.S. PTO Utility	Nov. 03, 2015	Patents	---	---
---	251. AUDIO SYSTEMS AND RELATED DEVICES AND METHODS <small>(Out Of Plan)</small> US PAT 9177052 , U.S. PTO Utility	Nov. 03, 2015	Patents	---	---
---	252. DEVICE DISCOVERY FOR DIGITAL ENTERTAINMENT NETWORK <small>(Out Of Plan)</small> US PAT 9178946 , U.S. PTO Utility	Nov. 03, 2015	Patents	---	---
---	253. METHODS AND APPARATUS FOR MULTICAST OPTIMIZATION <small>(Out Of Plan)</small> US PAT 9179197 , U.S. PTO Utility	Nov. 03, 2015	Patents	---	---
---	254. METHOD AND APPARATUS FOR PROVIDING SYNCHRONY GROUP STATUS INFORMATION <small>(Out Of Plan)</small> US PAT 9170600 , U.S. PTO Utility	Oct. 27, 2015	Patents	---	---
---	255. SYSTEM AND METHOD FOR SYNCHRONIZING OPERATIONS AMONG A PLURALITY OF INDEPENDENTLY CLOCKED DIGITAL DATA PROCESSING DEVICES <small>(Out Of Plan)</small> US PAT 9164531 , U.S. PTO Utility	Oct. 20, 2015	Patents	---	---
---	256. METHOD AND APPARATUS FOR DISPLAYING ZONES IN A MULTI-ZONE SYSTEM <small>(Out Of Plan)</small> US PAT 9164532 , U.S. PTO Utility	Oct. 20, 2015	Patents	---	---
---	257. METHOD AND APPARATUS FOR OBTAINING AUDIO CONTENT AND PROVIDING THE AUDIO CONTENT TO A PLURALITY OF AUDIO DEVICES IN A MULTI-ZONE SYSTEM <small>(Out Of Plan)</small> US PAT 9164533 , U.S. PTO Utility	Oct. 20, 2015	Patents	---	---
---	258. AUDIO SYSTEM <small>(Out Of Plan)</small> US PAT D740787 , U.S. PTO Design	Oct. 13, 2015	Patents	---	---
---	259. METHOD AND APPARATUS FOR SKIPPING TRACKS IN A MULTI-ZONE SYSTEM <small>(Out Of Plan)</small> US PAT 9158327 , U.S. PTO Utility	Oct. 13, 2015	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	260. USER INTERFACES FOR CONTROLLING AND MANIPULATING GROUPINGS IN A MULTI-ZONE MEDIA SYSTEM <small>Out Of Place</small> US PAT 9141645+ , U.S. PTO Utility	Sep. 22, 2015	Patents	---	---
—	261. MULTI-CHANNEL PAIRING IN A MEDIA SYSTEM <small>Out Of Place</small> US PAT 9143859 , U.S. PTO Utility	Sep. 22, 2015	Patents	---	---
—	262. SHIFT TO CORRESPONDING MEDIA IN A PLAYBACK QUEUE <small>Out Of Place</small> US PAT 9137564 , U.S. PTO Utility	Sep. 15, 2015	Patents	---	---
—	263. SYSTEM WITH SPEAKER, TRANSCEIVER AND RELATED DEVICES <small>Out Of Place</small> US PAT 9137602 , U.S. PTO Utility	Sep. 15, 2015	Patents	---	---
—	264. THERMOSTAT WITH RING-SHAPED CONTROL MEMBER <small>Out Of Place</small> US PAT 9127853 , U.S. PTO Utility	Sep. 08, 2015	Patents	---	---
—	265. ESTABLISHING A SECURE WIRELESS NETWORK WITH A MINIMUM HUMAN INTERVENTION <small>Out Of Place</small> US PAT 9130770 , U.S. PTO Utility	Sep. 08, 2015	Patents	---	---
—	266. ESTABLISHING A SECURE WIRELESS NETWORK WITH MINIMUM HUMAN INTERVENTION <small>Out Of Place</small> US PAT 9130771 , U.S. PTO Utility	Sep. 08, 2015	Patents	---	---
—	267. CAPACITIVE PROXIMITY SENSOR CONFIGURATION INCLUDING A SPEAKER GRILLE <small>Out Of Place</small> US PAT 9122451 , U.S. PTO Utility	Sep. 01, 2015	Patents	---	---
—	268. TEMPERATURE CONTROLLER WITH MODEL-BASED TIME TO TARGET CALCULATION AND DISPLAY <small>Out Of Place</small> US PAT 9104211 , U.S. PTO Utility	Aug. 11, 2015	Patents	---	---
—	269. SYSTEM AND METHOD FOR DEVICE PLAYBACK CALIBRATION <small>Out Of Place</small> US PAT 9106192 , U.S. PTO Utility	Aug. 11, 2015	Patents	---	---
—	270. HVAC CONTROLLER WITH USER-FRIENDLY INSTALLATION FEATURES WITH WIRE INSERTION DETECTION <small>Out Of Place</small> US PAT 9092039 , U.S. PTO Utility	July 28, 2015	Patents	---	---
—	271. SYSTEMS AND METHODS FOR WIRELESS MUSIC PLAYBACK <small>Out Of Place</small> US PAT 9094706 , U.S. PTO Utility	July 28, 2015	Patents	---	---
—	272. SOUND FIELD CALIBRATION USING LISTENER LOCALIZATION <small>Out Of Place</small> US PAT 9084058 , U.S. PTO Utility	July 14, 2015	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	273. AUDIO CONTENT PLAYBACK MANAGEMENT <small>Out Of Place</small> US PAT 9078010 , U.S. PTO Utility	July 07, 2015	Patents	—	—
—	274. METHODS AND APPARATUS TO MANAGE ZONES OF A MULTI-ZONE MEDIA PLAYBACK SYSTEM <small>Out Of Place</small> US PAT 9052810 , U.S. PTO Utility	June 09, 2015	Patents	—	—
—	275. SHAPING SOUND RESPONSIVE TO SPEAKER ORIENTATION <small>Out Of Place</small> US PAT 9042556 , U.S. PTO Utility	May 26, 2015	Patents	—	—
—	276. SMART AUDIO SETTINGS <small>Out Of Place</small> US PAT 9031244 , U.S. PTO Utility	May 12, 2015	Patents	—	—
—	277. THERMOSTAT USER INTERFACE <small>Out Of Place</small> US PAT 9026232 , U.S. PTO Utility	May 05, 2015	Patents	—	—
—	278. MULTI-CHANNEL PAIRING IN A MEDIA SYSTEM <small>Out Of Place</small> US PAT 9014834 , U.S. PTO Utility	Apr. 21, 2015	Patents	—	—
—	279. CROSSOVER FREQUENCY ADJUSTMENTS FOR AUDIO SPEAKERS <small>Out Of Place</small> US PAT 9008330 , U.S. PTO Utility	Apr. 14, 2015	Patents	—	—
—	280. ROUND THERMOSTAT WITH FLANGED ROTATABLE USER INPUT MEMBER AND WALL-FACING OPTICAL SENSOR THAT SENSES ROTATION <small>Out Of Place</small> US PAT 8998102 , U.S. PTO Utility	Apr. 07, 2015	Patents	—	—
—	281. PLAYBACK USING POSITIONING INFORMATION <small>Out Of Place</small> US PAT 8995240 , U.S. PTO Utility	Mar. 31, 2015	Patents	—	—
—	282. VOLUME INTERACTIONS FOR CONNECTED PLAYBACK DEVICES <small>Out Of Place</small> US PAT 8995687 , U.S. PTO Utility	Mar. 31, 2015	Patents	—	—
—	283. ACOUSTIC OPTIMIZATION <small>Out Of Place</small> US PAT 8965033 , U.S. PTO Utility	Feb. 24, 2015	Patents	—	—
—	284. SYSTEMS AND METHODS FOR PROVIDING ZONE FUNCTIONALITY IN NETWORKED MEDIA SYSTEMS <small>Out Of Place</small> US PAT 8965544 , U.S. PTO Utility	Feb. 24, 2015	Patents	—	—
—	285. SOUND OUTPUT SETTING APPARATUS, METHOD, AND COMPUTER-EXECUTABLE PROGRAM <small>Out Of Place</small> US PAT 8966365 , U.S. PTO Utility	Feb. 24, 2015	Patents	—	—
—	286. DISPLAY SCREEN PORTION WITH GRAPHICAL USER INTERFACE <small>Out Of Place</small> US PAT D722614 , U.S. PTO Design	Feb. 17, 2015	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
---	287. REMOTE CONTROL <small>Out Of Plan</small> US PAT D722306 , U.S. PTO Design	Feb. 10, 2015	Patents	---	---
---	288. SYSTEMS AND METHODS FOR SYNCHRONIZING OPERATIONS AMONG A PLURALITY OF INDEPENDENTLY CLOCKED DIGITAL DATA PROCESSING DEVICES WITHOUT A VOLTAGE CONTROLLED CRYSTAL OSCILLATOR <small>Out Of Plan</small> US PAT 8938637 , U.S. PTO Utility	Jan. 20, 2015	Patents	---	---
---	289. CONTROLLING AND MANIPULATING GROUPINGS IN A MULTI-ZONE MEDIA SYSTEM <small>Out Of Plan</small> US PAT 8934997 , U.S. PTO Utility	Jan. 13, 2015	Patents	---	---
---	290. ACOUSTIC SIGNATURES IN A PLAYBACK SYSTEM <small>Out Of Plan</small> US PAT 8930005 , U.S. PTO Utility	Jan. 06, 2015	Patents	---	---
---	291. METHOD AND APPARATUS FOR ADJUSTING A SPEAKER SYSTEM <small>Out Of Plan</small> US PAT 8923997 , U.S. PTO Utility	Dec. 30, 2014	Patents	---	---
---	292. USER FRIENDLY INTERFACE FOR CONTROL UNIT <small>Out Of Plan</small> US PAT 8918219 , U.S. PTO Utility	Dec. 23, 2014	Patents	---	---
---	293. ASSISTED REGISTRATION OF AUDIO SOURCES <small>Out Of Plan</small> US PAT 8910265 , U.S. PTO Utility	Dec. 09, 2014	Patents	---	---
---	294. METHOD AND APPARATUS FOR SELECTING A PLAYBACK QUEUE IN A MULTI-ZONE SYSTEM <small>Out Of Plan</small> US PAT 8886347 , U.S. PTO Utility	Nov. 11, 2014	Patents	---	---
---	295. DYNAMIC DEVICE-ASSOCIATED FEEDBACK INDICATIVE OF RESPONSIBLE DEVICE USAGE <small>Out Of Plan</small> US PAT 8850348 , U.S. PTO Utility	Sep. 30, 2014	Patents	---	---
---	296. METHOD AND APPARATUS FOR ACCESSING MEDIA CONTENT VIA METADATA <small>Out Of Plan</small> US PAT 8843092 , U.S. PTO Utility	Sep. 23, 2014	Patents	---	---
---	297. METHOD AND APPARATUS FOR UPDATING ZONE CONFIGURATIONS IN A MULTI-ZONE SYSTEM <small>Out Of Plan</small> US PAT 8843228 , U.S. PTO Utility	Sep. 23, 2014	Patents	---	---
---	298. SYSTEM AND METHOD FOR PLAYING MEDIA <small>Out Of Plan</small> US PAT 8819554 , U.S. PTO Utility	Aug. 26, 2014	Patents	---	---
---	299. MULTI-CHANNEL PAIRING IN A MEDIA SYSTEM <small>Out Of Plan</small> US PAT 8788080 , U.S. PTO Utility	July 22, 2014	Patents	---	---

Treatment	Title	Date	Type	Depth	Headnote(s)
—	300. SYSTEM AND METHOD FOR INTEGRATING SENSORS IN THERMOSTATS <small>(Out Of Plan)</small> US PAT 8727611 , U.S. PTO Utility	May 20, 2014	Patents	—	—
—	301. MULTI-MODE MEDIA DEVICE USING METADATA TO ACCESS MEDIA CONTENT <small>(Out Of Plan)</small> US PAT 8725063 , U.S. PTO Utility	May 13, 2014	Patents	—	—
—	302. ACTIVE PLAYLIST HAVING DYNAMIC MEDIA ITEM GROUPS <small>(Out Of Plan)</small> US PAT 8725740 , U.S. PTO Utility	May 13, 2014	Patents	—	—
—	303. THERMOSTAT USER INTERFACE <small>(Out Of Plan)</small> US PAT 8706270 , U.S. PTO Utility	Apr. 22, 2014	Patents	—	—
—	304. SYSTEM AND METHOD FOR MONITORING/CONTROLLING A SOUND MASKING SYSTEM FROM AN ELECTRONIC FLOORPLAN <small>(Out Of Plan)</small> US PAT 8666086 , U.S. PTO Utility	Mar. 04, 2014	Patents	—	—
—	305. ENTERTAINMENT SYSTEM WITH SOURCELESS SELECTION INCLUDING PLAYLISTS <small>(Out Of Plan)</small> US PAT 8655303 , U.S. PTO Utility	Feb. 18, 2014	Patents	—	—
—	306. DISPLAY SCREEN OR PORTION THEREOF WITH A GRAPHICAL USER INTERFACE <small>(Out Of Plan)</small> US PAT D696677 , U.S. PTO Design	Dec. 31, 2013	Patents	—	—
—	307. METHOD AND APPARATUS FOR ADJUSTING VOLUME LEVELS IN A MULTI-ZONE SYSTEM <small>(Out Of Plan)</small> US PAT 8588949+ , U.S. PTO Utility	Nov. 19, 2013	Patents	—	—
—	308. ELECTRICAL AND MECHANICAL CONNECTOR ADAPTOR SYSTEM FOR MEDIA DEVICES <small>(Out Of Plan)</small> US PAT 8355690 , U.S. PTO Utility	Jan. 15, 2013	Patents	—	—
—	309. AUDIO SIGNAL PROCESSING SYSTEM <small>(Out Of Plan)</small> US PAT 8352053 , U.S. PTO Utility	Jan. 08, 2013	Patents	—	—
—	310. USER INTERFACES FOR CONTROLLING AND MANIPULATING GROUPINGS IN A MULTI-ZONE MEDIA SYSTEM <small>(Out Of Plan)</small> US PAT 8290603+ , U.S. PTO Utility	Oct. 16, 2012	Patents	—	—
—	311. AUDIO RELATED SYSTEM COMMUNICATION PROTOCOL <small>(Out Of Plan)</small> US PAT 8249071 , U.S. PTO Utility	Aug. 21, 2012	Patents	—	—
—	312. SYSTEM AND METHOD FOR SHARING PLAYLISTS <small>(Out Of Plan)</small> US PAT 8230099 , U.S. PTO Utility	July 24, 2012	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	313. ENTERTAINMENT SYSTEM WITH BANDLESS CONTENT SELECTION <small>Out Of Plan</small> US PAT 8195114 , U.S. PTO Utility	June 05, 2012	Patents	—	—
—	314. DISPLAY SCREEN PORTION WITH USER INTERFACE <small>Out Of Plan</small> US PAT D660313 , U.S. PTO Design	May 22, 2012	Patents	—	—
—	315. ENTERTAINMENT SYSTEM WITH UNIFIED CONTENT SELECTION <small>Out Of Plan</small> US PAT 8090309 , U.S. PTO Utility	Jan. 03, 2012	Patents	—	—
—	316. SYSTEM FOR NODE STRUCTURE DISCOVERY IN AN AUDIO-RELATED SYSTEM <small>Out Of Plan</small> US PAT 8078298 , U.S. PTO Utility	Dec. 13, 2011	Patents	—	—
—	317. APPARATUS AND METHOD TO FACILITATE UNIVERSAL REMOTE CONTROL <small>Out Of Plan</small> US PAT 8054211 , U.S. PTO Utility	Nov. 08, 2011	Patents	—	—
—	318. OBTAINING A PLAYLIST BASED ON USER PROFILE MATCHING <small>Out Of Plan</small> US PAT 8028038 , U.S. PTO Utility	Sep. 27, 2011	Patents	—	—
—	319. METHOD AND SYSTEM FOR EMPLOYING A FIRST DEVICE TO DIRECT A NETWORKED AUDIO DEVICE TO OBTAIN A MEDIA ITEM <small>Out Of Plan</small> US PAT 8028323 , U.S. PTO Utility	Sep. 27, 2011	Patents	—	—
—	320. SYSTEM FOR AUDIO RELATED EQUIPMENT MANAGEMENT <small>Out Of Plan</small> US PAT 7742606 , U.S. PTO Utility	June 22, 2010	Patents	—	—
—	321. AUDIO-RELATED SYSTEM NODE INSTANTIATION <small>Out Of Plan</small> US PAT 7725826 , U.S. PTO Utility	May 25, 2010	Patents	—	—
—	322. SYSTEM FOR AUDIO-RELATED DEVICE COMMUNICATION <small>Out Of Plan</small> US PAT 7689305 , U.S. PTO Utility	Mar. 30, 2010	Patents	—	—
—	323. ADJUSTING VOLUME LEVELS <small>Out Of Plan</small> US PAT APP 20160357502+ , U.S. PTO Application	Dec. 08, 2016	Patents	—	—
—	324. PLAYBACK DEVICE GROUPING <small>Out Of Plan</small> US PAT APP 20160241983+ , U.S. PTO Application	Aug. 18, 2016	Patents	—	—
—	325. GROUP VOLUME CONTROL <small>Out Of Plan</small> US PAT APP 20160021479+ , U.S. PTO Application	Jan. 21, 2016	Patents	—	—
—	326. CONTROLLING AND DISPLAYING ZONES IN A MULTI-ZONE SYSTEM <small>Out Of Plan</small> US PAT APP 20140181658 , U.S. PTO Application	June 26, 2014	Patents	—	—

Treatment	Title	Date	Type	Depth	Headnote(s)
—	327. USER INTERFACES FOR CONTROLLING AND MANIPULATING GROUPINGS IN A MULTI-ZONE MEDIA SYSTEM <small>Out Of Plan</small> US PAT APP 20130014015 , U.S. PTO Application	Jan. 10, 2013	Patents	—	—
—	328. A fully wireless high-fidelity audio system <small>Out Of Plan</small> CN PAT 204669601 U (HUM)	Sep. 23, 2015	Patents	—	—
—	329. MULTI-CHANNEL PAIRING IN A MEDIA SYSTEM <small>Out Of Plan</small> EP PAT 2695400 B1	June 08, 2016	Patents	—	—
—	330. The program of the controller of a sound volume control system and a sound volume control system, and the audio/voice output apparatus of a sound volume control system <small>Out Of Plan</small> JP PAT 5505402 B2 (MAT)	May 28, 2014	Patents	—	—
—	331. A computer-readable program and a volume level operating device <small>Out Of Plan</small> JP PAT APP 2016111554 A (MAT)	June 20, 2016	Patents	—	—
—	332. Content relay apparatus <small>Out Of Plan</small> JP PAT APP 2014096737 A (MAT)	May 22, 2014	Patents	—	—
—	333. Digital audio device <small>Out Of Plan</small> GB PAT APP 2491159 A	Nov. 28, 2012	Patents	—	—
—	334. WORTH NOTING-OTHER IP LAW DEVELOPMENTS <small>Out Of Plan</small>	2017	Other Secondary Source	—	—

US District Court Civil Docket

U.S. District - Delaware
(Wilmington)

1:14cv1330**Sonos Inc. v. D&M Holdings Inc. et al**

This case was retrieved from the court on Tuesday, July 11, 2017

Date Filed: 10/21/2014	Class Code: OPEN
Assigned To: Judge Richard G. Andrews	Closed:
Referred To:	Statute: 35:271
Nature of suit: Patent (830)	Jury Demand: Plaintiff
Cause: Patent Infringement	Demand Amount: \$0
Lead Docket: None	NOS Description: Patent
Other Docket: 1:16cv00141	
Jurisdiction: Federal Question	

Litigants

Sonos Inc.
Plaintiff

Attorneys

Philip A. Rovner
LEAD ATTORNEY; ATTORNEY TO BE NOTICED
Potter Anderson & Corroon, LLP
1313 N. Market St., Hercules Plaza, 6th Flr.
P.O. Box 951
Wilmington, DE 19899-0951
USA
(302) 984-6000
Email: Provner@potteranderson.Com

George I. Lee
PRO HAC VICE; ATTORNEY TO BE NOTICED
Email: Lee@ls3ip.Com

John D. Smith, III
PRO HAC VICE; ATTORNEY TO BE NOTICED
Email: Smith@ls3ip.Com

Jonathan A. Choa
ATTORNEY TO BE NOTICED
Potter Anderson & Corroon, LLP
1313 N. Market St., Hercules Plaza, 6th Flr.
P.O. Box 951
Wilmington, DE 19899-0951
USA
302-984-6189
Email: Jchoa@potteranderson.Com

D&M Holdings Inc.
doing business as
D+M Group
Defendant

Michael P. Boyea
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Boyea@ls3ip.Com

Rory P. Shea
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Shea@ls3ip.Com

Sean M. Sullivan
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Sullivan@ls3ip.Com

Christopher J. Rourke
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Crouk@jw.Com

Matthew C. Acosta
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Macosta@jw.Com

Michael J. Flynn
ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
USA
302-351-9661
Fax: 302-498-6217
Email: Mflynn@mnat.Com

Wasif Qureshi
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Wqureshi@jw.Com

D&M Holdings U.S. Inc.
Defendant

Jack B. Blumenfeld
LEAD ATTORNEY; ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
USA
(302) 658-9200
Email: Jbbefiling@mnat.Com

Blake T. Dietrich
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Bdietrich@jw.Com

Christopher J. Rourke
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Crouk@jw.Com

John M. Jackson
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Jjackson@jw.Com

Michael J. Flynn
ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
USA
302-351-9661
Fax: 302-498-6217
Email: Mflynn@mnat.Com

Wasif Qureshi
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Wqureshi@jw.Com

Denon Electronics (Usa) Llc
Defendant

Jack B. Blumenfeld
LEAD ATTORNEY; ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
USA
(302) 658-9200
Email: Jbbefiling@mnat.Com

Christopher J. Rourk
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Crourk@jw.Com

Michael J. Flynn
ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
USA
302-351-9661
Fax: 302-498-6217
Email: Mflynn@mnat.Com

Wasif Qureshi
PRO HAC VICE; ATTORNEY TO BE NOTICED

Email: Wqureshi@jw.Com

D&M Holdings U.S. Inc.
Counter Claimant

Jack B. Blumenfeld
LEAD ATTORNEY; ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
USA

(302) 658-9200
Email:Jbbefiling@mnat.Com

Blake T. Dietrich
ATTORNEY TO BE NOTICED

Email:Bdietrich@jw.Com

John M. Jackson
ATTORNEY TO BE NOTICED

Email:Jjackson@jw.Com

Michael J. Flynn
ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington , DE 19899
USA
302-351-9661
Fax: 302-498-6217
Email:Mflynn@mnat.Com

D&M Holdings Inc.
Counter Claimant

Michael J. Flynn
ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington , DE 19899
USA
302-351-9661
Fax: 302-498-6217
Email:Mflynn@mnat.Com

Denon Electronics (Usa) Llc
Counter Claimant

Jack B. Blumenfeld
LEAD ATTORNEY;ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington , DE 19899
USA
(302) 658-9200
Email:Jbbefiling@mnat.Com

Michael J. Flynn
ATTORNEY TO BE NOTICED
Morris, Nichols, Arsht & Tunnell LLP
1201 North Market Street
P.O. Box 1347
Wilmington , DE 19899
USA
302-351-9661
Fax: 302-498-6217
Email:Mflynn@mnat.Com

Sonos Inc.
Counter Defendant

Philip A. Rovner
LEAD ATTORNEY;ATTORNEY TO BE NOTICED
Potter Anderson & Corroon, LLP
1313 N. Market St., Hercules Plaza, 6th Flr.

P.O. Box 951
 Wilmington , DE 19899-0951
 USA
 (302) 984-6000
 Email:Provner@potteranderson.Com

George I. Lee
 PRO HAC VICE;ATTORNEY TO BE NOTICED

Email:Lee@ls3ip.Com

John D. Smith , III
 PRO HAC VICE;ATTORNEY TO BE NOTICED

Email:Smith@ls3ip.Com

Jonathan A. Choa
 ATTORNEY TO BE NOTICED
 Potter Anderson & Corroon, LLP
 1313 N. Market St., Hercules Plaza, 6th Flr.
 P.O. Box 951
 Wilmington , DE 19899-0951
 USA
 302-984-6189
 Email:Jchoa@potteranderson.Com

Michael P. Boyea
 ATTORNEY TO BE NOTICED

Email:Boyea@ls3ip.Com

Rory P. Shea
 PRO HAC VICE;ATTORNEY TO BE NOTICED

Email:Shea@ls3ip.Com

Sean M. Sullivan
 PRO HAC VICE;ATTORNEY TO BE NOTICED

Email:Sullivan@ls3ip.Com

Date	#	Proceeding Text	Source
10/21/2014	1	COMPLAINT FOR PATENT INFRINGEMENT - filed with Jury Demand against D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC - Magistrate Consent Notice to Pltf. (Filing fee \$ 400.00, receipt number 0311-1611477.) - filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online, # 7 Online, # 8 Online (Entered: 10/21/2014)	
10/21/2014	2	Notice, Consent and Referral forms re: U.S. Magistrate Judge jurisdiction. (etg,) (Entered: 10/21/2014)	
10/21/2014	3	Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) U.S. 8,788,080 B1; U.S. 7,571,014 B1; U.S. 8,588,949 B2; U.S. D559,197 S. (etg,) (Entered: 10/21/2014)	
10/21/2014	4	Disclosure Statement pursuant to Rule 7.1: No Parents or Affiliates Listed filed by Sonos Inc. (etg,) (Entered: 10/21/2014)	
10/21/2014		No Summons Issued. (etg,) (Entered: 10/21/2014)	
10/29/2014			

- Case Assigned to Judge Richard G. Andrews. Please include the initials of the Judge (RGA) after the case number on all documents filed. (rjb) (Entered: 10/29/2014)
- 11/19/2014 5 NOTICE of withdrawal of McDonnell Boehnen Hulbert & Berghoff LLP as counsel for plaintiff by Sonos Inc. re 1 Complaint, (Rovner, Philip) (Entered: 11/19/2014)
- 12/17/2014 Summons Issued with Magistrate Consent Notice attached as to D&M Holdings U.S. Inc. on 12/17/2014; Denon Electronics (USA) LLC on 12/17/2014. (rbe) (Entered: 12/17/2014)
- 12/17/2014 6 FIRST Amended Complaint For Patent Infringement against All Defendants - filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online, # 7 Online, # 8 Online, # 9 Online (Entered: 12/17/2014)
- 12/17/2014 7 Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) US 7,792,311 B1; US 7,805,682 B1; . (Rovner, Philip) (Entered: 12/17/2014)
- 12/18/2014 8 SUMMONS Returned Executed by Sonos Inc.. Denon Electronics (USA) LLC served on 12/18/2014, answer due 1/8/2015. (Rovner, Philip) (Entered: 12/18/2014)
- 12/18/2014 9 SUMMONS Returned Executed by Sonos Inc.. D&M Holdings U.S. Inc. served on 12/18/2014, answer due 1/8/2015. (Rovner, Philip) (Entered: 12/18/2014)
- 12/22/2014 Summons Issued with Magistrate Consent Notice attached as to D&M Holdings Inc. on 12/22/2014. (rwc) (Entered: 12/22/2014)
- 12/22/2014 10 PRAECIPE filed by Philip A. Rovner on behalf of Sonos Inc. requesting Clerk to issue Rule 4(f)(2)(C)(ii) service for D&M Holdings Inc. d/b/a The D+M Group. (Rovner, Philip) Modified on 12/23/2014 (nms). (Entered: 12/22/2014)
- 12/22/2014 11 AFFIDAVIT of Philip A. Rovner re 10 Praecipe re service on D&M Holdings Inc. d/b/a The D+M Group, filed by Sonos Inc.. (Rovner, Philip) Modified on 12/22/2014 (nms). (Entered: 12/22/2014)
- 12/23/2014 12 Postal Receipt(s) for the mailing of process to D&M Holdings Inc. (aah) (Entered: 12/23/2014)
- 12/24/2014 13 MOTION for Pro Hac Vice Appearance of Attorney John M. Jackson of Jackson Walker, LLP - filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Blumenfeld, Jack) Modified on 1/4/2015 (nms). (Entered: 12/24/2014)
- 01/02/2015 14 STIPULATION TO EXTEND TIME for Defendants D&M Holdings U.S. Inc. and Denon Electronics (USA), LLC to Respond to Complaint to February 9, 2015 - filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Blumenfeld, Jack) (Entered: 01/02/2015)
- 01/04/2015 SO ORDERED, re 13 MOTION for Pro Hac Vice Appearance of Attorney John M. Jackson of JACKSON WALKER, LLP filed by Denon Electronics (USA) LLC, D&M Holdings U.S. Inc.. Signed by Judge Richard G. Andrews on 1/4/2015. (nms) (Entered: 01/04/2015)
- 01/05/2015 SO ORDERED, re 14 STIPULATION TO EXTEND TIME for Defendants D&M Holdings U.S. Inc. and Denon Electronics (USA), LLC to Respond to Complaint to February 9, 2015, filed by Denon Electronics (USA) LLC, D&M Holdings U.S. Inc.(Reset Answer Deadlines: D&M Holdings U.S. Inc. answer due 2/9/2015; Denon Electronics (USA) LLC answer due 2/9/2015). Signed by Judge Richard G. Andrews on 1/5/2015. (nms) (Entered: 01/05/2015)
- 01/06/2015 Pro Hac Vice Attorney John M. Jackson for D&M Holdings U.S. Inc. added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware

- counsel shall be the registered users of CM/ECF and shall be required to file all papers. (rbe) (Entered: 01/06/2015)
- 01/26/2015 15 MOTION for Pro Hac Vice Appearance of Attorney George I. Lee, Esq., Sean M. Sullivan, Esq., Rory P. Shea, Esq., John Dan Smith, III, Esq. - filed by Sonos Inc.. (Rovner, Philip) (Entered: 01/26/2015)
- 01/26/2015 SO ORDERED, re 15 MOTION for Pro Hac Vice Appearance of Attorney George I. Lee, Esq., Sean M. Sullivan, Esq., Rory P. Shea, Esq., John Dan Smith, III, Esq. filed by Sonos Inc.. Signed by Judge Richard G. Andrews on 1/26/2015. (nms) (Entered: 01/26/2015)
- 01/29/2015 Pro Hac Vice Attorney George I. Lee, Sean M. Sullivan, Rory P. Shea, John D. Smith, III for Sonos Inc. added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (dmp,) (Entered: 01/29/2015)
- 02/09/2015 16 MOTION to Dismiss - filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Blumenfeld, Jack) (Entered: 02/09/2015)
- 02/09/2015 17 OPENING BRIEF in Support re 16 MOTION to Dismiss, filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. Answering Brief/Response due date per Local Rules is 2/26/2015. (Blumenfeld, Jack) Modified on 2/9/2015 (nms). (Entered: 02/09/2015)
- 02/09/2015 18 Disclosure Statement pursuant to Rule 7.1: identifying Corporate Parent D&M Holdings Inc. for D&M Holdings U.S. Inc., Denon Electronics (USA) LLC filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Blumenfeld, Jack) (Entered: 02/09/2015)
- 02/13/2015 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto - filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 2/13/2015 (nms). (Entered: 02/13/2015)
- 02/13/2015 20 [SEALED] OPENING BRIEF in Support re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. Answering Brief/Response due date per Local Rules is 3/2/2015. (Flynn, Michael) (Entered: 02/13/2015)
- 02/13/2015 21 [SEALED] DECLARATION re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 02/13/2015)
- 02/13/2015 22 DECLARATION re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 02/13/2015)
- 02/13/2015 23 [SEALED] DECLARATION re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 02/13/2015)
- 02/17/2015 24 REDACTED VERSION of 20 Opening Brief in Support, by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 2/18/2015 (nms). (Entered: 02/17/2015)
- 02/17/2015 25 REDACTED VERSION of 21 Declaration of Blake DeSimone, by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 02/17/2015)

- 02/17/2015 26 REDACTED VERSION of 23 Declaration of David Meisels, by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 02/17/2015))
- 02/23/2015 27 STIPULATION TO EXTEND TIME time to file opposition to Motion to Disqualify and time for defendants to file reply brief to motion to disqualify (D.I. 19) to March 16, 2015 and April 2, 2015 - filed by Sonos Inc.. (Rovner, Philip) Modified on 2/24/2015 (nms). (Entered: 02/23/2015)
- 02/24/2015 SO ORDERED, re 27 STIPULATION TO EXTEND TIME time for plaintiff to file opposition to Motion to Disqualify and time for defendants to file reply brief to Motion to Disqualify (D.I. 19) to March 16, 2015, and April 2, 2015, filed by Sonos Inc. (Reset Briefing Schedule: re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto. Answering Brief due 3/16/2015, Reply Brief due 4/2/2015). Signed by Judge Richard G. Andrews on 2/24/2015. (nms) (Entered: 02/24/2015)
- 02/26/2015 28 ANSWERING BRIEF in Opposition re 16 MOTION to Dismiss, filed by Sonos Inc..Reply Brief due date per Local Rules is 3/9/2015. (Rovner, Philip) Modified on 3/3/2015 (nms). (Entered: 02/26/2015)
- 02/27/2015 29 MOTION to Amend 6 Amended Complaint - filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online, # 7 Online, # 8 Online, # 9 Online, # 10 Online, # 11 Online, # 12 Online, # 13 Online, # 14 Online, # 15 Online, # 16 Online, # 17 Online (Entered: 02/27/2015))
- 02/27/2015 Set Answering Brief Deadline re 29 MOTION to Amend 6 Amended Complaint. Answering Brief/Response due date per Local Rules is 3/16/2015. (nms) (Entered: 03/03/2015)
- 03/09/2015 30 STIPULATION and Order regarding Second Amended Complaint, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Blumenfeld, Jack) Modified on 3/9/2015 (nms). (Entered: 03/09/2015)
- 03/09/2015 SO ORDERED, re 30 Stipulation and Order regarding Amended Complaint, filed by Denon Electronics (USA) LLC, D&M Holdings Inc., D&M Holdings U.S. Inc. (Reset Answer Deadlines: D&M Holdings Inc. answer due 4/30/2015; D&M Holdings U.S. Inc. answer due 4/30/2015; Denon Electronics (USA) LLC answer due 4/30/2015). Signed by Judge Richard G. Andrews on 3/9/2015. (nms) (Entered: 03/09/2015)
- 03/09/2015 31 SECOND AMENDED COMPLAINT for Patent Infringement against D&M Holdings Inc., D&M Holdings U.S. Inc., and Denon Electronics (USA) LLC- filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online, # 7 Online, # 8 Online, # 9 Online, # 10 Online, # 11 Online, # 12 Online, # 13 Online, # 14 Online, # 15 Online (Entered: 03/09/2015))
- 03/16/2015 32 [SEALED] ANSWERING BRIEF in Opposition re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto filed by Sonos Inc..Reply Brief due date per Local Rules is 3/26/2015. (Rovner, Philip) (Entered: 03/16/2015)
- 03/16/2015 33 [SEALED] DECLARATION of George I. Lee re 32 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 3/17/2015 (nms). (Entered: 03/16/2015)
- 03/16/2015 34 [SEALED] DECLARATION of Rory P. Shea re 32 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 3/17/2015 (nms). (Entered: 03/16/2015)
- 03/16/2015 35

- [SEALED] DECLARATION of John Dan Smith III re 32 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 3/17/2015 (nms). (Entered: 03/16/2015)
- 03/16/2015 36 [SEALED] DECLARATION of Sean M. Sullivan re 32 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 3/17/2015 (nms). (Entered: 03/16/2015)
- 03/16/2015 37 [SEALED] DECLARATION of Mark Triplett re 32 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 3/17/2015 (nms). (Entered: 03/16/2015)
- 03/16/2015 38 DECLARATION of Philip A. Rovner re 32 Answering Brief in Opposition, by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online) (Entered: 03/16/2015)
- 03/18/2015 39 REDACTED VERSION of 32 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 3/19/2015 (nms). (Entered: 03/18/2015)
- 03/18/2015 40 REDACTED VERSION of 33 Declaration of George I. Lee, by Sonos Inc.. (Rovner, Philip) Modified on 3/19/2015 (nms). (Entered: 03/18/2015)
- 03/18/2015 41 REDACTED VERSION of 34 Declaration of Rory P. Shea, by Sonos Inc.. (Rovner, Philip) Modified on 3/19/2015 (nms). (Entered: 03/18/2015)
- 03/18/2015 42 REDACTED VERSION of 35 Declaration of John Dan Smith III, by Sonos Inc.. (Rovner, Philip) Modified on 3/19/2015 (nms). (Entered: 03/18/2015)
- 03/18/2015 43 REDACTED VERSION of 37 Declaration of Mark Triplett, by Sonos Inc.. (Rovner, Philip) Modified on 3/19/2015 (nms). (Entered: 03/18/2015)
- 03/18/2015 44 REDACTED VERSION of 36 Declaration of Sean M. Sullivan, by Sonos Inc.. (Rovner, Philip) Modified on 3/19/2015 (nms). (Entered: 03/18/2015)
- 04/02/2015 45 REPLY BRIEF re 19 MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff and for In Camera Review of Privileged Documents Relevant Thereto filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Blumenfeld, Jack) (Entered: 04/02/2015)
- 04/14/2015 46 ORAL ORDER: The Court will hear oral argument on the MOTION to Disqualify Counsel Lee, Sullivan, Shea & Smith from Representing Plaintiff (D.I. 19) on 6/19/2015 at 1:00 PM in Courtroom 6A before Judge Richard G. Andrews. Ordered by Judge Richard G. Andrews on 4/14/2015. (nms) (Entered: 04/14/2015)
- 04/22/2015 47 MOTION for Pro Hac Vice Appearance of Attorney Kurt A. Schwarz of JACKSON WALKER, LLP - filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 04/22/2015)
- 04/23/2015 SO ORDERED, re 47 MOTION for Pro Hac Vice Appearance of Attorney Kurt A. Schwarz of JACKSON WALKER, LLP filed by Denon Electronics (USA) LLC, D&M Holdings U.S. Inc.. Signed by Judge Richard G. Andrews on 4/23/2015. (nms) (Entered: 04/23/2015)
- 04/30/2015 48 ANSWER to 31 Amended Complaint, with Jury Demand, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 5/5/2015 (nms). (Entered: 04/30/2015)
- 04/30/2015 49 Disclosure Statement pursuant to Rule 7.1: identifying Other Affiliate Morgan Stanley, Other Affiliate Goldman Sachs Group Inc. for D&M Holdings Inc. filed by D&M Holdings Inc.. (Flynn, Michael) (Entered: 04/30/2015)
- 06/19/2015 Minute Entry for proceedings held before Judge Richard G. Andrews - Oral Argument held on 6/19/2015. (Court Reporter Leonard Dibbs.) (ksr,) (Entered: 06/19/2015)
- 06/23/2015 50 Official Transcript of Motion to Disqualify held on 06-19-15 before Judge Richard G. Andrews. Court Reporter/Transcriber Leonard A. Dibbs.

- Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 7/14/2015. Redacted Transcript Deadline set for 7/24/2015. Release of Transcript Restriction set for 9/21/2015. (lad) (Entered: 06/23/2015)
- 06/29/2015 51 Order Setting Rule 16(b) Conference: A Scheduling Conference is set for 8/18/2015, at 3:00 PM in Chambers before Judge Richard G. Andrews (see Order for further details). Signed by Judge Richard G. Andrews on 6/29/2015. (nms) (Entered: 06/29/2015)
- 07/17/2015 52 NOTICE OF SERVICE of Plaintiff Sonos Inc.'s First Set of Interrogatories to Defendants and Plaintiff Sonos, Inc.'s First Set of Requests for the Production of Documents and Things to Defendants filed by Sonos Inc.. (Rovner, Philip) (Entered: 07/17/2015)
- 07/29/2015 53 NOTICE OF SERVICE of (1) Defendants' First Set of Common Requests for Production of Documents to Plaintiff; and (2) Defendant D&M Holdings Inc.'s First Set of Interrogatories to Plaintiff filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 07/29/2015)
- 08/13/2015 54 Letter to The Honorable Richard G. Andrews from Jack B. Blumenfeld regarding scheduling conference. (Blumenfeld, Jack) (Entered: 08/13/2015)
- 08/13/2015 55 Letter to The Honorable Richard G. Andrews from Philip A. Rovner, Esq. responding to defendants' letter of earlier today re scheduling conference. (Rovner, Philip) Modified on 8/17/2015 (nms). (Entered: 08/13/2015)
- 08/14/2015 56 PROPOSED Scheduling Order, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 08/14/2015)
- 08/14/2015 57 PROPOSED Scheduling Order, by Sonos Inc.. (Attachments: # 1 Online (Entered: 08/14/2015)
- 08/17/2015 58 ORAL ORDER: Defendants' request (D.I. 54) is DENIED. Defendants' request (D.I. 56) is also DENIED. Scheduling conference will be based on D.I. 57 . Ordered by Judge Richard G. Andrews on 8/17/2015. (nms) (Entered: 08/17/2015)
- 08/17/2015 59 NOTICE OF SERVICE of (1) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Requests for Production of Documents and Things; and (2) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Interrogatories filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 08/17/2015)
- 08/18/2015 60 Joint PROPOSED revised scheduling order, by Sonos Inc.. (Attachments: # 1 Online (Entered: 08/18/2015)
- 08/18/2015 Minute Entry for proceedings held before Judge Richard G. Andrews - Scheduling Conference held on 8/18/2015. (Court Reporter Leonard Dibbs.) (nms) (Entered: 08/18/2015)
- 08/19/2015 61 Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) US 8,024,055 B1; US 8,843,224 B2; US 8,923,997 B2; US 8,370,678 B2; US 8,689,036 B2; US 8,938,637 B2; . (Rovner, Philip) (Entered: 08/19/2015)
- 08/20/2015 62 Official Transcript of Scheduling Conference held on 08-18-15 before Judge Richard G. Andrews. Court Reporter/Transcriber Leonard A. Dibbs. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 9/10/2015. Redacted Transcript Deadline set for

- 9/21/2015. Release of Transcript Restriction set for 11/18/2015. (lad) (Entered: 08/20/2015)
- 08/24/2015 63 MOTION for Pro Hac Vice Appearance of Attorney Blake T. Dietrich of Jackson Walker, LLP - filed by D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 08/24/2015)
- 08/25/2015 SO ORDERED, re 63 MOTION for Pro Hac Vice Appearance of Attorney Blake T. Dietrich of Jackson Walker, LLP filed by Denon Electronics (USA) LLC, D&M Holdings U.S. Inc.. Signed by Judge Richard G. Andrews on 8/25/2015. (nms) (Entered: 08/25/2015)
- 08/25/2015 64 PROPOSED Scheduling Order, by Sonos Inc.. (Attachments: # 1 Online) (Entered: 08/25/2015)
- 08/25/2015 Pro Hac Vice Attorney Blake T. Dietrich for D&M Holdings U.S. Inc. added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (dmp,) (Entered: 08/25/2015)
- 08/25/2015 65 SCHEDULING ORDER: Case referred to the Magistrate Judge for the purpose of exploring ADR. Joinder of Parties due by 1/29/2016. Amended Pleadings due by 1/29/2016. Discovery due by 11/18/2016. Dispositive Motions due by 4/27/2017. Answering Brief due 5/18/2017. Reply Brief due 6/8/2017. Joint Claim Construction Brief due by 9/23/2016. A Markman Hearing is set for 10/13/2016, at 9:00 AM in Courtroom 6A before Judge Richard G. Andrews. A Pretrial Conference is set for 9/22/2017, at 9:00 AM in Courtroom 6A before Judge Richard G. Andrews. A 5 day Jury Trial is set for 10/2/2017, at 9:30 AM in Courtroom 6A before Judge Richard G. Andrews (see Order for further details). Signed by Judge Richard G. Andrews on 8/25/2015. (nms) (Entered: 08/25/2015)
- 08/28/2015 66 NOTICE OF SERVICE of Sonos Inc.'s Responses to Defendant D&M Holdings Inc.'s First Set of Interrogatories (Nos. 1-11) to Plaintiff; Plaintiff Sonos, Inc.'s Objections and Responses to Defendants' First Set of Common Requests for Production of Documents re 53 Notice of Service, filed by Sonos Inc..(Rovner, Philip) (Entered: 08/28/2015)
- 09/01/2015 CASE REFERRED to Judge Thyng for Mediation. (cak) (Entered: 09/01/2015)
- 09/03/2015 67 ORDER Setting Teleconference: Plaintiff's counsel to initiate the call. A Telephone Conference is set for 9/16/2015 at 11:00 AM Eastern Time before Judge Mary Pat Thyng to discuss ADR. Signed by Judge Mary Pat Thyng on 9/3/15. (cak) (Entered: 09/03/2015)
- 09/04/2015 68 PROPOSED Protective Order, by Sonos Inc.. (Rovner, Philip) Modified on 9/8/2015 (nms). (Entered: 09/04/2015)
- 09/08/2015 69 SO ORDERED Granting 68 Proposed Stipulated Protective Order. Signed by Judge Richard G. Andrews on 9/8/2015. (nms) (Entered: 09/08/2015)
- 09/09/2015 70 MEMORANDUM OPINION regarding MOTION to Disqualify Counsel (D.I. 19). Signed by Judge Richard G. Andrews on 9/9/2015. (nms) (Entered: 09/09/2015)
- 09/09/2015 71 ORDER Denying 19 MOTION to Disqualify Counsel. Signed by Judge Richard G. Andrews on 9/9/2015. (nms) (Entered: 09/09/2015)
- 09/23/2015 72 ORDER Setting Mediation Conferences: A Telephone Conference is set for 4/11/2016 at 10:00 AM Eastern Time before Judge Mary Pat Thyng. A Mediation Conference is set for 5/12/2016 at 10:00 AM in Courtroom 2B before Judge Mary Pat Thyng. SEE ORDER FOR DETAILS. Signed by Judge Mary Pat Thyng on 9/23/15. (cak) (Entered: 09/23/2015)
- 10/08/2015 73 NOTICE of Change of Address (Jackson Walker, L.L.P. - Dallas) by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC (Flynn, Michael) (Entered: 10/08/2015)
- 10/08/2015 74

- NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Initial Disclosures Pursuant to Section 2(B) of the Scheduling Order; Plaintiff Sonos, Inc.'s Initial Disclosures Pursuant to Rule 26(a)(1) of the Federal Rules of Civil Procedure and Section 3 of the District of Delaware's Default Standard For Discovery re 65 Scheduling Order,, filed by Sonos Inc..(Rovner, Philip) (Entered: 10/08/2015)
- 10/08/2015 75 NOTICE OF SERVICE of (1) Defendants' Initial Disclosures; and (2) Defendants' Disclosures Pursuant to Paragraph 3 of the Delaware Default Standard for Discovery filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/08/2015)
- 10/15/2015 76 MOTION for Pro Hac Vice Appearance of Attorney Michael P. Boyea, Esq. - filed by Sonos Inc.. (Rovner, Philip) (Entered: 10/15/2015)
- 10/15/2015 77 NOTICE of change of address for Lee Sullivan Shea & Smith LLP, by Sonos Inc.. (Rovner, Philip) Modified on 10/16/2015 (nms). (Entered: 10/15/2015)
- 10/16/2015 SO ORDERED, re 76 MOTION for Pro Hac Vice Appearance of Attorney Michael P. Boyea, Esq., filed by Sonos Inc.. Signed by Judge Richard G. Andrews on 10/16/2015. (nms) (Entered: 10/16/2015)
- 10/16/2015 Pro Hac Vice Attorney Michael P. Boyea for Sonos Inc. added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (dmp,) (Entered: 10/16/2015)
- 10/16/2015 78 NOTICE OF SERVICE of Defendants' First Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Interrogatories filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/16/2015)
- 11/03/2015 79 NOTICE to Take Deposition of 30 (b)(6) notice of deposition of D&M Holdings Inc. d/b/a The D+M Group, D&M Holdings U.S. Inc., and Denon Electronics (USA), LLC on November 17, 2015 filed by Sonos Inc.. (Rovner, Philip) (Entered: 11/03/2015)
- 11/05/2015 80 NOTICE OF SERVICE of Defendants' First Amended Disclosures Pursuant to Paragraph 3 of the Delaware Default Standard for Discovery filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 11/05/2015)
- 11/30/2015 81 [SEALED] Motion for Leave to Amend Answer to Assert Counterclaims - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online (Entered: 11/30/2015)
- 11/30/2015 Set Answering Brief Deadline re 81 MOTION for Leave to Amend Their Answer to Assert Counterclaims. Answering Brief/Response due date per Local Rules is 12/17/2015. (nms) (Entered: 12/01/2015)
- 12/01/2015 CORRECTING ENTRY: Exhibit 3 to D.I. 81 has been replaced per counsel's request. The reference to "Exhibit B" in the Order has been changed to read "Exhibit 2." (nms) (Entered: 12/01/2015)
- 12/04/2015 82 STIPULATION TO EXTEND TIME time for plaintiff to file its opposition to defendants' motion for leave to amend their answer to assert oounterclaims to January 4, 2016 - filed by Sonos Inc.. (Rovner, Philip) Modified on 12/4/2015 (nms). (Entered: 12/04/2015)
- 12/04/2015 SO ORDERED, re 82 STIPULATION TO EXTEND TIME to file opposition to motion for leave to amend answer to assert counterclaims to January 4, 2016, filed by Sonos Inc. (Reset Briefing Schedule: re 81 MOTION for Leave to Amend Their Answer to Assert Counterclaims. Answering Brief due 1/4/2016). Signed by Judge Richard G. Andrews on 12/4/2015. (nms) (Entered: 12/04/2015)

- 12/08/2015 83 REDACTED VERSION of 81 MOTION for Leave to Amend Answer to Assert Counterclaims, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online (Entered: 12/08/2015))
- 12/10/2015 84 NOTICE OF SERVICE of subpoenas on AL Infinity d/b/a Altec Lansing filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online (Entered: 12/10/2015))
- 12/11/2015 85 NOTICE OF SERVICE of Defendants' Core Technical Document Production filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 12/11/2015)
- 12/28/2015 86 NOTICE OF SERVICE of Defendants' Second Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Interrogatories filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 12/28/2015)
- 12/29/2015 87 NOTICE OF SERVICE of subpoenas on Tymphany Corporation filed by Sonos Inc.. (Attachments: # 1 Online (Entered: 12/29/2015))
- 01/04/2016 88 ANSWERING BRIEF in Opposition re 81 MOTION for Leave to Amend Their Answer to Assert Counterclaims filed by Sonos Inc..Reply Brief due date per Local Rules is 1/14/2016. (Attachments: # 1 Online (Entered: 01/04/2016))
- 01/14/2016 89 REPLY BRIEF re 81 MOTION for Leave to Amend Their Answer to Assert Counterclaims filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 01/14/2016))
- 01/15/2016 90 REQUEST for Oral Argument by Sonos Inc. re 81 MOTION for Leave to Amend Their Answer to Assert Counterclaims. (Rovner, Philip) (Entered: 01/15/2016)
- 01/20/2016 91 MOTION for Leave to File a Sur-Reply in Opposition to Motion for Leave to Amend Their Answer to Assert Counterclaims - filed by Sonos Inc.. (Attachments: # 1 Online (Entered: 01/20/2016))
- 01/20/2016 Set Answering Brief Deadline re 91 MOTION for Leave to File a Sur-Reply in Opposition to Motion for Leave to Amend Their Answer to Assert Counterclaims. Answering Brief/Response due date per Local Rules is 2/8/2016. (nms) (Entered: 01/21/2016)
- 01/29/2016 92 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Initial Claim Charts filed by Sonos Inc..(Rovner, Philip) (Entered: 01/29/2016)
- 01/29/2016 93 [SEALED] MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, Volume I - filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online (Entered: 01/29/2016))
- 01/29/2016 94 [SEALED] MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, VOL. II - filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online (Entered: 01/29/2016))
- 01/29/2016 Set Answering Brief Deadline re 93 MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, Volume I. Answering Brief/Response due date per Local Rules is 2/16/2016. (nms) (Entered: 02/01/2016)
- 02/08/2016 95 ANSWERING BRIEF in Opposition re 91 MOTION for Leave to File a Sur-Reply in Opposition to Motion for Leave to Amend Their Answer to Assert Counterclaims, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Reply Brief due date per Local Rules is 2/19/2016. (Attachments: # 1 Online (Entered: 02/08/2016))
- 02/09/2016 CORRECTING ENTRY: The pdf for the exhibits attached to D.I. 95 has been replaced per counsel's request. Exhibit D has been removed. (nms) (Entered: 02/09/2016)

- 02/09/2016 REDACTION NOTICE: In accordance with section G of the Administrative Procedures Governing Filing and Service by Electronic Means, redacted versions of sealed documents shall be filed electronically within 7 days of the filing of the sealed document. The records of this case do not reflect the filing of redacted versions of DI # 93 and 94 . (nms) (Entered: 02/09/2016)
- 02/10/2016 96 REDACTED VERSION of 93 MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, Volume I, by Sonos Inc.. (Attachments: # 1 Online (Entered: 02/10/2016))
- 02/10/2016 97 REDACTED VERSION of 94 MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, VOL. II, by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online (Entered: 02/10/2016))
- 02/16/2016 98 RESPONSE to 93 MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 2/17/2016 (nms). (Entered: 02/16/2016)
- 02/26/2016 99 REPLY BRIEF re 93 MOTION for Leave to Amend Complaint Against Defendants to Replace Seven Asserted Patents, Volume I filed by Sonos Inc.. (Rovner, Philip) (Entered: 02/26/2016)
- 03/07/2016 100 ORDER Granting Motion for Leave to Amend (D.I. 81). The Motion for Leave to File a Sur-Reply (D.I. 91) is Dismissed as moot. The Motion for Leave to Amend Complaint (D.I. 93) is Granted. Defendants counterclaims for patent infringement are, pursuant to Fed. R. Civ. P. 42 (b), and consistent with the Courts practice, SEVERED for a separate trial. The counterclaims are to be docketed with a new civil action number. The parties should meet and confer and submit by March 14, 2016, a Rule 16 scheduling order for the counterclaims. If the parties do not agree on a schedule, they should promptly call Chambers to get a date and time for a scheduling conference. Signed by Judge Richard G. Andrews on 3/4/2016. (nms) Modified on 3/7/2016 (nms). (Entered: 03/07/2016)
- 03/07/2016 101
- 03/07/2016 102 THIRD AMENDED COMPLAINT For Patent Infringement against D&M Holdings Inc., D&M Holdings U.S. Inc., and Denon Electronics (USA) LLC- filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online (Entered: 03/07/2016))
- 03/07/2016 Remark: Per the Order (D.I. 100), the Counterclaims filed at D.I. 101 have been severed and have been filed in the new case found at Civil Action 16-141-RGA. (nms) (Entered: 03/07/2016)
- 03/08/2016 103 Report to the Commissioner of Patents and Trademarks for Patent/Trademark Number(s) D559, 197 S; 7,571,014 B1; 8,588,949 B2; 8,843,224 B2; 8,938,637 B2; 8,938,312 B2; 9,042,556 B2 9,130,771 B2, 9,195,258 B2, 9,213,357 B2, 9,202,509 B2, 9,219,959 B2. (Rovner, Philip) (Entered: 03/08/2016)
- 03/15/2016 104 STIPULATION TO EXTEND TIME to answer, move or otherwise respond to the Third Amended Complaint (D.I. 102) to March 28, 2016 - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 03/15/2016)
- 03/16/2016 SO ORDERED, re 104 STIPULATION TO EXTEND TIME to answer, move or otherwise respond to the Third Amended Complaint to March 28, 2016, filed by Denon Electronics (USA) LLC, D&M Holdings Inc., D&M Holdings U.S. Inc. (Reset Answer Deadlines: D&M Holdings Inc. answer due 3/28/2016; D&M Holdings U.S. Inc. answer due 3/28/2016; Denon Electronics (USA) LLC answer due 3/28/2016). Signed by Judge Richard G. Andrews on 3/16/2016. (nms) (Entered: 03/16/2016)
- 03/18/2016 105

- NOTICE of Third Party Subpoenas by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC (Attachments: # 1 Online (Entered: 03/18/2016))
- 03/28/2016 106 ANSWER to 102 Amended Complaint, with Jury Demand, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 3/29/2016 (nms). (Entered: 03/28/2016)
- 04/11/2016 107 ORAL ORDER: The mediation scheduled for 5/12/16 at 10:00 AM with Judge Thyng and the submission due date of 4/28/16 are cancelled. Ordered by Judge Mary Pat Thyng on 4/11/16. (cak) (Entered: 04/11/2016)
- 04/12/2016 108 ORAL ORDER: A teleconference with Judge Thyng has been scheduled for 8/11/16 at 9:30 AM Eastern Time to be initiated by defense counsel. The mediation with Judge Thyng has been rescheduled for 8/31/16 at 10:00 AM. Submissions of the parties shall now be due on or before 8/19/16 by no later than 12:00 Noon. All other provisions of the Court's 9/23/15 Order remain in full force and effect. Ordered by Judge Mary Pat Thyng on 4/12/16. (cak) (Entered: 04/12/2016)
- 04/15/2016 109 NOTICE OF SERVICE of Defendants' Initial Invalidity Contentions filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 04/15/2016)
- 04/18/2016 110 ORDER Setting Mediation Conferences: A Telephone Conference is set for 8/11/2016 at 9:30 AM before Judge Mary Pat Thyng to be initiated by defense counsel. The Mediation Conference is set for 8/31/2016 at 10:00 AM in Courtroom 2B before Judge Mary Pat Thyng. SEE ORDER FOR DETAILS. Signed by Judge Mary Pat Thyng on 4/18/16. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(cak) (Entered: 04/18/2016)
- 04/21/2016 111 MOTION to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f) - filed by Sonos Inc.. (Rovner, Philip) Modified on 4/22/2016 (nms). (Entered: 04/21/2016)
- 04/21/2016 112 OPENING BRIEF in Support re 111 MOTION to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f), filed by Sonos Inc..Answering Brief/Response due date per Local Rules is 5/9/2016. (Rovner, Philip) Modified on 4/22/2016 (nms). (Entered: 04/21/2016)
- 04/29/2016 113 NOTICE OF SERVICE of Sonos, Inc.'s Supplemental Responses to Defendant D&M Holdings Inc.'s First Set of Interrogatories (Nos. 1-11) to Plaintiff and Plaintiff Sonos, Inc.'s First Supplemental Initial Disclosures Pursuant to Rule 26(a)(1) of the Federal Rules of Civil Procedure and Section 3 of The District of Delaware's Default Standard filed by Sonos Inc..(Rovner, Philip) (Entered: 04/29/2016)
- 04/29/2016 114 NOTICE OF SERVICE of (1) Defendants' Third Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Interrogatories; and (2) Defendants' First Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Requests for the Production of Documents and Things filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 04/29/2016)
- 05/03/2016 115 NOTICE OF SERVICE of Plaintiff Sonos Inc.'s Second Set of Interrogatories to Defendants filed by Sonos Inc..(Rovner, Philip) (Entered: 05/03/2016)
- 05/06/2016 116 MOTION for Judgment on the Pleadings - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 5/10/2016 (nms). (Entered: 05/06/2016)
- 05/06/2016 117 OPENING BRIEF in Support re 116 MOTION for Judgment on the Pleadings filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Answering Brief/Response due date per Local Rules is 5/23/2016. (Flynn, Michael) (Entered: 05/06/2016)
- 05/06/2016 118

- DECLARATION of John M. Jackson re 116 MOTION for Judgment on the Pleadings, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 05/06/2016))
- 05/09/2016 119 ANSWERING BRIEF in Opposition re 111 MOTION to Strike, Inc.s Motion to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f) filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Reply Brief due date per Local Rules is 5/19/2016. (Flynn, Michael) (Entered: 05/09/2016)
- 05/11/2016 120 STIPULATION to extend time to file opposition to Motion for Judgment on the Pleadings to May 27, 2016 and time for Defendants to file a reply brief extended to June 10, 2016, by Sonos Inc.. (Rovner, Philip) Modified on 5/11/2016 (nms). (Entered: 05/11/2016)
- 05/11/2016 121 Letter to The Honorable Richard G. Andrews from Michael Flynn regarding Request for Oral Argument. (Flynn, Michael) Modified on 5/11/2016 (nms). (Entered: 05/11/2016)
- 05/11/2016 SO ORDERED, re 120 Stipulation to Extend Time, filed by Sonos Inc. (Reset Briefing Schedule: re 116 MOTION for Judgment on the Pleadings. (Answering Brief due 5/27/2016, Reply Brief due 6/10/2016). Signed by Judge Richard G. Andrews on 5/11/2016. (nms) (Entered: 05/11/2016)
- 05/12/2016 122 Letter to The Honorable Richard G. Andrews from Philip A. Rovner regarding D&M's Request for Oral Argument. (Rovner, Philip) Modified on 5/12/2016 (nms). (Entered: 05/12/2016)
- 05/17/2016 123 NOTICE OF SERVICE of Defendants' Second Set of Interrogatories to Plaintiff filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 05/17/2016)
- 05/19/2016 124 REPLY BRIEF re 111 MOTION to Strike, Inc.s Motion to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f) filed by Sonos Inc.. (Attachments: # 1 Online)(Rovner, Philip) (Entered: 05/19/2016)
- 05/27/2016 125 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Second Set of Requests for the Production of Documents and Things to Defendants filed by Sonos Inc..(Rovner, Philip) (Entered: 05/27/2016)
- 05/27/2016 126 ANSWERING BRIEF in Opposition re 116 MOTION for Judgment on the Pleadings filed by Sonos Inc..Reply Brief due date per Local Rules is 6/6/2016. (Attachments: # 1 Online, # 2 Online (Entered: 05/27/2016))
- 05/31/2016 CORRECTING ENTRY: The main document pdf for D.I. 126 has been replaced with an amended version per counsel's request. Formatting issues were corrected. (nms) (Entered: 05/31/2016)
- 06/02/2016 127 NOTICE OF SERVICE of Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s Second Set of Interrogatories filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 06/02/2016)
- 06/06/2016 128 NOTICE OF SERVICE of Defendants' List of Proposed Constructions for Terms Proposed by Plaintiff filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 06/06/2016)
- 06/09/2016 129 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Preliminary Proposed Claim Constructions filed by Sonos Inc..(Rovner, Philip) (Entered: 06/09/2016)
- 06/10/2016 130 REPLY BRIEF re 116 MOTION for Judgment on the Pleadings filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/10/2016)
- 06/17/2016 131 ORAL ORDER: The parties have advised that a dispute has arisen requiring judicial attention. The Court will hold a discovery conference on 6/27/2016, at 10:00 AM in Chambers before Judge Richard G. Andrews to take up this issue. In preparation for this hearing the parties shall follow the Discovery Matters and Disputes procedure as set forth in the

- Scheduling Order. Ordered by Judge Richard G. Andrews on 6/17/2016. (nms) (Entered: 06/17/2016)
- 06/17/2016 132 Joint STIPULATION to amend Scheduling Order, by Sonos Inc.. (Rovner, Philip) Modified on 6/20/2016 (nms). (Entered: 06/17/2016)
- 06/20/2016 133 SO ORDERED Granting 132 Joint Stipulation to Amend Scheduling Order. Joint Claim Construction Brief due by 11/23/2016, and the Markman Hearing is now set for 12/14/2016, at 8:30 AM in Courtroom 6A before Judge Richard G. Andrews (see Stipulation for further details). Signed by Judge Richard G. Andrews on 6/20/2016. (nms) (Entered: 06/20/2016)
- 06/20/2016 134 NOTICE OF SERVICE of Sonos, Inc.'s Responses to Defendants' Second Set of Interrogatories (Nos. 12-13) to Plaintiff filed by Sonos Inc..(Rovner, Philip) (Entered: 06/20/2016)
- 06/23/2016 135 Letter to The Honorable Richard G. Andrews from Michael J. Flynn regarding June 27, 2016 discovery dispute conference. (Flynn, Michael) (Entered: 06/23/2016)
- 06/24/2016 136 Letter to The Honorable Richard G. Andrews from Philip A. Rovner regarding June 27, 2016 discovery dispute conference - re 135 Letter. (Rovner, Philip) (Entered: 06/24/2016)
- 06/27/2016 137 Official Transcript of Discovery Dispute held on 06-27-16 before Judge Richard G. Andrews. Court Reporter/Transcriber Leonard A. Dibbs. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 7/18/2016. Redacted Transcript Deadline set for 7/28/2016. Release of Transcript Restriction set for 9/26/2016. (lad) (Entered: 06/27/2016)
- 06/27/2016 138 NOTICE OF SERVICE of Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s Second Set of Requests for Production of Documents and Things filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 06/27/2016)
- 06/27/2016 Minute Entry for proceedings held before Judge Richard G. Andrews - Discovery Conference held on 6/27/2016. Appearances: Shea, Smith, Choa for Plaintiff; Blumenfeld, Flynn, Jackson for Defendants. (Court Reporter Leonard Dibbs.) (ksr,) (Entered: 06/28/2016)
- 06/29/2016 139 ORAL ORDER: The MOTION to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f) (D.I. 111) is referred to Chief Magistrate Judge Mary Pat Thyng. Ordered by Judge Richard G. Andrews on 6/29/2016. Motions referred to Mary Pat Thyng.(nms) (Entered: 06/29/2016)
- 07/15/2016 140 NOTICE OF SERVICE of Defendants' Updated List of Proposed Claim Terms and Phrases for Construction filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 07/15/2016)
- 08/01/2016 141 MOTION for Leave to Amend Answer to Add the Defense of Inequitable Conduct - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 8/6/2016 (nms). (Entered: 08/01/2016)
- 08/01/2016 142 OPENING BRIEF in Support re 141 MOTION for Leave to Amend Answer to Add the Defense of Inequitable Conduct<, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Answering Brief/Response due date per Local Rules is 8/18/2016. (Attachments: # 1 Online, # 2 Online (Entered: 08/01/2016)
- 08/10/2016 143 REPORT AND RECOMMENDATIONS re 111 MOTION to Strike Affirmative Defenses under Federal Rule of Civil Procedure 12(f) filed by Sonos Inc. Please note that when filing Objections pursuant to Federal Rule of Civil Procedure 72(b)(2), briefing consists solely of the Objections (no longer

- than ten (10) pages) and the Response to the Objections (no longer than ten (10) pages). No further briefing shall be permitted with respect to objections without leave of the Court. Objections to R&R due by 8/29/2016. Signed by Judge Mary Pat Thyng on 8/10/16. (cak) (Entered: 08/10/2016)
- 08/11/2016 144 Joint STIPULATION to Amend Scheduling Order, by Sonos Inc.. (Rovner, Philip) Modified on 8/15/2016 (nms). (Entered: 08/11/2016)
- 08/12/2016 SO ORDERED, re 144 Stipulation filed by Sonos Inc.. Signed by Judge Richard G. Andrews on 8/12/2016. (ksr,) (Entered: 08/12/2016)
- 08/12/2016 145 NOTICE OF SERVICE of Defendants' Fourth Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Interrogatories filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 08/12/2016)
- 08/16/2016 146 STIPULATION TO EXTEND TIME to file its opposition to Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct to August 26, 2016 - filed by Sonos Inc.. (Rovner, Philip) Modified on 8/17/2016 (nms). (Entered: 08/16/2016)
- 08/17/2016 SO ORDERED, re 146 STIPULATION TO EXTEND TIME to file opposition to Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct to August 26, 2016, filed by Sonos Inc. (Reset Briefing Schedule: re 141 MOTION for Leave to Amend Answer to Add the Defense of Inequitable Conduct. Answering Brief due 8/26/2016). Signed by Judge Richard G. Andrews on 8/17/2016. (nms) (Entered: 08/17/2016)
- 08/17/2016 147 Joint Claim Construction Chart, Volume 1, by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online (Additional attachment(s) added on 8/18/2016: # 7 Online, # 8 Online, # 9 Online, # 10 Online, # 11 Online (Entered: 08/17/2016)
- 08/17/2016 148 Joint Claim Construction Chart, Volume 2, by Sonos Inc.. (Attachments: # 1 Online (Additional attachment(s) added on 8/18/2016: # 2 Online (Additional attachment(s) added on 8/18/2016: # 3 Online (Entered: 08/17/2016)
- 08/17/2016 149 Joint Claim Construction Chart, Volume 3, by Sonos Inc.. (Attachments: # 1 Online (Additional attachment(s) added on 8/18/2016: # 2 Online, # 3 Online, # 4 Online (Entered: 08/17/2016)
- 08/18/2016 CORRECTING ENTRY: The Joint Claim Construction Chart initially filed in seven volumes (D.I. 147 through D.I. 153) has been reconfigured, and is now three volumes in total (D.I. 147 through 149). (nms) (Entered: 08/18/2016)
- 08/25/2016 150 STIPULATION of Dismissal Regarding U.S. Patent No. 9,130,771, by Sonos Inc.. (Rovner, Philip) Modified on 8/25/2016 (nms). (Entered: 08/25/2016)
- 08/25/2016 151 SO ORDERED Granting 150 Stipulation and Order of Dismissal With Prejudice of All Claims and Defenses Regarding U.S. Patent No. 9,130,771 Only. Signed by Judge Richard G. Andrews on 8/25/2016. (nms) (Entered: 08/25/2016)
- 08/26/2016 152 ANSWERING BRIEF in Opposition re 141 MOTION for Leave to Amend Answer to Add the Defense of Inequitable Conduct filed by Sonos Inc..Reply Brief due date per Local Rules is 9/6/2016. (Attachments: # 1 Online (Entered: 08/26/2016)
- 08/29/2016 153 STIPULATION TO EXTEND TIME for defendants to file a reply brief in support of motion for leave to amend answer to September 9, 2016 - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 08/29/2016)
- 08/30/2016 SO ORDERED, re 153 STIPULATION TO EXTEND TIME to file a reply brief in support of motion for leave to amend answer to September 9, 2016,

- filed by Denon Electronics (USA) LLC, D&M Holdings Inc., D&M Holdings U.S. Inc. (Reset Briefing Schedule: re 141 MOTION for Leave to Amend Answer to Add the Defense of Inequitable Conduct. Reply Brief due 9/9/2016). Signed by Judge Richard G. Andrews on 8/30/2016. (nms) (Entered: 08/30/2016)
- 08/30/2016 154 NOTICE to Take Deposition of Amended First Notice of Rule 30(b)(6) Deposition to Defendants on September 21, 2016 filed by Sonos Inc.. (Rovner, Philip) (Entered: 08/30/2016)
- 08/30/2016 155 NOTICE to Take Deposition of Second Notice of Rule 30(b)(6) Deposition to Defendants on September 23, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 08/30/2016)
- 08/30/2016 156 NOTICE to Take Deposition of Third Notice of Rule 30(b)(6) Deposition to Defendants on September 22, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 08/30/2016)
- 09/01/2016 157 ORDER ADOPTING 143 Report and Recommendation. The Motion to Strike (D.I. 111) is GRANTED in part and DENIED in part as set forth in the Report and Recommendation. Signed by Judge Richard G. Andrews on 8/31/2016. (nms) (Entered: 09/01/2016)
- 09/07/2016 158 Amended ANSWER to 102 Third Amended Complaint for Patent Infringement, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) Modified on 9/8/2016 (nms). (Entered: 09/07/2016)
- 09/09/2016 159 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Opening Claim Construction Brief (with Exhibits 1-8) and Declaration of Steven C. Visser (with Exhibit A-B) filed by Sonos Inc..(Rovner, Philip) (Entered: 09/09/2016)
- 09/09/2016 160 REPLY BRIEF re 141 MOTION for Leave to Amend Answer to Add the Defense of Inequitable Conduct filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 09/09/2016)
- 09/15/2016 161 MOTION to Strike New Amended Answer Submitted With Their Reply Brief - filed by Sonos Inc.. (Rovner, Philip) Modified on 9/16/2016 (nms). (Entered: 09/15/2016)
- 09/15/2016 Set Answering Brief Deadline re 161 MOTION to Strike New Amended Answer Submitted With Their Reply Brief. Answering Brief/Response due date per Local Rules is 10/3/2016. (nms) (Entered: 09/16/2016)
- 10/03/2016 162 ORAL ORDER: The Court will hear oral argument on the MOTION for Judgment on the Pleadings (D.I. 116) on 11/14/2016, at 3:00 PM in Courtroom 6A before Judge Richard G. Andrews. Ordered by Judge Richard G. Andrews on 10/3/2016. (nms) (Entered: 10/03/2016)
- 10/03/2016 163 ANSWERING BRIEF in Opposition re 161 MOTION to Strike New Amended Answer Submitted With Their Reply Brief filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Reply Brief due date per Local Rules is 10/14/2016. (Flynn, Michael) (Entered: 10/03/2016)
- 10/03/2016 164 DECLARATION of John M. Jackson re 163 Answering Brief in Opposition, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 10/03/2016)
- 10/05/2016 165 NOTICE to Take Deposition of Brendon Stead on October 13, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 10/05/2016)
- 10/05/2016 166 NOTICE to Take Deposition of Evan Stuart on October 25, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 10/05/2016)
- 10/05/2016 167 NOTICE to Take Deposition of Peter Celinski on October 26, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 10/05/2016)
- 10/05/2016 168

- NOTICE to Take Deposition of Christopher Commons on October 27, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 10/05/2016)
- 10/05/2016 169 NOTICE to Take Deposition of Satoshi Fukuzuku on October 28, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 10/05/2016)
- 10/05/2016 170 NOTICE to Take Deposition of Martin R. Wachter on October 28, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 10/05/2016)
- 10/06/2016 171 NOTICE OF SERVICE of (1) Defendants' Second Set of Requests for Production of Documents to Plaintiff; and (2) Defendants' Third Set of Interrogatories to Plaintiff filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/06/2016)
- 10/07/2016 172 ORDER regarding Motion to Amend (D.I. 141]). Defendants are Ordered to advise the Court by October 12, 2016, upon which pleading they want to rely. If it is the second one, Defendants will need to file another motion to amend. Signed by Judge Richard G. Andrews on 10/7/2016. (nms) (Entered: 10/07/2016)
- 10/07/2016 173 NOTICE OF SERVICE of (1) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s Amended First Notice of Rule 30(b)(6) Deposition; (2) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s Second Notice of Rule 30(b)(6) Deposition; (3) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s Third Notice of Rule 30(b)(6) Deposition; and (4) Defendants' Notice of 30(b)(6) Deposition filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/07/2016)
- 10/10/2016 174 NOTICE OF SERVICE of Sonos, Inc.'s Amended Responses to Defendant D&M Holdings Inc.'s First Set of Interrogatories (Nos. 1-11) to Plaintiff filed by Sonos Inc..(Rovner, Philip) (Entered: 10/10/2016)
- 10/12/2016 175 Letter to The Honorable Richard G. Andrews from Michael Flynn regarding the Courts October 7, 2016 Order (D.I. 172). (Flynn, Michael) Modified on 10/13/2016 (nms). (Entered: 10/12/2016)
- 10/12/2016 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 10/13/2016 (nms). (Entered: 10/12/2016)
- 10/12/2016 177 OPENING BRIEF in Support re 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Answering Brief/Response due date per Local Rules is 10/31/2016. (Attachments: # 1 Online, # 2 Online (Entered: 10/12/2016)
- 10/12/2016 178 DECLARATION of John M. Jackson re 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 10/12/2016)
- 10/14/2016 179 NOTICE of Non-Party Subpoena (International Business Machines Corporation) by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC (Flynn, Michael) (Entered: 10/14/2016)
- 10/14/2016 180 ORAL ORDER: The motion for leave to amend (D.I. 141) and the motion to strike (D.I. 161) are both DISMISSED AS MOOT in light of the filing of the motion for leave to amend. (D.I. 176). Ordered by Judge Richard G. Andrews on 10/14/2016. (nms) (Entered: 10/14/2016)
- 10/14/2016 181 NOTICE OF SERVICE of (1) Defendants' Responsive Claim Construction Brief; and (2) Declaration of John M. Jackson in Support of Defendants' Responsive Claim Construction Brief filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/14/2016)

- 10/18/2016 182 NOTICE of Non-Party Subpoenas by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC (Attachments: # 1 Online (Entered: 10/18/2016))
- 10/19/2016 183 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s First Set of Requests for Admission to Defendants and Plaintiff Sonos Inc.'s Requests for Admission to Defendants Directed to Authenticity of Documents filed by Sonos Inc.. (Rovner, Philip) (Entered: 10/19/2016)
- 10/20/2016 184 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Amended Initial Disclosures Pursuant to Rule 26(a)(1) of the Federal Rules of Civil Procedure and Section 3 of the District of Delaware's Default Standard filed by Sonos Inc..(Rovner, Philip) (Entered: 10/20/2016)
- 10/24/2016 185 NOTICE to Take Deposition of Mike Groeninger on November 2, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/24/2016)
- 10/24/2016 186 NOTICE to Take Deposition of Nick Millington on November 4, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/24/2016)
- 10/24/2016 187 NOTICE to Take Deposition of Tom Cullen on November 11, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/24/2016)
- 10/24/2016 188 NOTICE to Take Deposition of Sonos, Inc. Pursuant to Fed. R. Civ. P. 30(b) (6) on November 2, 2016, November 4, 2016 and November 11, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 10/24/2016)
- 10/31/2016 189 ANSWERING BRIEF in Opposition re 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct filed by Sonos Inc..Reply Brief due date per Local Rules is 11/10/2016. (Attachments: # 1 Online (Entered: 10/31/2016))
- 10/31/2016 190 NOTICE OF SERVICE of Plaintiff's Objections and Responses to Defendants' Notice of 30(b)(6) deposition filed by Sonos Inc..(Rovner, Philip) (Entered: 10/31/2016)
- 11/08/2016 191 NOTICE OF SERVICE of Plaintiff Sonos, Inc.'s Responses to Defendants' Third Set of Interrogatories (Nos. 14-16) to Plaintiff and Plaintiff Sonos, Inc.'s Objections and Responses to Defendants' Second Set of Requests for Production of Documents filed by Sonos Inc..(Rovner, Philip) (Entered: 11/08/2016)
- 11/10/2016 192 REPLY BRIEF re 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 11/10/2016)
- 11/10/2016 193 STIPULATION and Order Regarding Discovery by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC, D&M Holdings Inc.. (Flynn, Michael) (Entered: 11/10/2016)
- 11/11/2016 194 REQUEST for Oral Argument by Sonos Inc. re 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct. (Rovner, Philip) (Entered: 11/11/2016)
- 11/14/2016 195 SO ORDERED Granting (193 in 14-cv-1330-RGA, 37 in 16-cv-141-RGA) Stipulation and Order Regarding Discovery. Signed by Judge Richard G. Andrews on 11/14/2016. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(nms) (Entered: 11/14/2016)
- 11/16/2016 196 NOTICE to Take Deposition of Jonathan Lang on December 8, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 11/16/2016)
- 11/16/2016 197

- NOTICE to Take Deposition of Robert Lambourne on December 6, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 11/16/2016)
- 11/18/2016 198 Amended NOTICE to Take Deposition of Martin R. Wachter on November 29, 2016, filed by Sonos Inc..(Rovner, Philip) Modified on 11/21/2016 (nms). (Entered: 11/18/2016)
- 11/18/2016 199 NOTICE OF SERVICE of Sonos, Inc.'s Second Amended Responses to Defendant D&M Holdings Inc.'s First Set of Interrogatories (Nos. 1-11) to Plaintiff; Sonos, Inc.'s Amended Responses to Defendants' Second Set of Interrogatories (Nos. 12-13) to Plaintiff; and Sonos, Inc.'s Amended Responses to Defendants' Third Set of Interrogatories (Nos. 14-16) to Plaintiff filed by Sonos Inc..(Rovner, Philip) (Entered: 11/18/2016)
- 11/18/2016 200 NOTICE OF SERVICE of (1) Defendants' Sixth Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Interrogatories; (2) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Requests For Admission; (3) Defendants' Objections and Responses to Plaintiff Sonos, Inc.'s Requests for Admission to Defendants Directed to Authenticity of Documents; and (4) Defendants' Amended Objections and Responses to Plaintiff Sonos, Inc.'s Second Set of Interrogatories filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 11/18/2016)
- 11/23/2016 201 [SEALED] Joint Claim Construction Brief, filed by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online, # 7 Online, # 8 Online, # 9 Online, # 10 Online (Entered: 11/23/2016)
- 11/23/2016 202 DECLARATION of Robert John Anders re 201 Joint Claim Construction Brief, by Sonos Inc.. (Rovner, Philip) Modified on 11/28/2016 (nms). (Entered: 11/23/2016)
- 11/23/2016 203 DECLARATION of John M. Jackson re 201 Joint Claim Construction Brief, by Sonos Inc.. (Attachments: # 1 Online (Entered: 11/23/2016)
- 11/23/2016 204 DECLARATION of Steven C. Visser re 201 Joint Claim Construction Brief, by Sonos Inc.. (Attachments: # 1 Online (Entered: 11/23/2016)
- 11/23/2016 205 Supplemental DECLARATION of Steven C. Visser re 201 Joint Claim Construction Brief, by Sonos Inc.. (Rovner, Philip) Modified on 11/28/2016 (nms). (Entered: 11/23/2016)
- 11/28/2016 206 Official Transcript of hearing held on November 14, 2016 before Judge Andrews. Court Reporter/Transcriber Valerie Gunning, Telephone number (302) 573-6194. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 12/19/2016. Redacted Transcript Deadline set for 12/29/2016. Release of Transcript Restriction set for 2/27/2017. (vjg) (Entered: 11/28/2016)
- 11/30/2016 207 REDACTED VERSION of 201 Joint Claim Construction Brief, by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online, # 7 Online, # 8 Online, # 9 Online, # 10 Online (Entered: 11/30/2016)
- 12/01/2016 208 NOTICE of Final Rejection Concerning U.S. Patent No. D559,197 in Ex Parte Reexamination by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC (Flynn, Michael) (Entered: 12/01/2016)
- 12/02/2016 209 Joint STIPULATION to Amend Scheduling Order by Sonos Inc.. (Rovner, Philip) (Entered: 12/02/2016)
- 12/05/2016 210 SO ORDERED Granting 209 Joint Stipulation to Amend Scheduling Order, filed by Sonos Inc.. Signed by Judge Richard G. Andrews on 12/5/2016. (nms) (Entered: 12/05/2016)

- 12/07/2016 211 NOTICE to Take Deposition of Kevin Zarow on December 16, 2016 filed by Sonos Inc..(Rovner, Philip) (Entered: 12/07/2016)
- 12/13/2016 212 ORAL ORDER: The Markman Hearing set for 12/14/2016, will now commence at 9:30 AM in Courtroom 6A. Ordered by Judge Richard G. Andrews on 12/13/2016. (nms) (Entered: 12/13/2016)
- 12/14/2016 Minute Entry for proceedings held before Judge Richard G. Andrews - Markman Hearing held on 12/14/2016. Appearances: P. Rovner, G. Lee, R. Shea, M. Boyea, A. Silverstein for Plaintiffs; M. Flynn, J. Jackson, M. Aeosta for Defendants. (Court Reporter Taneha Carroll - Hawkins Reporting Service.) (ksr,) (Entered: 12/15/2016)
- 12/20/2016 213 Official Transcript of Markman Hearing held on 12-14-16 before Judge Richard G. Andrews. Court Reporter/Transcriber Taneha Carroll. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 1/10/2017. Redacted Transcript Deadline set for 1/20/2017. Release of Transcript Restriction set for 3/20/2017. (lad) (Entered: 12/20/2016)
- 12/22/2016 214 Letter to The Honorable Richard G. Andrews from Michael J. Flynn regarding claim construction. (Flynn, Michael) (Entered: 12/22/2016)
- 12/22/2016 215 Letter to the Honorable Richard G. Andrews from Philip A. Rovner regarding claim construction. (Attachments: # 1 Online (Entered: 12/22/2016)
- 12/22/2016 216 DECLARATION of John M. Jackson re 214 Letter, by D&M Holdings Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 12/22/2016)
- 12/27/2016 217 NOTICE OF SERVICE of Final infringement charts pursuant to paragraph 2 (d) of the Scheduling Order, as amended filed by Sonos Inc..(Rovner, Philip) (Entered: 12/27/2016)
- 01/09/2017 218 NOTICE to Take Deposition of Christopher Kallai on February 16, 2016 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 01/09/2017)
- 01/12/2017 219 MEMORANDUM OPINION providing claim construction for multiple terms in dispute in U.S. Patent Nos. 7,571,014, 8,588,949, 8,843,224, 8,938,312, 8,938,637, 9,042,556, 9,195,258, 9,202,509, 9,213,357, 9,219,959, and D559,197. Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury. Signed by Judge Richard G. Andrews on 1/12/2017. (nms) (Entered: 01/12/2017)
- 01/17/2017 220 PROPOSED Claim Construction Order, by Sonos Inc.. (Rovner, Philip) Modified on 1/18/2017 (nms). (Entered: 01/17/2017)
- 01/18/2017 221 CLAIM CONSTRUCTION ORDER. Signed by Judge Richard G. Andrews on 1/18/2017. (nms) (Entered: 01/18/2017)
- 01/19/2017 222 NOTICE to Take Deposition of Nick Murrells on January 31, 2017 filed by Sonos Inc..(Rovner, Philip) (Entered: 01/19/2017)
- 01/19/2017 223 NOTICE to Take Deposition of Samuel Baxter on February 21, 2017 filed by Sonos Inc..(Rovner, Philip) (Entered: 01/19/2017)
- 02/01/2017 224 Joint STIPULATION regarding Supplemental Briefing on Motions by Sonos Inc.. (Rovner, Philip) (Entered: 02/01/2017)
- 02/02/2017 225 ORDER Denying (224 in 14-cv-1330-RGA, 46 in 16-cv-141-RGA) Joint Stipulation. Signed by Judge Richard G. Andrews on 2/2/2017. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(nms) (Entered: 02/02/2017)
- 02/06/2017 226

- MEMORANDUM OPINION regarding MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct (D.I. 176). Signed by Judge Richard G. Andrews on 2/3/2017. (nms) (Main Document 226 replaced on 2/6/2017) (nms). (Entered: 02/06/2017)
- 02/06/2017 227 ORDER Denying 176 MOTION for Leave to File an Amended Answer to Add the Defense of Inequitable Conduct. Signed by Judge Richard G. Andrews on 2/3/2017. (nms) (Entered: 02/06/2017)
- 02/06/2017 CORRECTING ENTRY: The pdf for D.I. 226 has been replaced with the signed version. The NEF has been regenerated to counsel. (nms) (Entered: 02/06/2017)
- 02/06/2017 228 Joint STIPULATION to Stay Claims Involving U.S. Patent D559,197 by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 02/06/2017)
- 02/07/2017 229 SO ORDERED Granting 228 Joint Stipulation to Stay Claims Involving U.S. Patent D559,197. Signed by Judge Richard G. Andrews on 2/6/2017. (nms) (Entered: 02/07/2017)
- 02/08/2017 230 Joint STIPULATION regarding supplemental briefing on Claim Construction, by Sonos Inc.. (Rovner, Philip) Modified on 2/9/2017 (nms). (Entered: 02/08/2017)
- 02/08/2017 231 Joint STIPULATION to Amend Scheduling Order by Sonos Inc.. (Rovner, Philip) (Entered: 02/08/2017)
- 02/09/2017 SO ORDERED, re 231 Joint Stipulation To Amend Scheduling Order. Signed by Judge Richard G. Andrews on 2/9/2017. (nms) (Entered: 02/09/2017)
- 02/09/2017 232 SO ORDERED Granting 230 Joint Stipulation Regarding Supplemental Briefing On Claim Construction. Signed by Judge Richard G. Andrews on 2/9/2017. (nms) (Entered: 02/09/2017)
- 02/13/2017 233 NOTICE OF SERVICE of Defendants' Amended Objections and Responses to Plaintiff Sonos, Inc.'s First Set of Requests for Admission filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 02/13/2017)
- 02/15/2017 234 Amended NOTICE to Take Deposition of Christopher Kallai on February 16, 2017, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) Modified on 2/16/2017 (nms). (Entered: 02/15/2017)
- 02/21/2017 235 NOTICE OF SERVICE of Expert Report of Jay P. Kesan Regarding the Invalidity of Asserted Claims of U.S. 9,219,959, 7,571,014, 8,588,949, 9,042,556, 9,202,509, 8,938,312, 9,213,357, 9,195,258, and 8,938,637 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 02/21/2017)
- 02/21/2017 236 NOTICE OF SERVICE of Expert Report of Michael E. Tate [Highly Confidential - Attorneys' Eyes Only] filed by Sonos Inc..(Rovner, Philip) (Entered: 02/21/2017)
- 02/21/2017 237 NOTICE OF SERVICE of Opening Expert Report of Dr. Kevin C. Almeroth [Highly Confidential - Attorneys' Eyes Only/Highly Confidential - Source Code] filed by Sonos Inc..(Rovner, Philip) (Entered: 02/21/2017)
- 02/28/2017 238 Joint Stipulation to Amend Scheduling Order - filed by Sonos Inc.. (Rovner, Philip) Modified on 2/28/2017 (nms). (Entered: 02/28/2017)
- 02/28/2017 SO ORDERED, re 238 Joint Stipulation to Amend Scheduling Order (*Reset Deadlines: Dispositive Motions due by 5/11/2017). Signed by Judge Richard G. Andrews on 2/28/2017. (nms) (Entered: 02/28/2017)
- 03/01/2017 239 ORAL ORDER: The parties have advised that a dispute has arisen requiring judicial attention. The Court will hold a discovery conference on 3/27/2017, at 10:00 AM in Chambers before Judge Richard G. Andrews to

- take up this issue. In preparation for this hearing the parties shall follow the Discovery Matters and Disputes procedure as set forth in the Scheduling Order. Ordered by Judge Richard G. Andrews on 3/1/2017. (nms) (Entered: 03/01/2017)
- 03/03/2017 240 Supplemental Opening Brief on Claim Construction, filed by Sonos Inc.. (Attachments: # 1 Online (Entered: 03/03/2017))
- 03/06/2017 241 Disclosure Statement pursuant to Rule 7.1: identifying Corporate Parent Sound United, LLC for D&M Holdings U.S. Inc., Denon Electronics (USA) LLC; Corporate Parent DEI Sales, Inc. for D&M Holdings Inc. filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 03/06/2017)
- 03/13/2017 242 MEMORANDUM OPINION regarding MOTION for Judgment on the Pleadings (D.I. 116). Signed by Judge Richard G. Andrews on 3/13/2017. (nms) (Entered: 03/13/2017)
- 03/13/2017 243 ORDER: The MOTION for Judgment on the Pleadings (D.I. 116) is DENIED. Signed by Judge Richard G. Andrews on 3/13/2017. (nms) (Entered: 03/13/2017)
- 03/17/2017 244 Response to 240 Supplemental Claim Construction Brief, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 03/17/2017))
- 03/22/2017 245 MOTION for Pro Hac Vice Appearance of Attorney Matthew C. Acosta - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 03/22/2017)
- 03/22/2017 246 SO ORDERED, re 245 MOTION for Pro Hac Vice Appearance of Attorney Matthew C. Acosta, filed by Denon Electronics (USA) LLC, D&M Holdings Inc., D&M Holdings U.S. Inc.. Signed by Judge Richard G. Andrews on 3/22/2017. (nms) (Entered: 03/22/2017)
- 03/23/2017 247 Letter to the Honorable Richard G. Andrews from Philip A. Rovner, Esq. regarding discovery dispute. (Attachments: # 1 Online (Entered: 03/23/2017))
- 03/24/2017 248 [SEALED] Letter to The Honorable Richard G. Andrews from Jack B. Blumenfeld regarding Universal Plug and Play. (Attachments: # 1 Online (Entered: 03/24/2017))
- 03/24/2017 249 REDACTED VERSION of 248 Letter by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 03/24/2017))
- 03/27/2017 Minute Entry for proceedings held before Judge Richard G. Andrews - Discovery Conference held on 3/27/2017. Appearances: P. Rovner, S. Sullivan, R. Shea for Plaintiff; J. Blumenfeld, J. Jackson for Defendants. (Court Reporter Leonard Dibbs.) (ksr,) (Entered: 03/27/2017)
- 03/27/2017 250 Joint STIPULATION to amend supplemental briefing on claim construction, by Sonos Inc.. (Rovner, Philip) Modified on 3/28/2017 (nms). (Entered: 03/27/2017)
- 03/28/2017 SO ORDERED, re 250 Joint Stipulation to Amend Supplemental Briefing on Claim Construction. Signed by Judge Richard G. Andrews on 3/28/2017. (nms) (Entered: 03/28/2017)
- 03/29/2017 251 Joint STIPULATION to Amend Scheduling Order by Sonos Inc.. (Rovner, Philip) (Entered: 03/29/2017)
- 03/29/2017 252 Supplemental Reply Brief on Claim Construction, filed by Sonos Inc.. (Attachments: # 1 Online (Entered: 03/29/2017))
- 03/30/2017 253 Official Transcript of Discovery Dispute held on 03-27-17 before Judge Richard G. Andrews. Court Reporter/Transcriber Leonard A. Dibbs. Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of

- Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 4/20/2017. Redacted Transcript Deadline set for 5/1/2017. Release of Transcript Restriction set for 6/28/2017. (lad) (Entered: 03/30/2017)
- 04/03/2017 254 ORDER Denying 251 Joint Stipulation to Amend Scheduling Order (see Order for further details). Signed by Judge Richard G. Andrews on 4/3/2017. (nms) (Entered: 04/03/2017)
- 04/03/2017 255 Joint STIPULATION to amend the Scheduling Order by Sonos Inc.. (Rovner, Philip) (Entered: 04/03/2017)
- 04/04/2017 SO ORDERED, re 255 Joint Stipulation to Amend Scheduling Order (*Reset Deadlines: Dispositive/Daubert Motions due by 6/2/2017) (see Stipulation for further due dates). Signed by Judge Richard G. Andrews on 4/4/2017. (nms) (Entered: 04/04/2017)
- 04/10/2017 256 Joint STIPULATION to Extend Page Limits by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 04/10/2017)
- 04/10/2017 257 SUR-REPLY in Support of Supplemental Opening Claim Construction Brief, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 4/11/2017 (nms). (Entered: 04/10/2017)
- 04/11/2017 SO ORDERED, re 256 Joint Stipulation to Extend Page Limits. Signed by Judge Richard G. Andrews on 4/11/2017. (nms) (Entered: 04/11/2017)
- 04/18/2017 258 NOTICE OF SERVICE of (1) Rebuttal Expert Report of Dr. Harry Bims Regarding Non-Infringement of United States Patent Nos. 9,213,357; 9,195,258; 8,938,637; 8,588,949; 7,571,014; 8,938,312; 9,042,556; 9,202,509; and 9,219,959 Under Federal Rule of Civil Procedure 26(a)(2) (B) and (2) Rebuttal Expert Report of John R. Bone, CPA, CFF filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 04/18/2017)
- 04/18/2017 259 NOTICE OF SERVICE of Opening Rebuttal Expert Report of Andrew Wolfe [Highly Confidential - Attorneys' Eyes Only] filed by Sonos Inc..(Rovner, Philip) (Entered: 04/18/2017)
- 04/19/2017 260 ORAL ORDER: The parties have advised that a dispute has arisen requiring judicial attention. The Court will hold a discovery conference on 5/18/2017, at 9:00 AM in Chambers before Judge Richard G. Andrews to take up this issue. In preparation for this hearing the parties shall follow the Discovery Matters and Disputes procedure as set forth in the Scheduling Order. Ordered by Judge Richard G. Andrews on 4/19/2017. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(nms) (Entered: 04/19/2017)
- 04/20/2017 261 Unopposed MOTION for Leave to Supplement Third Amended Complaint Under Federal Rule of Civil Procedure 15(d) - filed by Sonos Inc.. (Attachments: # 1 Exhibits 1-4, # 2 Online (Additional attachment(s) added on 4/21/2017: # 3 Online, # 4 Online, # 5 Online, # 6 Online (Entered: 04/20/2017)
- 04/21/2017 CORRECTING ENTRY: The exhibits found at D.I. 261 have been separated into four pdfs. (nms) (Entered: 04/21/2017)
- 04/21/2017 262 ORDER Granting 261 Unopposed MOTION for Leave to Supplement Third Amended Complaint Under Federal Rule of Civil Procedure 15(d). Signed by Judge Richard G. Andrews on 4/21/2017. (nms) (Entered: 04/21/2017)
- 04/21/2017 263 SUPPLEMENTAL THIRD AMENDED COMPLAINT For Patent Infringement against D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC- filed by Sonos Inc..(nms) (Entered: 04/21/2017)
- 04/26/2017 264 MOTION for Pro Hac Vice Appearance of Attorney Christopher J. Rourk of Jackson Walker, LLP - filed by D&M Holdings Inc., D&M Holdings

- U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 04/26/2017)
- 04/26/2017 265 MOTION for Pro Hac Vice Appearance of Attorney Wasif Qureshi of Jackson Walker LLP - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 04/26/2017)
- 04/27/2017 SO ORDERED, re 264 MOTION for Pro Hac Vice Appearance of Attorney Christopher J. Rourk of Jackson Walker, LLP, filed by Denon Electronics (USA) LLC, D&M Holdings Inc., D&M Holdings U.S. Inc., 265 MOTION for Pro Hac Vice Appearance of Attorney Wasif Qureshi of Jackson Walker LLP, filed by Denon Electronics (USA) LLC, D&M Holdings Inc., D&M Holdings U.S. Inc.. Signed by Judge Richard G. Andrews on 4/27/2017. (nms) (Entered: 04/27/2017)
- 04/27/2017 Pro Hac Vice Attorney Christopher J. Rourk for D&M Holdings Inc., Christopher J. Rourk for D&M Holdings U.S. Inc., Christopher J. Rourk for Denon Electronics (USA) LLC added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (crb) (Entered: 04/27/2017)
- 04/27/2017 Pro Hac Vice Attorney Wasif Qureshi for D&M Holdings Inc., D&M Holdings U.S. Inc., and Denon Electronics (USA) LLC added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (ceg) (Entered: 04/27/2017)
- 05/05/2017 266 ANSWER to 263 Amended Complaint with Jury Demand, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 5/5/2017 (nms). (Entered: 05/05/2017)
- 05/10/2017 267 NOTICE OF SERVICE of Expert Reply Report of Jay P. Kesan Regarding the Invalidity of Asserted Claims of U.S. 9,219,959, 7,571,014, 8,588,949, 9,042,556, 9,202,509, 8,938,312, 9,213,357, 9,195,258, and 8,938,637 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 05/10/2017)
- 05/10/2017 268 NOTICE OF SERVICE of Reply Expert Report of Michael E. Tate [Highly Confidential - Attorneys' Eyes Only] filed by Sonos Inc.. (Rovner, Philip) (Entered: 05/10/2017)
- 05/10/2017 269 NOTICE OF SERVICE of Reply Expert Report of Dr. Kevin C. Almeroth [Highly Confidential - Attorneys' Eyes Only/ Highly Confidential - Source Code] filed by Sonos Inc.. (Rovner, Philip) (Entered: 05/10/2017)
- 05/11/2017 270 NOTICE to Take Deposition of Andrew Wolfe on May 31, 2017 at 9:00 a.m. filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 05/11/2017)
- 05/11/2017 271 NOTICE to Take Deposition of Kevin Almeroth on June 2, 2017 at 9:00 a.m. filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 05/11/2017)
- 05/16/2017 272 [SEALED] Letter to The Honorable Richard G. Andrews from Michael J. Flynn regarding motion to compel. (Flynn, Michael) (Entered: 05/16/2017)
- 05/16/2017 273 [SEALED] DECLARATION of John M. Jackson re 272 Letter, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online) (Entered: 05/16/2017)
- 05/16/2017 274 REDACTED VERSION of 272 Letter, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 5/16/2017 (nms). (Entered: 05/16/2017)
- 05/16/2017 275 REDACTED VERSION of 273 Declaration of John M. Jackson, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 5/16/2017 (nms). (Entered: 05/16/2017)

- 05/17/2017 276 Letter to The Honorable Richard G. Andrews from Philip A. Rovner regarding Motion to Compel. (Attachments: # 1 Online (Entered: 05/17/2017))
- 05/17/2017 277 ORDER Regarding Discovery: The Discovery Conference set for 5/18/2017, at 9:00 AM is POSTPONED (see Order for further details). Signed by Judge Richard G. Andrews on 5/17/2017. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(ksr,) (Entered: 05/17/2017)
- 05/18/2017 278 [SEALED] Letter to The Honorable Richard G. Andrews from Michael J. Flynn regarding submission pursuant to the Court's May 17, 2017 Order. (Flynn, Michael) Modified on 5/19/2017 (nms). (Entered: 05/18/2017)
- 05/18/2017 279 [SEALED] DECLARATION of Matthew C. Acosta re 278 Letter, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 05/18/2017))
- 05/19/2017 280 DECLARATION of Philip A. Rovner re 277 Order, by Sonos Inc.. (Attachments: # 1 Online (Entered: 05/19/2017))
- 05/19/2017 281 DISCOVERY ORDER. Signed by Judge Richard G. Andrews on 5/19/2017. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(nms) (Entered: 05/19/2017)
- 05/19/2017 282 NOTICE OF SERVICE of Sonos, Inc.'s Third Amended Responses to Defendant D&M Holdings Inc.'s First Set of Interrogatories (Nos. 1-11) to Plaintiff; and Sonos, Inc.'s Second Amended Responses to Defendants' Second Set of Interrogatories (Nos. 12-13) to Plaintiff filed by Sonos Inc..(Rovner, Philip) (Entered: 05/19/2017)
- 05/22/2017 283 NOTICE to Take Deposition of Harry Bims on May 23, 2017 filed by Sonos Inc..(Rovner, Philip) (Entered: 05/22/2017)
- 05/22/2017 284 ORAL ORDER: The Discovery Order issued on May 19, 2017, is being revised. The disposition of the order will remain the same. Ordered by Judge Richard G. Andrews on 5/22/2017. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA(nms) (Entered: 05/22/2017)
- 05/24/2017 285 NOTICE OF SERVICE of Sonos, Inc.'s Fourth Amended Responses to Defendant D&M Holdings Inc.'s First Set of Interrogatories (Nos. 1-11) to Plaintiff filed by Sonos Inc..(Rovner, Philip) (Entered: 05/24/2017)
- 05/25/2017 286 REDACTED VERSION of 278 Letter, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 5/25/2017 (nms). (Entered: 05/25/2017)
- 05/25/2017 287 REDACTED VERSION of 279 Declaration, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 05/25/2017))
- 06/02/2017 288 AMENDED DISCOVERY ORDER (see original Order at 281 in 14-cv-1330-RGA, 85 in 16-cv-141-RGA). Signed by Judge Richard G. Andrews on 6/2/2017. Associated Cases: 1:14-cv-01330-RGA, 1:16-cv-00141-RGA (nms) (Entered: 06/02/2017)
- 06/02/2017 289 MOTION for Summary Judgment on four of Defendants' Affirmative Defenses - filed by Sonos Inc.. (Rovner, Philip) Modified on 6/2/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 290 OPENING BRIEF in Support re 289 MOTION for Summary Judgment on four of Defendants' Affirmative Defenses, filed by Sonos Inc..Answering Brief/Response due date per Local Rules is 6/16/2017. (Rovner, Philip) Modified on 6/2/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 291 [SEALED] DECLARATION of Philip A. Rovner re 289 MOTION for Summary Judgment on four of Defendants' Affirmative Defenses, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/02/2017))
- 06/02/2017 292

- MOTION to Exclude the Expert Testimony of Attorney Dr. Kesan - filed by Sonos Inc.. (Rovner, Philip) (Entered: 06/02/2017)
- 06/02/2017 293 [SEALED] OPENING BRIEF in Support re 292 MOTION to Exclude the Expert Testimony of Attorney Dr. Kesan filed by Sonos Inc..Answering Brief/Response due date per Local Rules is 6/16/2017. (Rovner, Philip) (Entered: 06/02/2017)
- 06/02/2017 294 [SEALED] DECLARATION of Philip A. Rovner re 292 MOTION to Exclude the Expert Testimony of Attorney Dr. Kesan, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/02/2017)
- 06/02/2017 295 MOTION for Partial Summary Judgment of no Invalidity - filed by Sonos Inc.. (Rovner, Philip) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 296 [SEALED] OPENING BRIEF in Support re 295 MOTION for Partial Summary Judgment of no Invalidity, filed by Sonos Inc..Answering Brief/Response due date per Local Rules is 6/16/2017. (Rovner, Philip) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 297 [SEALED] DECLARATION of Philip A. Rovner re 295 MOTION for Partial Summary Judgment of no Invalidity, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/02/2017)
- 06/02/2017 298 [SEALED] MOTION for Summary Judgment of No Direct Infringement - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 299 [SEALED] MOTION to Strike the Expert Opinions of Mr. Michael Tate - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 300 [SEALED] MOTION to Partially Strike Sonos's Expert Opinions - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 301 [SEALED] MOTION for Summary Judgment of No Indirect Infringement - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 302 [SEALED] DECLARATION of Jay P. Kesan re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike The Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 303 [SEALED] DECLARATION of Dr. Harry Bims re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/02/2017)
- 06/02/2017 305 [SEALED] DECLARATION of Matthew C. Acosta re 300 MOTION to Partially Strike Sonos's Expert Opinions, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 06/02/2017)
- 06/02/2017 Set Answering Brief Deadline re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, and 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate.

- Answering Brief/Response due date per Local Rules is 6/16/2017. (nms)
(Entered: 06/05/2017)
- 06/05/2017 CORRECTING ENTRY: The declaration filed at D.I. 304 has been removed from the docket. Counsel will refile this declaration in a multi-volume set. (nms) (Entered: 06/05/2017)
- 06/05/2017 306 [SEALED] DECLARATION of John R. Bone re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, and 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 307 [SEALED] Appendix of Exhibits, Volume 1 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/6/2017 (nms). (Main Document 307 replaced on 6/6/2017) (nms). (Entered: 06/05/2017)
- 06/05/2017 308 [SEALED] Appendix of Exhibits, Volume 2 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Main Document 308 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 309 [SEALED] Appendix of Exhibits, Volume 3 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/5/2017 (nms). (Main Document 309 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 310 [SEALED] Appendix, Volume 4 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Main Document 310 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 311 [SEALED] Appendix, Volume 5 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Main Document 311 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 312 [SEALED] Appendix, Volume 6 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Main Document 312

- replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 313 [SEALED] Appendix, Volume 7 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Main Document 313 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 314 [SEALED] Appendix of Exhibits, Volume 8 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Main Document 314 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/05/2017 315 [SEALED] Appendix of Exhibits, Volume 9 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Main Document 315 replaced on 6/6/2017) (nms). Modified on 6/6/2017 (nms). (Entered: 06/05/2017)
- 06/06/2017 CORRECTING ENTRY: The pdfs for D.I. 307 through 315 have been replaced. The filings have been amended to reflect they are now an Appendices of Exhibits. (nms) (Entered: 06/06/2017)
- 06/06/2017 316 [SEALED] APPENDIX of Exhibits, Volume 10 of 10 re 301 MOTION for Summary Judgment of No Indirect Infringement, 300 MOTION to Partially Strike Sonos's Expert Opinions, 298 MOTION for Summary Judgment of No Direct Infringement, 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/6/2017 (nms). (Entered: 06/06/2017)
- 06/06/2017 Pro Hac Vice Attorney Matthew C. Acosta for D&M Holdings Inc. added for electronic noticing. Pursuant to Local Rule 83.5 (d)., Delaware counsel shall be the registered users of CM/ECF and shall be required to file all papers. (nmg) (Entered: 06/06/2017)
- 06/09/2017 317 REDACTED VERSION of 298 MOTION for Summary Judgment of No Direct Infringement by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/09/2017)
- 06/09/2017 318 REDACTED VERSION of 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/09/2017)
- 06/09/2017 319 REDACTED VERSION of 300 MOTION to Partially Strike Sonos's Expert Opinions by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/09/2017)
- 06/09/2017 320 REDACTED VERSION of 301 MOTION for Summary Judgment of No Indirect Infringement by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/09/2017)
- 06/09/2017 321 REDACTED VERSION of 302 Declaration of Jay P. Kesan, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)

- 06/09/2017 322 REDACTED VERSION of 303 Declaration of Dr. Harry Bims, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 323 REDACTED VERSION of 305 Declaration of Matthew C. Acosta, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 324 REDACTED VERSION of 306 Declaration of John R. Bone, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 325 REDACTED VERSION of 307 Appendix, Volume 1 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 326 REDACTED VERSION of 308 Appendix, Volume 2 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 327 REDACTED VERSION of 309 Appendix, Volume 3 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 328 REDACTED VERSION of 310 Appendix, Volume 4 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 329 REDACTED VERSION of 311 Appendix, Volume 5 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 330 REDACTED VERSION of 312 Appendix, Volume 6 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 331 REDACTED VERSION of 313 Appendix, Volume 7 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 332 REDACTED VERSION of 314 Appendix, Volume 8 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 333 REDACTED VERSION of 315 Appendix, Volume 9 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 334 REDACTED VERSION of 316 Appendix, Volume 10 of 10, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/9/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 335 REDACTED VERSION of 291 Declaration of Philip A. Rovner, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/09/2017))
- 06/09/2017 336 REDACTED VERSION of 293 Opening Brief in Support, by Sonos Inc.. (Rovner, Philip) Modified on 6/12/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 337 REDACTED VERSION of 294 Declaration of Philip A. Rovner, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/09/2017))
- 06/09/2017 338 REDACTED VERSION of 296 Opening Brief in Support, by Sonos Inc.. (Rovner, Philip) Modified on 6/12/2017 (nms). (Entered: 06/09/2017)
- 06/09/2017 339 REDACTED VERSION of 297 Declaration of Philip A. Rovner, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/09/2017))
- 06/15/2017 340 NOTICE to Take Deposition of Jay P. Kesan on June 16, 2017 filed by Sonos Inc..(Rovner, Philip) (Entered: 06/15/2017)
- 06/16/2017 341

- [SEALED] ANSWERING BRIEF in Opposition re 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate filed by Sonos Inc..Reply Brief due date per Local Rules is 6/23/2017. (Rovner, Philip) (Entered: 06/16/2017)
- 06/16/2017 342 [SEALED] DECLARATION of Philip A. Rovner re 341 Answering Brief in Opposition, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/16/2017))
- 06/16/2017 343 [SEALED] ANSWERING BRIEF in Opposition re 289 MOTION for Summary Judgment on four of Defendants' Affirmative Defenses filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Reply Brief due date per Local Rules is 6/23/2017. (Flynn, Michael) (Entered: 06/16/2017)
- 06/16/2017 344 [SEALED] ANSWERING BRIEF in Opposition re 292 MOTION to Exclude the Expert Testimony of Attorney Dr. Kesan filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Reply Brief due date per Local Rules is 6/23/2017. (Flynn, Michael) (Entered: 06/16/2017)
- 06/16/2017 345 DECLARATION of Dr. Jay P. Kesan re 344 Answering Brief in Opposition, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/19/2017 (nms). (Entered: 06/16/2017)
- 06/16/2017 346 [SEALED] ANSWERING BRIEF in Opposition re 295 MOTION for Partial Summary Judgment of no Invalidity filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.Reply Brief due date per Local Rules is 6/23/2017. (Flynn, Michael) (Entered: 06/16/2017)
- 06/16/2017 347 [SEALED] DECLARATION of John M. Jackson re 346 Answering Brief in Opposition, 344 Answering Brief in Opposition, and 343 Answering Brief in Opposition, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 06/16/2017))
- 06/16/2017 348 [SEALED] ANSWERING BRIEF in Opposition re 300 MOTION to Partially Strike Sonos's Expert Opinions filed by Sonos Inc..Reply Brief due date per Local Rules is 6/23/2017. (Rovner, Philip) (Entered: 06/16/2017)
- 06/16/2017 349 [SEALED] DECLARATION of Philip A. Rovner re 348 Answering Brief in Opposition, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/16/2017))
- 06/16/2017 350 [SEALED] ANSWERING BRIEF in Opposition re 298 MOTION for Summary Judgment of No Direct Infringement filed by Sonos Inc..Reply Brief due date per Local Rules is 6/23/2017. (Rovner, Philip) (Entered: 06/16/2017)
- 06/16/2017 351 [SEALED] ANSWERING BRIEF in Opposition re 301 MOTION for Summary Judgment of No Indirect Infringement filed by Sonos Inc..Reply Brief due date per Local Rules is 6/23/2017. (Attachments: # 1 Exhibit I-II)(Rovner, Philip) (Attachment 1 replaced on 6/23/2017) (nms). (Entered: 06/16/2017)
- 06/16/2017 352 [SEALED] DECLARATION of Michael P. Boyea re 351 Answering Brief in Opposition, by Sonos Inc.. (Attachments: # 1 Online, # 2 Online, # 3 Online, # 4 Online, # 5 Online, # 6 Online (Entered: 06/16/2017))
- 06/16/2017 353 [SEALED] DECLARATION of Dr. Kevin C. Almeroth re 351 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 6/19/2017 (nms). (Entered: 06/16/2017)
- 06/20/2017 354 STIPULATION TO EXTEND TIME for the Parties to file and serve Reply Dispositive/Daubert Motions to June 23, 2017 - filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/20/2017)
- 06/21/2017 SO ORDERED, re 354 STIPULATION TO EXTEND TIME to file and serve Reply Dispositive/Daubert Motions to June 23, 2017. Signed by Judge Richard G. Andrews on 6/21/2017. (nms) (Entered: 06/21/2017)
- 06/21/2017 355

- NOTICE to Take Deposition of Michael E. Tate on August 10, 2017 filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC.(Flynn, Michael) (Entered: 06/21/2017)
- 06/22/2017 356 REDACTED VERSION of 343 Answering Brief in Opposition, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/22/2017 (nms). (Entered: 06/22/2017)
- 06/22/2017 357 REDACTED VERSION of 344 Answering Brief in Opposition, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/22/2017 (nms). (Entered: 06/22/2017)
- 06/22/2017 358 REDACTED VERSION of 346 Answering Brief in Opposition, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/22/2017 (nms). (Entered: 06/22/2017)
- 06/22/2017 359 REDACTED VERSION of 347 Declaration of John M. Jackson, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/22/2017 (nms). (Entered: 06/22/2017)
- 06/22/2017 360 Joint STIPULATION regarding Defendants' Daubert Motion by Sonos Inc.. (Rovner, Philip) (Entered: 06/22/2017)
- 06/23/2017 361 SO ORDERED, re 360 Joint Stipulation Regarding Defendants' Daubert Motions. Signed by Judge Richard G. Andrews on 6/23/2017. (nms) (Entered: 06/23/2017)
- 06/23/2017 CORRECTING ENTRY: The pdf for the exhibits found at D.I. 351 has been replaced per counsel's request. Typographical errors have been corrected. (nms) (Entered: 06/23/2017)
- 06/23/2017 CORRECTING ENTRY: The pdf for Exhibits A-D and the pdf for Exhibits E-N found at D.I. 352 have been replaced per counsel's request. Highlighting issues have been corrected. (nms) (Entered: 06/23/2017)
- 06/23/2017 362 [SEALED] REPLY BRIEF re 295 MOTION for Partial Summary Judgment of no Invalidity filed by Sonos Inc.. (Rovner, Philip) (Entered: 06/23/2017)
- 06/23/2017 363 [SEALED] DECLARATION of Nicholas Millington re 362 Reply Brief, by Sonos Inc.. (Rovner, Philip) Modified on 6/26/2017 (nms). (Entered: 06/23/2017)
- 06/23/2017 364 [SEALED] DECLARATION of Philip A. Rovner re 362 Reply Brief, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/23/2017)
- 06/23/2017 365 [SEALED] REPLY BRIEF re 298 MOTION for Summary Judgment of No Direct Infringement filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/23/2017)
- 06/23/2017 366 [SEALED] REPLY BRIEF re 300 MOTION to Partially Strike Sonos's Expert Opinions filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/23/2017)
- 06/23/2017 367 [SEALED] REPLY BRIEF re 289 MOTION for Summary Judgment on four of Defendants' Affirmative Defenses filed by Sonos Inc.. (Rovner, Philip) (Entered: 06/23/2017)
- 06/23/2017 368 [SEALED] REPLY BRIEF re 301 MOTION for Summary Judgment of No Indirect Infringement filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) (Entered: 06/23/2017)
- 06/23/2017 369 [SEALED] DECLARATION of Philip A. Rovner re 367 Reply Brief, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/23/2017)
- 06/23/2017 370 [SEALED] REPLY BRIEF re 292 MOTION to Exclude the Expert Testimony of Attorney Dr. Kesan filed by Sonos Inc.. (Rovner, Philip) (Entered: 06/23/2017)
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- [SEALED] DECLARATION of Philip A. Rovner re 370 Reply Brief, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/23/2017))
- 06/23/2017 372 [SEALED] DECLARATION of John M. Jackson re 368 Reply Brief, 366 Reply Brief, 365 Reply Brief, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Attachments: # 1 Online (Entered: 06/23/2017))
- 06/23/2017 373 SEALED REPLY BRIEF re 299 MOTION to Strike the Expert Opinions of Mr. Michael Tate, filed by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 6/26/2017 (nms). (Main Document 373 replaced on 6/26/2017) (nms). (Entered: 06/23/2017)
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- 06/26/2017 375 REDACTED VERSION of 342 Declaration of Philip A. Rovner, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/26/2017))
- 06/26/2017 376 REDACTED VERSION of 348 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 6/27/2017 (nms). (Entered: 06/26/2017)
- 06/26/2017 377 REDACTED VERSION of 349 Declaration of Philip A. Rovner, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/26/2017))
- 06/26/2017 378 REDACTED VERSION of 350 Answering Brief in Opposition, by Sonos Inc.. (Rovner, Philip) Modified on 6/27/2017 (nms). (Entered: 06/26/2017)
- 06/26/2017 379 REDACTED VERSION of 351 Answering Brief in Opposition, by Sonos Inc.. (Attachments: # 1 Online (Entered: 06/26/2017))
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- 06/30/2017 382 REDACTED VERSION of 365 Reply Brief, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 7/5/2017 (nms). (Entered: 06/30/2017)
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- 06/30/2017 385 REDACTED VERSION of 372 Declaration of John M. Jackson, by D&M Holdings Inc., D&M Holdings U.S. Inc., Denon Electronics (USA) LLC. (Flynn, Michael) Modified on 7/5/2017 (nms). (Entered: 06/30/2017)
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- 06/30/2017 387 REDACTED VERSION of 362 Reply Brief, by Sonos Inc.. (Rovner, Philip) Modified on 7/5/2017 (nms). (Entered: 06/30/2017)
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August 4, 2009

Method and apparatus for controlling multimedia players in a multi-zone system

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INVENTOR: Lambourne, Robert A. - Santa Barbara, California, United States of America (US), United States of America () ; Millington, Nicholas A. J. - Santa Barbara, California, United States of America (US), United States of America ()

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June 5, 2004 - ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS)., SONOS, INC.,
506 CHAPALA STREET, SANTA BARBARA, CALIFORNIA, UNITED STATES OF AMERICA (US), 93101, Reel
and Frame Number: 015443/0654

May 24, 2006 - SECURITY AGREEMENT, SILICON VALLEY BANK, 3003 TASMAN DRIVE, SANTA CLARA,
CALIFORNIA, UNITED STATES OF AMERICA (US), 95054, Reel and Frame Number: 017664/0836

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Sonos, Inc., Santa Barbara, California, United States of America (US), United States company or corporation
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February 26, 2010 - RELEASE BY SECURED PARTY (SEE DOCUMENT FOR DETAILS)., SONOS, INC., 223 E. DE LA GUERRA, SANTA BARBARA, CALIFORNIA, UNITED STATES OF AMERICA (US), 93101, Reel and Frame Number: 023998/0778

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ENGLISH-ABST:

Techniques for controlling zone group and zone group characteristics such as audio volume in a multi-zone system are disclosed. The multi-zone system includes a number of multimedia players, each preferably located in a zone. A controller may control the operations of all of the zone players remotely from any one of the zones. Two or more zone players may be dynamically grouped as a zone group for synchronized operations. According to one aspect of the techniques, a zone group configuration can be managed, updated, modified via an interactive user interface provided in a controlling device. The zone group configuration may be saved in one of zone players. According to another aspect of the techniques, the audio volume control of a zone group can be performed individually or synchronously as a group.

NO-OF-CLAIMS: 44

EXMPL-CLAIM: 16

NO-OF-FIGURES: 15

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PARENT-PAT-INFO:

CROSS-REFERENCE TO RELATED APPLICATION

[0001]This application is a continuation-in-part of U.S. patent application Ser. No. 10/816,217, filed Apr. 1, 2004, in the name of Nicholas A. J. Millington, and entitled "System and method for synchronizing operations among a plurality of independently clocked digital data processing devices" filed on Apr. 1, 2004.

SUMMARY:**BACKGROUND OF THE INVENTION****[0002]1. Field of the Invention**

[0003]The invention is generally related to the area of audio technologies and human-computer interaction. In particular, the invention is related to method and apparatus for controlling or manipulating a plurality of multimedia players in a multi-zone system.

[0004]2. The Background of Related Art

[0005]An enduring passion for quality audio reproduction or system is continuing to drive demands from users. One of the demands includes an audio system in a house in which, for example, one could grill to classic rock on a patio while another one may cook up his/her own music selections in a kitchen. This is all at the same time while a teenager catches a ballgame in a family room, and another one blasts pop in a bedroom. And the best part of such audio system is that each family member does not need his or her own stereo system--one system gives everyone access to all the music sources.

[0006]Currently, one of the systems that can meet part of such demand is a conventional multi-zone audio system that usually includes a number of audio players. Each of the audio players has its own amplifier(s) and a set of speakers and typically installed in one place (e.g., a room). In order to play an audio source at one location, the audio source must be provided locally or from a centralized location. When the audio source is provided locally, the multi-zone audio system functions as a collection of many stereo systems, making source sharing difficult. When the audio source is provided centrally, the centralized location may include a juke box, many compact discs, an AM or FM radio, tapes, or others. To send an audio source to an audio player demanding such source, a cross-bar type of device is used to prevent the audio source from going to other audio players that may be playing other audio sources.

[0007]In order to achieve playing different audio sources in different audio players, the traditional multi-zone audio system is generally either hard-wired or controlled by a pre-configured and pre-programmed controller. While the pre-programmed configuration may be satisfactory in one situation, it may not be suitable for another situation. For example, a person would like to listen to broadcast news from his/her favorite radio station in a bedroom, a bathroom and a den while preparing to go to work in the morning. The same person may wish to listen in the den and the living room to music from a compact disc in the evening. In order to satisfy such requirements, two groups of audio players must be established. In the morning, the audio players in the bedroom, the bathroom and the den need to be grouped for the broadcast news. In the evening, the audio players in the den and the living room are grouped for the music. Over the weekend, the audio players in the den, the living room, and a kitchen are grouped for party music. Because the morning group, the evening group and the weekend group contain the den, it can be difficult for the traditional system to accommodate the requirement of dynamically managing the ad hoc creation and deletion of groups.

[0008]Other than the above mentioned problem, the control of the audio players as a group does not exist. For example, the audio volume of the audio players in the traditional multi-zone audio system needs to be adjusted one at a time, resulting in an inconvenient and non-homogenous audio environment.

[0009]There is, therefore, a need for solutions in a multi-zone audio system to control a plurality of audio players and their audio characteristics from one controlling device.

SUMMARY OF THE INVENTION

[0010]This section is for the purpose of summarizing some aspects of the present invention and to briefly introduce some preferred embodiments. Simplifications or omissions in this section as well as in the abstract or the title of this description may be made to avoid obscuring the purpose of this section, the abstract and the title. Such simplifications or omissions are not intended to limit the scope of the present invention.

[0011]In general, the present invention pertains to control of audio characteristics of a plurality of multimedia players, or simply players, from a controller. The characteristics include, but are not limited to, an audio source and an audio volume being played in each of the players. In particular, the present invention enables the user to remotely control the audio characteristics of the players either as a group or as an individual player. According to one aspect of the present invention, the same audio source is selected to be played synchronously in a group of players via a controlling device operated by a user. The group may be flexibly formed in a dynamic manner. Within the group, any one of the audio sources may be chosen and made available to each of the players. All audio playback control operations such as pause/play, forward/rewind, next/previous track are synchronously controlled, while the audio volume adjustment may be applied to a selected player or all of the players in the group.

[0012]According to another aspect of the present invention, a configurable module is implemented in the controlling device that provides interactive graphic user interface for controlling playback of the audio source, grouping a plurality of players together, de-grouping a group or adjusting audio volume of individual players or a group of players.

[0013]According to yet another aspect of the present invention, a player in a group of players is configured to synchronously play an audio source by selecting a source, making the source available or retrieving the source if the source is not found locally

[0014]The present invention may be implemented in many forms including software, hardware or a combination of both. According to one embodiment, the present invention is directed to a method for controlling a plurality of players, the method comprising: displaying on a screen a first list showing at least available players, selecting at least one of the players as a zone group head, displaying on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head, selecting one or more players from the at least some of the players to be a group being formed by the group head, and synchronizing all players in the group.

[0015]According to another embodiment, the present invention is a method for controlling a plurality of players, the method comprising displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such group, selecting one of the volume meters from the list, and adjusting the one of the volume meters as desired.

[0016]According to still another embodiment, the present invention is an apparatus for controlling a plurality of players, the apparatus comprises a screen, a screen driver commanding the screen, an input interface, a network interface, a memory for storing code for an application module, a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of: displaying on the screen a first list showing at least available players; selecting at least one of the players as a zone group head; displaying on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head; selecting one or more players from the at least some of the players to be a zone group being formed by the zone group head; and synchronizing all players in the

zone group.

[0017]The operations further include displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such group; selecting one of the volume meters from the list; and adjusting the one of the volume meters as desired.

[0018]One of the objects, features, and advantages of the present invention is to remotely control a plurality of multimedia players in a multi-zone system, playing and controlling the audio source synchronously if the players are grouped together, or playing and controlling the audio source individually if the players are disassociated with each other.

[0019]Other objects, features, and advantages of the present invention will become apparent upon examining the following detailed description of an embodiment thereof, taken in conjunction with the attached drawings.

DRWDESC:

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]These and other features, aspects, and advantages of the present invention will become better understood with regard to the following description, appended claims, and accompanying drawings where:

[0021]FIG. 1 shows an exemplary configuration in which the present invention may be practiced;

[0022]FIG. 2A shows an exemplary functional block diagram of a player in accordance with the present invention;

[0023]FIG. 2B shows an example of a controller that may be used to remotely control one of more players of FIG. 2A;

[0024]FIG. 2C shows an exemplary internal functional block diagram of a controller in accordance with one embodiment of the present invention;

[0025]FIGS. 3A and 3B illustrate a sequence of screen displays in accordance with one embodiment of the present invention for controlling a plurality of players;

[0026]FIG. 3C shows a sequence of screen displays in accordance with one embodiment of the present invention for alternatively controlling players;

[0027]FIGS. 4A and 4B show a sequence of screen displays in accordance with one embodiment of the present invention for controlling players regarding audio volume;

[0028]FIG. 5 shows a flowchart or process of controlling a plurality of zones players according to one embodiment of the present invention;

[0029]FIG. 6 shows a flowchart or process of controlling audio volume of a plurality of players in a zone group according to one embodiment of the present invention; and

[0030]FIGS. 7A-7D show a sequence of screen displays in accordance with one embodiment of the present invention on a computing device for alternatively controlling players.

DETDESC:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0031]The present invention pertains to techniques for controlling a plurality of players, grouping some of the players, manipulating audio characteristics of the players individually or in groups. The audio characteristics include, but are not limited to, audio volume, audio bass, and audio treble. The players, also referred to as zone players, are part of in a multi-zone system that may be installed in a complex with multiple zones. In general, each zone player is located in one of the zones. Each of the zone players in the multi-zone system is coupled to a data network to communicate not only with each other but with other devices. According to one aspect of the present invention, through a controlling device, not only can each of the zone players be individually controlled, but also two or more of the zone players may be grouped as one or more groups and controlled as if they were a single unit. The audio playback for the zone players in a zone group can be synchronized.

[0032]According to another aspect of the techniques, a zone group configuration can be manipulated via a user interface provided in a controlling device. The user interface provides a mechanism to manage, create, delete or modify zone groups. All audio playback operations, such as pause/play, forward/rewind, next/previous track, are synchronized for the zone players in a zone group. The zone group configuration may be saved in any one of zone players for easy retrieval in any of the zones at anytime.

[0033]The detailed description of the present invention is presented largely in terms of procedures, steps, logic blocks, processing, or other symbolic representations that directly or indirectly resemble the operations of devices or systems that can be used on networks. These descriptions and representations are typically used by those skilled in the art to most effectively convey the substance of their work to others skilled in the art.

[0034]Reference herein to "one embodiment" or "an embodiment" means that a particular feature, structure, or characteristic described in connection with the embodiment can be included in at least one embodiment of the invention. The appearances of the phrase "in one embodiment" in various places in the specification are not necessarily all referring to the same embodiment, nor are separate or alternative embodiments mutually exclusive of other embodiments. Further, the order of blocks in process flowcharts or diagrams representing one or more embodiments of the invention do not inherently indicate any particular order nor imply any limitations in the invention.

[0035]Referring now to the drawings, in which like numerals refer to like parts throughout the several views. FIG. 1 shows an exemplary configuration **100** in which the present invention may be practiced. The configuration may represent, but not be limited to, a part of a residential home, a business building or a complex with multiple zones. There are a number of multimedia players of which three examples **102**, **104** and **106** are shown as audio devices. Each of the audio devices may be installed or provided in one particular area or zone and hence referred to as a zone player herein.

[0036]As used herein, unless explicitly stated otherwise, an audio source or audio sources are in digital format and can be transported or streamed over a data network. To facilitate the understanding of the present invention, it is assumed that the configuration **100** represents a home. Thus, the zone player **102** and **104** may be located in two of the bedrooms respectively while the zone player **106** may be installed in a living room. All of the zone players **102**, **104** and **106** are coupled directly or indirectly to a data network **108**. In addition, a computing device **110** is shown to be coupled on the network **108**. In reality, any other devices such as a home gateway device, a storage device, or an MP3 player may be coupled to the network **108** as well.

[0037]The network **108** may be a wired network, a wireless network or a combination of both. In one example, all devices including the zone players **102**, **104** and **106** are coupled to the network **108** by wireless means based on an industry standard such as IEEE 802.11. In yet another example, all devices including the zone players **102**, **104** and **106**

are part of a local area network that communicates with a wide area network (e.g., the Internet).

[0038] Many devices on the network **108** are configured to download and store audio sources. For example, the computing device **110** can download audio sources from the Internet and store the downloaded sources locally for sharing with other devices on the Internet or the network **108**. The computing device **110** can also be configured to receive streaming audio. Shown as a stereo system, the device **112** is configured to receive an analog audio source (e.g., from broadcasting) or retrieve a digital audio source (e.g., from a compact disk). The analog audio sources can be converted to digital audio sources. In accordance with the present invention, the audio source may be shared among the devices on the network **108**.

[0039] Two or more zone players may be grouped together to form a new zone group. Any combinations of zone players and an existing zone group may be grouped together. In one instance, a new zone group is formed by adding one zone player to another zone player or an existing zone group. A first chosen zone player to form the new zone group may be referred to as a zone group head. Depending on implementation, all other zone players in the group are synchronized to play an audio source or a queue of sources being played or provided by the zone group head or any one zone player in the group may be selected to synchronize others. For example, when the zone player **106** is added to the zone player **102** to form a new zone group, the zone players **102** is the zone group head of the new zone group. Both players will synchronously playback audio sources that are accessible to any one of the zone players in the multi-zone system. In one embodiment, the audio source being played or provided by the zone player **102** will be also played in the zone player **106**. In another embodiment, the audio source being played or provided by the newly added zone player **106** will be played in all players in the group.

[0040] In spite of an existing zone group including the zone players **102** or **106**, it is still possible to add another zone player (e.g., player **104**) to the existing zone group containing the zone players **102** and **106**. In one embodiment, when this zone group is selected to play an audio source, the zone players **102** and **106** will synchronize with the zone player **104**, playing whatever the zone player **104** is playing or ready to play. In another embodiment, when this zone group is selected to play an audio source, the zone player **104** will synchronize with the zone players **102** and **106**, playing whatever the zone players **102** and **106** are playing or ready to play. In an exemplary deployment, a zone group includes the zone players **102**, **104** and **106** located in a bedroom, a kitchen and a bathroom of a house, respectively. When an audio source is played in the zone group, the playback is synchronized among the zone players **102**, **104** and **106** in the group. As a result, a user may hear the same music or song regardless of whether the user is in the bedroom, the kitchen or the bathroom.

[0041] Many devices on the network **108** may be configured to control operations of the zone players **102**, **104** and **106**. In particular, one or more controlling devices **140** and **142** are used to control zone players **102**, **104** and **106** as shown in FIG. 1. The controlling devices **140** and **142** are preferably portable and remotely control the zone players via wireless means (e.g., infrared, radio, wireless standard IEEE 802.11b or 802.11g). In one embodiment, besides controlling an individual zone player, the controlling device **140** or **142** is configured to manage audio sources and audio characteristics of all the zone players regardless where the controlling device **140** or **142** is located in a house or a confined complex.

[0042] Referring now to FIG. 2A, there is shown an exemplary functional block diagram of a zone player **200** in accordance with the present invention. The zone player **200** includes a network interface **202**, a processor **204**, a memory module **206**, an audio processing circuit **210**, a digital signal processing module **212**, an audio amplifier **214** and a RF interface **216**. The network interface **202** facilitates a data flow between a data network (i.e., the data network **108** of FIG. 1) and the zone player **200** and typically executes a special set of rules (i.e., a protocol) to send data back and forth. One of the common protocols is TCP/IP (Transmission Control Protocol/Internet Protocol) commonly used in the Internet. In general, a network interface manages the assembling of an audio source or file into smaller packets that are transmitted over the data network or reassembles received packets into the original source or file. In addition, the network interface **202** handles the address part of each packet so that it gets to the right destination or intercepts packets destined for the zone player **200**.

[0043]The network interface **202** may include one or both of a wireless interface **216** and a wired interface **217**. The wireless interface **216**, also referred to as a RF interface, provides network interface functions by a wireless means for the zone player **200** to communicate with other devices in accordance with a communication protocol (such as the wireless standard IEEE 802.11a, 802.11b or 802.11g). The wired interface **217** provides network interface functions by a wired means (e.g., an Ethernet cable). In one embodiment, a zone player, referred to as an access zone player, includes both of the interfaces **216** and **217**, and other zone players include only the RF interface **216**. Thus these other zone players communicate with other devices on a network or retrieve audio sources via the access zone player. The processor **204** is configured to control the operation of other parts in the zone player **200**. The memory **206** may be loaded with one or more software modules that can be executed by the processor **204** to achieve desired tasks. According to one aspect of the present invention, a software module implementing one embodiment of the present invention is executed, the processor **204** operates in accordance with the software module in reference to a saved zone group configuration characterizing a zone group created by a user, the zone player **200** is caused to retrieve an audio source from another zone player or a device on the network.

[0044]According to one embodiment of the present invention, the memory **206** is used to save one or more saved zone configuration files that may be retrieved for modification at any time. Typically, a saved zone group configuration file is transmitted to a controller (e.g., the controlling device **140** or **142** of FIG. 1) when a user operates the controlling device. The zone group configuration provides an interactive user interface so that various manipulations or control of the zone players may be performed.

[0045]The audio processing circuit **210** resembles most of the circuitry in an audio playback device and includes one or more digital-to-analog converters (DAC), an audio preprocessing part, an audio enhancement part or a digital signal processor and others. In operation, when an audio source is retrieved via the network interface **202**, the audio source is processed in the audio processing circuit **210** to produce analog audio signals. The processed analog audio signals are then provided to the audio amplifier **214** for playback on speakers. In addition, the audio processing circuit **210** may include necessary circuitry to process analog signals as inputs to produce digital signals for sharing with other devices on a network.

[0046]Depending on an exact implementation, the digital signal processing module **212** may be implemented within the audio processing circuit **210** or as a combination of hardware and software. The audio amplifier **214** is typically an analog circuit that powers the provided analog audio signals to drive one or more speakers.

[0047]Referring now to FIG. 2B, there is shown an example of a controller **240**, which may correspond to the controlling device **140** or **142** of FIG. 1. The controller **240** may be used to facilitate the control of multi-media applications, automation and others in a complex. In particular, the controller **240** is configured to facilitate a selection of a plurality of audio sources available on the network, controlling operations of one or more zone players (e.g., the zone player **200**) through a RF interface corresponding to the RF interface **216** of FIG. 2A. According to one embodiment, the wireless means is based on an industry standard (e.g., infrared, radio, wireless standard IEEE 802.11a, 802.11b or 802.11g). When a particular audio source is being played in the zone player **200**, a picture, if there is any, associated with the audio source may be transmitted from the zone player **200** to the controller **240** for display. In one embodiment, the controller **240** is used to synchronize more than one zone players by grouping the zone players in a group. In another embodiment, the controller **240** is used to control the volume of each of the zone players in a zone group individually or together.

[0048]The user interface for the controller **240** may include some of a screen **242** (e.g., a LCD screen) and a set of functional buttons as follows: a "zones" button **244**, a "back" button **246**, a "music" button **248**, a scroll wheel **250**, "ok" button **252**, a set of transport control buttons **254**, a mute button **262**, a volume up/down button **264**, a set of soft buttons **266** corresponding to the labels **268** displayed on the screen **242**.

[0049]The screen **242** displays various screen menus in response to a user's selection. In one embodiment, the "zones" button **244** activates a zone management screen or "Zone Menu", which is described in more details below. The

"back" button **246** may lead to different actions depending on the current screen. In one embodiment, the "back" button triggers the current screen display to go back to a previous one. In another embodiment, the "back" button negates the user's erroneous selection. The "music" button **248** activates a music menu, which allows the selection of an audio source (e.g., a song) to be added to a zone player's music queue for playback.

[0050]The scroll wheel **250** is used for selecting an item within a list, whenever a list is presented on the screen **242**. When the items in the list are too many to be accommodated in one screen display, a scroll indicator such as a scroll bar or a scroll arrow is displayed beside the list. When the scroll indicator is displayed, a user may rotate the scroll wheel **250** to either choose a displayed item or display a hidden item in the list. The "ok" button **252** is used to confirm the user selection on the screen **242**.

[0051]There are three transport buttons **254**, which are used to control the effect of the currently playing song. For example, the functions of the transport buttons may include play/pause and forward/rewind a song, move forward to a next song track, or move backward to a previous track. According to one embodiment, pressing one of the volume control buttons such as the mute button **262** or the volume up/down button **264** activates a volume panel. More detailed description of the volume panel will be discussed below. In addition, there are three soft buttons **266** that can be activated in accordance with the labels **268** on the screen **242**. It can be understood that, in a multi-zone system, there may be multiple audio sources being played. The music transport functions described herein shall apply selectively to one of the sources when a corresponding one of the zone players or zone groups is selected.

[0052]FIG. 2C illustrates an internal functional block diagram of an exemplary controller **270**, which may correspond to the controller **240** of FIG. 2B. The screen **272** on the controller **270** may be a LCD screen. The screen **272** communicates with and is commanded by a screen driver **274** that is controlled by a microcontroller (e.g., a processor) **276**. The memory **282** may be loaded with one or more application modules **284** that can be executed by the microcontroller **276** with or without a user input via the user interface **278** to achieve desired tasks. In one embodiment, an application module is configured to facilitate grouping a number of selected zone players into a zone group and synchronizing the zone players for one audio source. In another embodiment, an application module is configured to control together the audio volumes of the zone players in a zone group. In operation, when the microcontroller **276** executes one of the application modules **284**, the screen driver **274** generates control signals to drive screen **272** to display an application specific user interface accordingly, more of which will be described below.

[0053]The controller **270** includes a network interface **280** referred to as a RF interface **280** that facilitates wireless communication with a zone player via a corresponding RF interface thereof. In one embodiment, the commands such as volume control and audio playback synchronization are sent via the RF interfaces. In another embodiment, a saved zone group configuration is transmitted between a zone player and a controller via the RF interfaces. The controller **270** may control one or more zone players, such as **102**, **104** and **106** of FIG. 1. Nevertheless, there may be more than one controllers, each in a zone (e.g., a room) and configured to control any one and all of the zone players.

[0054]In one embodiment, a user creates a zone group including at least two zone players from the controller **240** that sends signals or data to one of the zone players. As all the zone players are coupled on a network, the received signals in one zone players can cause other zone players in the group to be synchronized so that all the zone players in the group playback an identical audio source or a list of identical audio sources. Similarly, when a user increases the audio volume of the group from the controller, the signals or data of increasing the audio volume for the group are sent to one of the zone players and causes other zone players in the group to be increased together in volume and in same scale.

[0055]According to one implementation, an application module is loaded in memory **282** for zone group management. When a predetermined key (e.g. the "zones" button **244**) is activated on the controller **240**, the application module is executed in the microcontroller **276**. The input interface **278** coupled to and controlled by the microcontroller **276** receives inputs from a user. A "Zone Menu" is then displayed on the screen **272**. The user may start grouping zone players into a zone group by activating a "Link Zones" or "Add Zone" soft button, or de-grouping a zone group by

activating an "Unlink Zones" or "Drop Zone" button. The detail of the zone group manipulation will be further discussed below.

[0056]As described above, the input interface **278** includes a number of function buttons as well as a screen graphical user interface. It should be pointed out that the controller **240** in FIG. 2B is not the only controlling device that may practice the present invention. Other devices that provide the equivalent control functions (e.g., a computing device, a hand-held device) may also be configured to practice the present invention. In the above description, unless otherwise specifically described, it is clear that keys or buttons are generally referred to as either the physical buttons or soft buttons, enabling a user to enter a command or data.

[0057]FIGS. 3A and 3B illustrate a sequence of screens in accordance with one embodiment of the present invention for manipulating a plurality of zone players for an exemplary four-zone distributed audio system. There are four zone players in four zones and referred to as: "Zone 1", "Zone 2", "Zone 3" and "Zone 4".

[0058]FIG. 3A shows a grouping process. A first "Zone Menu" **302** shows a first list **303** of available zone players. One of the zone players or existing zone group is selected as a zone group head **304**, which is indicated with uniformly highlighted texts. It is noted the highlighted texts may also be expressed as grouped icons, concatenated texts or other representations of a current selection on the screen. The highlighted texts react to a user's scrolling selection (e.g., via a scroll wheel **250** of FIG. 2B). Also shown as one of the bottom labels on the first "Zone Menu" **302** is the "Link Zones" or "Add Zone" label **306** that corresponds to a soft button (e.g., soft button **266** of FIG. 2B). A scroll indicator is displayed beside the first display **302** when the number of items is too many to be accommodated in one display.

[0059]When the soft button corresponding to "Link Zones" or "Add Zone" **306** is activated, a second "Zone Menu" **308** is displayed. A second list shows eligible zone groups or zone players **309** for the zone group head **304**. Since "Zone 2" has been selected as the zone group head to form a zone group, the eligible zone groups and zone players are now "Zone 1", "Zone 3" and "Zone 4". As shown as highlighted texts, the zone player (Zone 4) **310** is selected to be grouped with the zone group head (Zone 2) **304** to form a new zone group.

[0060]After the user confirms the selection, the newly formed zone group configuration is updated and the audio source can be played synchronously for all of the zone players in the newly formed zone group as shown in FIG. 3A. The first "Zone menu" **312** is displayed again with the newly formed zone group **314** as one of the choices along with other available zone players. Depending on implementation, any zone players that have been used in a group may or may not be used in another group. As shown in FIG. 3A, the zone players **2** and **4** are in a zone group started by the zone player **2**, the zone player **4** (even the zone player **2**) can be in another zone group, for example, while a player in a living room is grouped with a player in a dining room, the same player in the living room can be grouped with a player in a family room.

[0061]In another embodiment, a display shows a list of available zone players for grouping. An interactive graphic interface allows a user to interactively select some of the available zone players that are automatically grouped. Anyone of the selected zone players in the group may be elected to be a group head such that other players in the group are synchronized to follow the group head.

[0062]According to one embodiment, the synchronization of all zone players in the new zone group is achieved with the following steps: 1) choosing an audio source from one of the zone players in the group, 2) checking if the chosen audio source is available locally on each of the zone players, 3) retrieving the audio source from another device (e.g., other zone players) which has the audio source via the data network, if the audio source is not available locally, and 4) playing the audio source on each of the zone players synchronously. In another embodiment, the audio source in the group or player to be added is chosen as default for other zone players. As shown in FIG. 3A, the audio source for "Zone 4" is track **10** with artist D. Accordingly, the zone player "Zone 2" will play track **10** with artist D synchronously with "Zone 4" after the new zone group is formed.

[0063]FIG. 3B shows a de-grouping process in reference to FIG. 3A.1. A first "Zone Menu" **322** shows a first list **323** of available zone players and zone groups, if there is any. One of the zone groups ("Zone 2+Zone 4") to be de-grouped is selected as shown in highlight texts **324**. When the "Unlink Zones" or "Drop Zone" soft button **326** is activated, the second "Zone Menu" **328** displays a list **329** that shows all of the member zone players in the selected zone group. One of the zone players **330** (Zone 4) in the selected zone group is chosen to be disassociated from the zone group **324**. When the de-grouping is confirmed by user, the "Zone Menu" **332** is presented to reflect the de-grouping of a zone group (e.g., "Zone 2") **334**. When zone players are grouped together, all of the zone players play the same audio source synchronously. If a zone player is disassociated or dropped from the zone group, the remaining zone players in the zone group continue playing the audio source. In the "Zone Menu" **332**, it shows the zone player (Zone 4) has no music **336** after the disassociation from the zone group, while the remaining player (Zone 2) continues to play the same music--track **10** with artist D.

[0064]Referring now to FIG. 3C, there shows a sequence of screens depicting alternative steps of creating a zone group. An exemplary five-zone audio system is used to describe these alternative steps. There are five zone players located in a living room, a dining room, a kitchen, an office and a master bedroom. It is assumed that three of the five rooms, the living room, the dining room and the kitchen, are grouped to form a zone group called "LivingRoom+DiningRoom+Kitchen". The Screen display **350** shows that an audio source called "Counting Crows" **352** is being played on all the zone players in the group. When a user activates the "music" button **248** on a controller **240** of FIG. 2B, the screen display **360** shows a "Music Menu" page which shows a list of choices **362**. One of the choices is "Play Music From Other Rooms" **364**. When the user selects this option, the screen display **370** for "Play Same Music As Other Rooms" displays a list **372** of eligible rooms or zone players to be grouped with the current group "Living Room+Dining Room+Kitchen". In this example the eligible rooms are Office **374** and Master Bedroom **376**. It is assumed that the "Office" **374** which is indicated with the highlighted bar is chosen. As a result, the zone player "Office" is grouped with the original zone group to become a new group called "LivingRoom+DiningRoom+Kitchen+Office" as shown in screen display **380**. And the audio source "Miles Davis" **382** from the zone player "Office" is played synchronously on all zone players in the new group.

[0065]Referring now to FIGS. 4A and 4B, there is shown a sequence of screens in accordance with one embodiment of the present invention for controlling audio volume of zone players in a zone group. These screens are activated and displayed when one of the volume control buttons is activated. According to one embodiment, the volume control buttons are "mute" button **262** and "volume up/down" button **264** on the controller **240** of FIG. 2B.

[0066]FIG. 4A shows that the current active zone player is in a living room of a house. The "Volume" panel **410** is displayed for the current zone player "Living Room". A volume meter **412** is included to indicate a volume adjustment made by a user. A mute icon **414** is shown when the "mute" button is activated while the audio is on.

[0067]FIG. 4B shows that the current active zone group includes five rooms: living room, dining room, kitchen, den and study. A "Volume" panel **430** for the zone group is displayed for the convenience of a user. In the display, a plurality of volume meters **431** is shown. One of the volume meters is for the entire zone group **432**. Other volume meters are for all the zone players in the group, one for each room or zone player. A scroll indicator is shown as a downward arrow **436** that indicates the screen is too small to hold all volume meters in one screen display. There are more hidden choices that can be viewed by scrolling down. The scrolling cursor **436** is highlighted (e.g., Den **434**). As a user scrolls down the list of volume meters **431**, the contents on "Volume" panel **440** includes the volume meter of the next zone player on the list (e.g., Study **444**). Similarly, when the scroll indicator is an upward arrow **442**, other hidden choices within the list can be viewed by scrolling up.

[0068]When a user adjusts the audio volume, only the highlighted zones or zone players are affected. If the highlighted selection is one zone player, the audio adjustment will only apply to that particular chosen player. If multiple zone players are selected, the adjustment applies to all of the chosen players similar to the volume adjustment to the group volume meter described below. The audio volume of all zone players in the zone group will be affected, if the highlighted selection is at the volume meter of the entire group **432**. Any audio volume adjustment to the zone group

applies to all of the zone players equally within the entire zone group. Depending on implementation, the relative difference of the audio volume among zone players in the group remains unchanged either in percentage or graphic strength.

[0069]FIG. 5 shows a flowchart or process **500** of implementing one embodiment of the present invention for manipulating zone players. The process **500**, which is preferably understood in conjunction with the previous figures especially with FIGS. 2B, 2C, 3A and 3B, may be implemented in software, hardware, or a combination of both. According to one embodiment, an application module implementing the process **500** is embedded in a controller, for example, the device **240** of FIG. 2C. The module may be loaded in the memory **282** to be executed by the microcontroller (processor) **276** and operating in conjunction with user input commands via the input interface **278**.

[0070]The process **500** starts with a display at **502** showing a list of zone players or existing zone groups, if there are any. When the available zone players and zone groups in the list is too long to be presented on the display, a scroll indicator will be displayed beside the list. A user may access the hidden items within the list by scrolling either upward or downward. At **503**, the process **500** splits into two branches based on the following tasks: 1) grouping a plurality of zone players to form a zone group, or 2) de-grouping a zone group.

[0071]If the process **500** performs the grouping task, the process moves onto **504**. The user selects one of the zone players as a zone group head or the zone groups from the list. Once the selection is made and a key is activated (e.g., a soft button **306** as shown in FIG. 3A), a new list (e.g., screen **308** as shown in FIG. 3A) showing all of the zone players and zone groups that are eligible to be grouped with the selection at **504** is displayed at **508**. In one embodiment as shown in FIG. 3A, when the zone player "Zone 2" is selected as the zone group head in a four-zone audio system, the eligible zone players are all other zone players ("Zone 1", "Zone 3" and "Zone 4") except for the zone player "Zone 2". At **510**, the end user is then given the option to select one or more of the eligible zone players (e.g., "Zone 4" in FIG. 3A) or one of the eligible zone groups to be grouped into the selection at **504**.

[0072]At **512**, the user has the option to confirm to accept or to discard the selection made at **510**. When a confirmation is made, the process **500** creates the zone group by synchronizing all of the zone players in the zone group at **514**. In one embodiment, the synchronization is performed first to determine the audio source in the selected player to be grouped (e.g., Zone 4 in FIG. 3A). Then the audio source is transmitted to all other zone players in the same zone group before playing the audio source synchronously. In the meantime, this newly formed zone group configuration is updated. For example, the zone group configuration is saved to the memory **206** on the zone player **200** of FIG. 2A via the wireless communication. After the zone player in the newly formed zone group has been synchronized, the process **500** moves back to **502**. An updated list of available zone players and zone groups is displayed. As an example shown in "Zone Menu" **312** of FIG. 3A, the newly formed zone group is listed as one of the items.

[0073]Going back to **512**, if the selection made at **510** can not be confirmed or is to be discarded, the process **500** goes back to **502** without updating any zone group configuration. In this case, the original list is intact (e.g., "Zone Menu" **302** of FIG. 3A).

[0074]Going back to the grouping task test at **503**, when the process **500** performs the de-grouping task, the process **500** moves to **524**. A user selects one zone group from the first list. Once the selection is made, a list (e.g., screen **328** as shown in FIG. 3B) showing all of the zone players in the selected zone group is displayed at **528**. In one embodiment as shown in FIG. 3B, "Zone 2+Zone 4" is the selected zone group, the zone players in the selected zone group are "Zone 2" and "Zone 4". At **530**, the end user selects one or more of the zone players (e.g., Zone 4) from the list to be disassociated from the zone group. At **532**, the user has the option to confirm or to discard the selection made at **530**.

[0075]When the selection is confirmed, the process **500** updates the selected zone group by disassociating the zone player from the zone group at **534**. As a result of the disassociation, the audio source being played in the zone group is no longer available to the disassociated zone player. In the meantime, the updated zone group configuration is saved. For example, the zone configuration is saved to the memory **206** on the zone player **200** (FIG. 2A). After the zone

player has been disassociated, the process **500** moves back to **502**. The list of available zone players and zone groups is displayed. This time the newly updated zone group is listed as one of the items (e.g., "Zone Menu" **332** of FIG. 3B).

[0076]Going back to **532**, if the selection made at **530** is to be discarded, the process **500** moves back to **502** directly without updating the zone group configuration. In this case, the original list is presented (e.g., "Zone Menu" **322** of FIG. 3B).

[0077]Referring now to FIG. 6, there is shown a flowchart or process **600** of controlling audio volume of a plurality of zone players in a zone group. The process **600**, which is preferably understood in conjunction with the previous figures especially with FIGS. 2B, 2C, 4A and 4B, may be implemented in software, hardware, or a combination of both. According to one embodiment, an application module implementing the process **600** is embedded in a controller, for example, the device **240** of FIG. 2C. The module may be loaded in the memory **282** to be executed by the microcontroller (processor) **276** and operating in conjunction with user input commands. In one embodiment, the module is configured to control the audio volume of a group of zone players. It should be noted that zone group and a group of zone players are used interchangeably in the description for FIG. 6.

[0078]At **605**, the process **600** starts when one of the volume control buttons, for example, "mute" button **262** or "volume up/down" button **264**, on the controller **240** of FIG. 2B, is activated. The process **600** splits into two branches depending on whether a single zone player or a group of zone players is to be controlled at **610**.

[0079]If it is for a single zone player, a volume meter (e.g., "Volume" panel **410** in FIG. 4A) is presented at **612**. At **614**, the end user has option to adjust the volume for the zone player with one of the volume control buttons. The volume control signals are sent from the controller **240** (FIG. 2C) to the zone player **200** (FIG. 2A). In one embodiment, the volume panel displays a moving volume meter showing an increasing or decreasing bar as the audio volume of the selected zone player is adjusted up or down. In another embodiment, the mute icon is shown instead of a volume meter, when the "mute" button is activated while the audio is on.

[0080]At **616**, the process **600** is waiting for a user's command. If a predetermined amount of time (e.g., 1 second) has lapsed, the process **600** ends, which means the user is not going to change the volume. Otherwise, the process **600** goes back to **612** waiting for another action from the end user.

[0081]Referring back to **610**, if process **600** is for a group of zone players, then the process **600** moves to the zone group branch at **622**, in which a plurality of volume meters is presented. The plurality of volume meters includes one for each of the zone players in the zone group, plus one more for the entire zone group. In one embodiment as shown in FIG. 4B, a "Volume" panel **430** for a plurality of zone players in a zone group is presented. When the screen is too small to display all the zone players, a scroll indicator is displayed beside the list of the volume meters to indicate that there are hidden volume meters. At **624**, the user selects one of the volume meters. At **626**, the audio volume is adjusted with one of the volume control buttons. When the volume adjustment is made to one of the zone players, only the selected zone player is affected. The audio volume of the rest of the zone players remains unchanged. However, when the volume adjustment is made to the zone group, the entire group will respond to the volume adjustment in an identical scale. In one embodiment, the identical scale is based on percentage of the audio volume. In another embodiment, the identical scale is based on graphic representation of the volume meter.

[0082]In one embodiment, an end user increases the audio volume for the zone group by 5%. The volume for each of the zone players in the zone group will be increased by 5%, and the relative volume loudness difference among each of the zone players remains unchanged. In another embodiment, if a user had muted one of the zone players of the zone group, the volume of all other zone players would have been unchanged.

[0083]The group audio volume is calculated based on a predetermined formula. In one embodiment, the group audio volume is the averaged value of the audio volume of all the zone players within the zone group. In another embodiment, the median value may be chosen as the group audio volume. The user uses a scrolling device (e.g., scroll

wheel **250** of FIG. 2B) to select a zone player or the entire zone group and then adjust the volume with one of the volume control buttons.

[0084]At **628**, the process **600** is waiting for a user's command. If a predetermined amount of time has lapsed, the process **600** ends, which means the user is not going to change the volume of the zone group. Otherwise, the process **600** goes back to **622** waiting for another action from the end user.

[0085]FIGS. 7A-7D are a series of screenshots according to one embodiment of the present invention on a computing device on a network. The computing device may correspond to the device **110** of FIG. 1 and be configured to control operations of the zone players installed in a complex. With a larger screen of the computing device than that of a portable controller, the graphic user interface on the larger screen appears different from that, for example, shown in FIGS. 3A-4B, the underlying principle nevertheless does not depart from the above description for the portable controller. A user is able to control any one or all of the zone players from the computing device. FIG. 7A shows all individual available zone players with the one in the Dining Room being selected to play a track entitled "A Charlie Brown Christmas". FIG. 7B shows a pop-up window listing remaining available players to be grouped with the one in the Dining Room. Depending on a desirable group, the user can select from the remaining available players to be grouped with the one in the Dining Room to form a zone group. FIG. 7C shows, as a result, the players in the Dining Room and the living room are in one group and play synchronously a song entitled "Christmas time is here". FIG. 7D shows the control of some exemplary acoustic characteristics of the zone players in a group with the volume being controlled.

[0086]The present invention can be implemented in many ways, each of which may yield one or more of the following benefits, advantages or features. One of them is a mechanism provided to enable a user to remotely control audio characteristics of the zone players either as a group or as an individual player. Second, an interactive graphic user interface is provided to enable a user to manage, create, delete or modify zone groups. Another one of the benefits, advantages or features is to provide a user interface to facilitate a user to control audio characteristics of an individual zone player or a group of zone players. Other benefits, advantages or features can be appreciated by those skilled in the art given the detailed description herein.

[0087]While the present invention has been described with reference to specific embodiments, the description is illustrative of the invention and is not to be construed as limiting the invention. Various modifications to the present invention can be made to the preferred embodiments by those skilled in the art without departing from the true spirit and scope of the invention as defined by the appended claim. For example, the present invention can be implemented in a multi-zone multimedia system providing other than audio entertainment. Accordingly, the scope of the present invention is defined by the appended claims rather than the forgoing description of embodiments.

ENGLISH-CLAIMS:

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We claim:

1. A method for controlling a plurality of players, the method comprising:

• -

displaying on a screen a first list showing at least available players;

• -

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

- -
forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and
- -
synchronizing all players in the zone group;
- -
adjusting a volume meter represented by an averaged value of audio volumes of the slayers in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of slayers synchronously in accordance with an adjustment made by a user.

2. The method of claim 1, wherein the first list becomes scrollable, when the available players do not fit in the screen.

3. The method of claim 1, wherein said synchronizing all players in the zone group comprises:

- -
determining an audio source for the zone group;
- -
making the audio source available to each of the players in the zone group; and
- -
playing the audio source synchronously in all players in the zone group.

4. The method of claim 3, wherein said determining an audio source for the zone comprises selecting the audio source being played or ready to be played by the zone group head.

5. The method of claim 3, wherein said of determining an audio source for the zone comprises selecting the audio source being played or ready to be played by one of the players in the zone group.

6. The method of claim 3, wherein said making of the audio source available comprises:

- -
determining whether the audio source is available locally; and
- -
retrieving the audio source from a device on a network, if the audio source is not available locally.

7. The method of claim 6, wherein said making of the audio source available comprises:

- -
determining the audio source from one of the players in the zone group; and
- -
causing the audio source available to every other player in the zone group.

8. The method of claim 1, wherein said synchronizing of all players in the zone group comprises:

- -
causing all players in the zone group to play an identical audio source; and
- -
presenting the zone group in a manner that indicates a grouping.

9. The method of claim 8, wherein the manner includes one or more of highlighting, colors, explicit texts and graphs.

10. The method of claim 1, wherein the first list further shows at least one zone group.

11. The method of claim 10, wherein the zone group includes at least two players.

12. The method of claim 9, wherein a configuration of the zone group is stored in at least one of the players or a controller for remotely controlling one or more of the players, the configuration including information on how the two players are grouped.

13. The method of claim 8, further including:

- -
selecting the zone group to be de-grouped from the first list;
- -
displaying on the screen another list showing all the players within the zone group to be de-grouped;
- -
selecting one or more players from the another list; and
- -

disassociating the selected players from the zone group.

14. The method of claim 13, wherein said disassociating the selected players comprises making the selected players available for grouping with a zone group.

15. The method of claim 13, wherein the another list becomes scrollable, when all the players within the zone group to be de-grouped do not fit in the screen.

16. A method for controlling a plurality of players, the method comprising:

- -
 displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, when there is such a group; and
- -
 adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the players in the group, and said adjusting of the one of the volume meters includes

changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

17. The method of claim 16, wherein said adjusting the one of the volume meters includes:

- -
 causing the audio volume to be adjusted in accordance with an adjustment to the volume meter; or
- -
 causing the audio volume to be off, when a mute button is activated while the audio volume is on;
 and
- -
 causing the audio volume to be on, when a mute button is activated while the audio volume is off.

18. The method of claim 16, further comprising adjusting the one of the volume meters for the group of players in a predetermined manner that appears that the group of players are being adjusted at the same time.

19. The method of claim 16, further comprising maintaining relative volume loudness difference among each of the players in the group.

20. The method of claim 16, further comprising playing an identical audio source in the group of players.

21. The method of claim 20, wherein the audio source is retrieved in form of audio data packets over the network.

22. The method of claim 21, wherein at least part of the audio source is retrieved or being streamed from one of the players.

23. The method of claim 16, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing an equal change to a volume of each of the players in the group.

24. The method of claim 16, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing a predetermined unit change in volume for ever action by a user.

25. An apparatus for controlling a plurality of players, the apparatus comprising:

- -
a screen;
- -
a screen driver commanding the screen;
- -
an input interface;
- -
a network interface;
- -
a memory for storing code for an application module;
- -
a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:
 - -
displaying on a screen a first list showing at least available players;
 - -
displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group, wherein any one of the players in the group serves as a zone group head;
 - -
synchronizing all players in the zone group in accordance with the zone group head; and

- -

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

26. The apparatus of claim 25, wherein the first list becomes scrollable, when the available players do not fit in the screen.

27. The apparatus of claim 25, wherein said synchronizing all players in the zone group comprises:

- -

determining an audio source for the zone group;

- -

making the audio source available to each of the players in the zone group; and

- -

playing the audio source synchronously in all players in the zone group.

28. The apparatus of claim 27, wherein said determining an audio source for the zone comprises selecting the audio source being played or ready to be played by the zone group head.

29. The apparatus of claim 27, wherein said determining an audio source for the zone comprises selecting the audio source being played or ready to be played by one of the players in the zone group.

30. The apparatus of claim 27, wherein said making the audio source available comprises:

- -

determining whether the audio source is available locally; and

- -

retrieving the audio source from a device on a network, if the audio source is not available locally.

31. The apparatus of claim 27, wherein said making the audio source available comprises:

- -

determining the audio source from one of the players in the zone group; and

- -

causing the audio source available to every other player in the zone group.

32. The apparatus of claim 25, wherein said synchronizing all players in the zone group comprises:

- -

causing all players in the zone group to play an identical audio source; and

- -

presenting the zone group in a manner that indicates a grouping.

33. The apparatus of claim 32, wherein the manner includes one or more of highlighting, colors, explicit texts and graphs in the screen.

34. The apparatus of claim 25, wherein the first list further shows at least one zone group.

35. The apparatus of claim 25, wherein the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:

- -

selecting the zone group to be de-grouped from the first list;

- -

displaying on the screen an another list showing all the players within the zone group to be de-grouped;

- -

selecting one or more players from the another list; and

- -

disassociating the selected players from the zone group.

36. The apparatus of claim 35, wherein said disassociating the selected players comprises making the selected players available for grouping with a zone group.

37. The apparatus of claim 35, wherein the another list becomes scrollable, when all the players within the zone group to be de-grouped do not fit in the screen.

38. An apparatus for manipulating a plurality of players, the apparatus comprising:

- -
a screen;
- -
a screen driver commanding the screen;
- -
an input interface;
- -
a network interface;
- -
a memory for storing code for an application module;
- -
a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:
 - -
displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such a group; and
 - -
adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the players in the group, and said adjusting of the one of the volume meters includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

39. The apparatus of claim 38, wherein said adjusting the one of the volume meters includes:

- -
causing the audio volume to be adjusted in accordance with an adjustment to the volume meter; or
- -
causing the audio volume to be off, when a mute button is activated while the audio volume is on;

and

- -

causing the audio volume to be on, when a mute button is activated while the audio volume is off.

40. The apparatus of claim 38, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes:

- -

changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

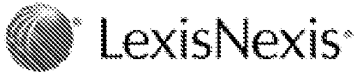
41. The apparatus of claim 38, wherein the processor executing the code in the memory causes the application module and the screen driver to perform operations of adjusting the one of the volume meters for the group of players in a predetermined manner that appears that the group of players are being adjusted at the same time.

42. The apparatus of claim 38, wherein the processor executing the code in the memory causes the application module and the screen driver to perform operations of maintaining relative volume loudness difference among each of the players in the group.

43. The apparatus of claim 38, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing an equal change to a volume of each of the players in the group.

44. The apparatus of claim 38, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing a predetermined unit change in volume for every action by a user.

LOAD-DATE: July 8, 2017



User Name: RENEE PRESTON

Date and Time: Tuesday, July 11, 2017 4:27:00 PM EDT

Job Number: 50315850

Documents (2)

1. *Sonos, Inc. v. D&M Holdings, Inc., 2017 U.S. Dist. LEXIS 4605*

Client/Matter: -None-

Search Terms: 7571014 or 7,571,014

Search Type: Terms and Connectors

Narrowed by:

Content Type
Cases

Narrowed by
-None-

2. *Sonos, Inc. v. D&M Holdings, Inc., 2017 U.S. Dist. LEXIS 35272*

Client/Matter: -None-

Search Terms: 7571014 or 7,571,014

Search Type: Terms and Connectors

Narrowed by:

Content Type
Cases

Narrowed by
-None-

Sonos, Inc. v. D&M Holdings, Inc.

United States District Court for the District of Delaware

January 12, 2017, Decided; January 12, 2017, Filed

Civil Action No. 1:14-cv-01330-RGA

Reporter

2017 U.S. Dist. LEXIS 4605 *

SONOS, INC., Plaintiff, v. D&M HOLDINGS, INC. d/b/a
THE D+M GROUP, D&M HOLDINGS U.S. INC., and
DENON ELECTRONICS (USA), LLC, Defendant.

Prior History: *Sonos, Inc. v. D&M Holdings, Inc.*, 2015
U.S. Dist. LEXIS 119718 (D. Del., Sept. 9, 2015)

Core Terms

patent, player, playback, zone, clock, specification,
proposed construction, network, comprising, configured,
devices, terms, plurality, pairing, output, equalization,
connector, interface, adjusting, frame, audio signal,
disputed term, independently, synchrony, construe,
intrinsic evidence, continuation, synchronous,
multimedia, volume

Counsel: [*1] For Plaintiff: Phillip A. Rovner, Esq.,
POTTER ANDERSON & CORROON LLP, Wilmington,
DE; Jonathan A. Choa, Esq., POTTER ANDERSON &
CORROON LLP, Wilmington, DE; George I. Lee, Esq.,
LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL;
Sean M. Sullivan, Esq., LEE SULLIVAN SHEA &
SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued),
LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J.
Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP,
Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN
SHEA & SMITH, LLP, Chicago, IL.

For Defendants: Jack B. Blumenfeld, Esq., MORRIS
NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE;
Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT &
TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq.
(argued), JACKSON WALKER LLP, Dallas, TX;
Matthew C. Acosta, Esq. (argued), JACKSON WALKER
LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON
WALKER LLP, Dallas, TX; David Folsom, Esq.,
JACKSON WALKER LLP, Texarkana, TX.

Judges: Richard G. Andrews, UNITED STATES

DISTRICT JUDGE.

Opinion by: Richard G. Andrews

Opinion

MEMORANDUM OPINION

January 12, 2017

ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court is the issue of claim
construction of multiple terms in U.S. Patent Nos.
7,571,014 ("the '014 Patent"), 8,588,949 ("the '949
Patent"), 8,843,224 ("the '224 Patent"), 8,938,312 ("the
'312 Patent"), 8,938,637 ("the '637 Patent"), 9,042,556
("the '556 Patent"), 9,195,258 ("the '258 Patent"),
9,202,509 ("the '509 Patent"), 9,213,357 ("the '357
Patent"), 9,219,959 ("the '959 Patent"), and D559,197
("the '197 Patent"). The Court has considered the
Parties' [*2] Joint Claim Construction Brief. (D.I. 201).
The Court heard oral argument on December 14, 2016.
(D.I. 206) ("Hr'g Tr.").

I. BACKGROUND

Plaintiff filed these actions on October 21, 2014, alleging
infringement of four patents. (D.I. 1). Plaintiff
subsequently amended its complaint (D.I. 6, 31, 102) to
assert a total of twelve patents. The parties stipulated to
dismissal of one asserted patent with prejudice on
August 25, 2016. (D.I. 150). The remaining patents-in-
suit claim devices and methods for controlling audio
devices. One of the asserted patents, the '197 Patent, is
a design patent with a single claim for a control strip.
The only claim of the '197 patent was rejected after
completion of an *ex parte* re-examination on June 29,
2016. (D.I. 208).

RENEE PRESTON

II. LEGAL STANDARD

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "[T]here is no magic formula or catechism for conducting claim construction." Instead, the court is free to attach the appropriate weight to appropriate sources "in light of the statutes and policies that inform patent law." *SoftView LLC v. Apple Inc.*, 2013 U.S. Dist. LEXIS 125893, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). [*3] When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning.... [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

When a court relies solely upon the intrinsic evidence—the [*4] patent claims, the specification, and the prosecution history—the court's construction is a determination of law. See *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841, 190 L. Ed. 2d 719 (2015). The court may also make factual findings based upon consideration of extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317-19 (internal quotation marks omitted). Extrinsic evidence may assist the court in understanding

the underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic evidence, however, is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Qsram GmbH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

III. CONSTRUCTION OF DISPUTED TERMS

A. The Patents-in-Suit

The '014 patent is directed to a method and apparatus for controlling multimedia players in a multi-zone [*5] system. Claim 1 is representative and reads as follows:

A method for controlling a plurality of *players*, the method comprising:

displaying on a screen a first list showing at least available *players*;

displaying, when at least one of the *players* is selected as a zone group head, on the screen a second list showing at least some of the *players* that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more *players* from the at least some of the *players* are selected to join the zone group; and

synchronizing all *players* in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the *players* in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of *players* synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1) (disputed terms italicized).

The '949 patent is directed to a method and apparatus for adjusting volume levels in a multi-zone system. Claim 1 is representative and reads as follows:

A *multimedia* controller including a processor, the controller configured to:

provide a user interface for a *player* group, wherein the *player* group includes [*6] a plurality of *players* in a local area network, and wherein each *player* is an independent *playback device* configured to playback a *multimedia* output from a *multimedia* source;

accept via the user interface an input to facilitate formation of the *player* group, wherein the input to facilitate formation of the *player* group indicates that at least two of the plurality of *players* in the local area network are to be included in the *player* group;

for each of the plurality of *players* within the *player* group, accept via the user interface an input to adjust a volume associated with the *player*, wherein the input to adjust the volume associated with the *player* causes the corresponding independent *playback device* to adjust its volume; and

accept via the user interface an input to adjust a volume associated with the *player* group, wherein the input to adjust the volume associated with the group causes the corresponding independent *playback devices* in the *player* group to adjust their volumes.

('949 patent, claim 1) (disputed terms italicized).

The '224 patent is directed to a method and system for controlling amplifiers. Claim 1 is representative and reads as follows:

A method for controlling an audio amplifier, the method comprising: [*7]

receiving, by a *network interface*, a data packet over a network;

determining by a control module whether the received data packet either consists of *non-audio data* or comprises *audio data*; and responsively

powering on the audio amplifier from a powered off state when the data packet is determined to comprise *audio data*; and

maintaining the audio amplifier in the powered off state when the data packet is determined to consist of *non-audio data*.

('224 patent, claim 1) (disputed terms italicized).

The '312 patent is directed to technology for smart line-

in processing in an audio environment. Claim 1 is representative and reads as follows:

A *playback device* comprising:

a *line-in connector* for receiving a first audio signal;

a *network interface*;

a processor; and

a non-transitory computer readable storage medium having stored therein instructions executable by the processor to:

determine whether the first *audio signal* is present at the *line-in connector*;

in response to determining that the first *audio signal* is present at the *line-in connector*, (i) cease playback of a second *audio signal* being played by the *playback device*, wherein the second *audio signal* is not present at the *line-in connector*, and (ii) cause the *playback* [*8] *device* to play the first *audio signal*;

receive, via the *network interface*, a first instruction to stop the *playback device* from playing the first *audio signal* while the first *audio signal* is still present at the *line-in connector*;

determine that the first *audio signal* is no longer present at the *line-in connector*; and

in response to determining that the first *audio signal* is no longer present at the *line-in connector*, arm the *playback device* such that a subsequent presence of the first *audio signal* at the *line-in connector* causes the *playback device* to play the first *audio signal*.

('312 patent, claim 1) (disputed terms italicized).

The '637 patent is directed to systems and methods for synchronizing operations among independently clocked devices. Claim 1 is representative and reads as follows:

A digital data processing device comprising:

an interface to receive *multimedia* information arranged as a plurality of frames, each frame to include one or more samples and an *indication of when to play* the one or more samples in a frame; an information buffer to store the plurality of frames for play back by the digital data processing device,

wherein the digital data processing device is to receive *clock information* from [*9] a source device

and determine a time differential value between the received *clock information* and *clock information* associated with the digital data processing device, the time differential value to be applied with the *indication of when to play* each of the plurality of frames to store an updated *indication of when to play* each of the plurality of frames in the information buffer; and

an output to play back one or more samples in a frame from the information buffer according to the updated *indication of when to play* the frame,

wherein the digital data processing device is to adjust, based on a comparison between the updated *indication of when to play* the frame and a predicted time value for play back of the frame, a number of samples per frame that are to be played. ('637 patent, claim 1) (disputed terms italicized).

The '556 patent is directed to techniques for shaping sound based on speaker orientation. Claim 1 is representative and reads as follows:

A method for shaping sound, the method comprising:

receiving an *audio data stream* by a *playback device*;

determining an orientation and a configuration state of the *playback device*;

shaping sound output from a speaker transducer of the *playback device* using the [*10] *audio data stream* to reproduce at least one of (a) a first set of one or more channels or (b) a first range of frequencies based on a first orientation and the configuration state; and

shaping sound output from the speaker transducer of the *playback device* using the *audio data stream* to reproduce at least one of (a) a second set of one or more channels or (b) a second range of frequencies based on a second orientation and the configuration state,

wherein the configuration state comprises any of: not *paired*, not grouped, not consolidated, a *pairing* between the *playback device* and an additional *playback device*, a grouping of the *playback device* with an additional playback device, and a consolidation of the playback device with an additional playback device.

('556 patent, claim 1) (disputed terms italicized).

The '258 patent is directed to a system and method for synchronizing operations of independently clocked devices. Claim 1 is representative and reads as follows:

In a system comprising a plurality of controllers that are communicatively coupled via at least a local area network (LAN) with a plurality of *zone players* including a first *zone player* and a second *zone player*, a method comprising:

receiving, at the [*11] first *zone player*, control information from any one of the plurality of controllers via the LAN, wherein the received control information comprises a direction that instructs the first *zone player* to enter into a synchrony group with at least the second *zone player*;

in response to the direction, the first *zone player* entering into the synchrony group with the second *zone player*, wherein in the synchrony group, the first and second *zone players* are configured to play back audio in synchrony based at least in part on (i) *audio content*, (ii) *playback timing information* associated with the audio content that is generated by one of the first or second *zone players*, and (iii) *clock time information* for the one of the first or second *zone players*, and wherein the generated *playback timing information* and the *clock time information* are transmitted from the one of the first or second *zone players* to the other of the first or second *zone players*, wherein the first and second *zone players* remain *independently clocked* while playing back audio in synchrony; and

transmitting, by the first *zone player* to at least one of the plurality of controllers via the LAN, status information, wherein the status [*12] information comprises an indication of a status of the synchrony group.

('258 patent, claim 1) (disputed terms italicized).

The '509 patent is directed to a method for grouping or pairing networked audio devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A method comprising:

identifying, via a controller, a plurality of *playback devices* on a local area network (LAN), wherein at least one of the plurality of *playback devices* is configured to request an *audio data stream* from a source device in response to receipt of a command via the controller over the LAN;

instructing, via the controller over the LAN, at least one of the plurality of *playback devices* to process the requested *audio data stream* into at least one of a first and a second channel of the requested *audio data stream* and to reproduce a respective one of the first and the second channel, wherein the plurality of *playback devices*, when grouped, provide multi-channel sound, such that a first *playback device* in the group of the plurality of *playback devices* is configured as part of the group to reproduce the first channel of the requested *audio data stream* for the group and a second *playback device* [*13] in the group of the plurality of *playback devices* is configured as part of the group to reproduce the second channel of the requested *audio data stream* for the group; and

displaying, via the controller, an indication that each of the plurality of *playback devices* is configured to reproduce a respective channel.

('509 patent, claim 1) (disputed terms italicized).

The '357 patent is directed to a method for obtaining content from a remote source for playback. Claim 1 is representative and reads as follows:

A method comprising:

receiving, by a first *playback device* from a network device configured to control the *fast playback device* and communicatively coupled to the first *playback device* over a local area network (LAN), control information comprising an address identifying a location of *audio information* available at an *audio information* source, wherein the *audio information* source is outside of the LAN; and

after receiving the control information (i) obtaining, by the first *playback device* from the *audio information* source outside of the LAN, the *audio information*; (ii) transmitting, by the first *playback device* to a second *playback device*, the *audio information*, *playback timing information* associated with the [*14] *audio information*, and *device clock information* of the first *playback device*; and (iii) playing back, by the first *playback device*, the *audio information* in synchrony with the second *playback device* by using the *playback timing information* associated with the *audio information* and the *device clock information* of the first *playback device* to play back the *audio information*, wherein the first and second *playback devices* remain *independently clocked* during synchronous playback of the *audio information*.

('357 patent, claim 1) (disputed terms italicized).

The '959 patent is directed to a method for grouping, consolidating, and pairing networked playback devices to simulate a multi-channel listening environment. Claim 1 is representative and reads as follows:

A *playback device* configured to output audio in a multi-channel listening environment, *the playback device* comprising:

a network interface configured to receive audio data over a network;

a plurality of speaker drivers configured to output audio based on the *audio data*;
one or more processors; and

tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by the one or more processors, cause [*15] the *playback device* to (i) process the *audio data* before the *playback device* outputs audio from the plurality of speaker drivers, (ii) determine that a type of *pairing* of the playback device comprises one of at least a first type of *pairing* or a second type of *pairing*, (iii) configure the *playback device* to perform a first *equalization* of the audio data before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the first type of *pairing*, and (iv) configure the *playback device* to perform a second *equalization* of the *audio data* before outputting audio based on the *audio data* from the plurality of speaker drivers when the type of *pairing* is determined to comprise the second type of *pairing*.

('959 patent, claim 1) (disputed terms italicized).

B. Disputed Terms

1. "zone player"/"playback device"/"player"

a. *Plaintiff's proposed construction*: "A data network device configured to process and output audio"

b. *Defendants' proposed construction*: "A device configured to output sound waves"

c. *Court's construction*: "data network device configured to process and output audio"

These three terms appear in asserted claims in nine of the asserted [*16] patents, the '014 ("player"), '258

("zone player"), '357, '312, '637, '959, '949, '509, and '556 ("playback device") patents. The parties agree that the three terms should have the same construction and that the construction should be the same across all of the asserted patents. (D.I. 201 at 13).

As an initial matter, the parties dispute which of these patents may serve as intrinsic evidence to the other patents for the purposes of claim construction. Specifically, Defendants object to Plaintiff's reliance on the '258 patent, which was not filed until February 20, 2014, with respect to the earlier-filed patents, including the '014 patent, the earliest filed of the asserted patents. (D.I. 216-1 at 199). Plaintiff counters that the '258 patent shares a "formal familial relationship as 'sibling'" to the '014 patent and that both claim priority to U.S. Patent No. 8,234,395 (non-asserted) ("the '395 patent").¹ (D.I. 215 at 3). Plaintiff further asserts, and Defendants acknowledge, that the '258 patent and '395 patent share a common specification. (D.I. 215 at 4; D.I. 216-1 at 199). Defendants object in part on the basis that the '258 patent is the only patent that claims a "zone player," while the other patents, including the '395 patent, claim a "playback device" and a "player." (D.I. 216-1 at 199). It seems to [*17] me, however, that this objection is irrelevant since the parties agree that these three terms should have the same construction across all the asserted patents. (D.I. 201 at 13). Furthermore, although the claims of the '395 patent refer to a "playback device," the specification describes this device as a zone player. (See, e.g., '395 patent at 3:9-15).

The intrinsic evidence relevant for claim construction includes the prosecution history and prior art cited

during prosecution, and this necessarily includes ancestor patents incorporated by reference on the face of the patent. *Phillips*, 415 F.3d at 1317. The children and grandchildren of the '395 patent all incorporate the '395 patent by reference. Therefore, the specification of the '395 patent is intrinsic evidence to all the asserted patents in that family. Furthermore, the '395 patent is listed as prior art on the face of the '509, '959, and '556 patents. Only the '312 and '224 patents lack any connection to the '395 patent. Since the specification of the '258 patent is identical to that of the '395 patent, the '258 patent's specification is intrinsic evidence to all of the patents at issue except the '312 and '224 patents.

The parties first disagree as to whether the zone player outputs "sound waves" as Defendants insist or "audio" as Plaintiff asserts. As an initial matter, I will reject Defendant's construction [*18] as unreasonably broad as it is not only divorced from the invention as described in the asserted claims and the specifications, but it would also encompass all devices that have speakers. Furthermore, Defendant's construction would require that the zone player, in all embodiments, have an integrated speaker. I find no support for such a limitation. In fact, notably missing from both the claims and the specifications of all but one of the asserted patents is any mention of an integrated speaker. For example, the '014 patent states, "The zone player 200 includes a network interface 202, a processor 204, a memory module 206, an audio processing circuit 210, a digital signal processing module 212, an audio amplifier 214 and a RF interface 216." ('014 patent at 6:20-24). A speaker or speaker transducer is never mentioned in the descriptions of the device in this patent. In fact, the '395 patent, ancestor through continuation or continuation-in-part to five of the nine patents at issue in this construction, states that the zone player "may also be connected to . . . one or more audio reproduction devices." ('395 patent at 3:15-18). Furthermore, the zone player as claimed in all but one of the patents does not expressly include integrated [*19] speakers.² (See '258 patent, cl. 17; '312 patent, cl. 1; '357 patent, cl. 9; '959 patent, cl. 1; '637 patent, cl. 1). As to the '312 patent (the only patent for which the '395 patent is not intrinsic evidence), the specification clearly describes speakers as optional. ('312 patent at 7:28-35). The only asserted patent that claims a device that expressly includes a speaker transducer is the '556 patent, which does not share a familial relationship with any of the other asserted patents. ('556 patent, cl. 1). Defendants

¹ The '949 patent is a continuation of the '014 patent which is a continuation-in-part of the '395 patent. The '357 patent is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '258 patent is a continuation of U.S. Patent Nos. 9,213,356 (not asserted), which is a continuation of U.S. Patent No. 9,187,777 (not asserted) which is a continuation of the '395 patent. The '637 patent is a continuation of U.S. Patent No. 8,689,036 (not asserted), which is a continuation of U.S. Patent No. 8,370,678 (not asserted), which is a continuation of U.S. Patent No. 8,020,023 (not asserted), which is a continuation-in-part of the '395 patent. The '959 patent is a continuation-in-part of U.S. Patent No. 8,788,080 (not asserted), which is a continuation of the '509 patent. Neither the '959 patent nor the '509 patent bear a familial relationship to the '395 patent. The '312, '556, and '224 patents have no familial relationship to any of the other patents at issue in the construction of these terms.

² The '949 and '509 patents do not include device claims.

emphasized in their briefing and at oral argument Figure 1 from the '014 patent, which shows what they characterize as sound waves emanating from the zone player, as well as their understanding of the word "play" as requiring the production of sound waves. (D.I. 201 at 16, 22-23; Hr'g Tr. at 26:6-28:24). Given the intrinsic evidence discussed above, this evidence does not represent an unambiguous requirement that the zone player have an integrated speaker. While an integrated speaker is not excluded based on the claims and specifications of the various patents, it seems clear to me that one is not required and the claims of the patents clearly indicate when an integrated speaker is necessarily included as part of the zone player.

The parties further dispute whether the zone player is a network [*20] device that processes audio. The claims and specifications of the asserted patents substantially support Plaintiff's argument that the zone player is a network device that processes audio. The '395 patent describes the zone player in the context of a "network audio system". ('395 patent at 3:12). The same patent also characterizes the zone players as "digital data processing devices." (*Id.* at 2:1). The other patents in the '395 family characterize the zone player in a similar way. (See, e.g., '014 patent at 4:19-20, 6:20-24). The '312 patent both claims and describes a zone player that includes a network interface and an audio processing circuit. ('312 patent at 7:30-32, cl. 1). Therefore, the intrinsic evidence indicates that the zone player claimed is a network device that processes audio. I will adopt Plaintiff's proposed construction.

2. "network interface"

a. *Plaintiff's proposed construction*: "A physical component of a device that provides an interconnection with a data network"

b. *Defendants' proposed construction*: "A system component operable to receive data and provide it to the system"

c. *Court's construction*: "physical component of a device that provides an interconnection with a data network"

This term appears in the '258, '357, '014, '959, '312, and [*21] '224 patents. As discussed above, the first three of these are part of the '395 patent family. The latter three do not share a familial relationship with any of the other patents that use this term, although the '959

patent lists the '395 patent as prior art on its face. Defendants' primary argument as to the construction of this term is that the network interface need not be a component of the device itself and that including this in the construction would be an improper limitation. (D.I. 201 at 29). As support for their argument, Defendants offer a single claim from the '224 patent. (*Id.*) This claim is a method claim that recites a "method comprising: receiving, by a network interface, a data packet over a network." ('224 patent, claim 1). This method claim, however, does not say anything about which components the device in question may or may not contain. Claim 11 of the same patent, on the other hand, claims an "apparatus comprising: a network interface." (*Id.* at claim 11). In other words, the claim itself unambiguously contemplates that the network interface is a component of the zone player device. The other patents at issue contain similar language in their claims and specifications. (See '258 patent, cl. 17; '357 patent, cl. 9; '014 patent at 6:20-21; '959 patent, cl. 1; '312 patent, cl. 1). [*22] Furthermore, the specification of the '224 patent provides that "[t]he zone player includes a network interface," which "facilitates a data flow between a data network . . . and the zone player," which supports Plaintiff's position that the network interface allows for data flow between the device and the data network in both directions (*i.e.* both to and from the device) ('224 patent at 4:45-51). This construction is supported by the specifications of the other patents at issue. (See, e.g., '312 patent at 3:24-25; '395 patent at 24:36-41). Therefore, I will adopt Plaintiff's construction.

3. "paired"/"pairing"

a. *Plaintiff's proposed construction*: "A group of two or more playback devices that have different playback roles"

b. *Defendants' proposed construction*: "plain and ordinary meaning"

c. *Court's construction*: "configuration involving two or more playback devices that have different playback roles"

These terms appear in the '959 and '556 patents. Defendants' primary objection to Plaintiff's proposed construction is the requirement that the devices in the pair have different playback roles. Defendants argue that this term should have its plain and ordinary meaning, citing a dictionary definition of "pair" as support for their contention that "pair," [*23] as

commonly understood, does not require different roles. (D.I. 201 at 66). The definition Defendants cite, however, is completely divorced from the context of the patents. Furthermore, the definition fails to recognize that the individual items in many "pairs" of ordinary objects often do, in fact, have different roles. A pair of shoes or gloves is commonly understood to have two items that each have a different function (*i.e.* a left and a right). Certainly there are other ways to use "pair" that do not require this limitation, but this example illustrates that this term must be construed in the context of the patents. I find there is substantial support for Plaintiff's construction in the intrinsic evidence. Pairing is repeatedly described in the specifications as a configuration in which the paired playback devices have distinct roles (*e.g.*, left/right/left/right/subwoofer, etc.). (*See, e.g.*, '959 patent at 3:19-23, 6:32-34; '556 patent at 6:32, 16:30-32). Defendants would construe this term such that "group" and "pair" take the same meaning. (Hr'g Tr. at 116:19-22). However, the patents contemplate that "group" and "pair" refer to distinct configurations. ('556 patent at 6:64-66, cl. 1; '959 patent at 3:58-61). Therefore, [*24] I will adopt Plaintiff's proposed construction.

4. "multimedia"

a. *Plaintiff's proposed construction*: "Any type of media that comprises audio (including audio alone)"

b. *Defendants' proposed construction*: "More than one type of media content, such as music, photos, and video"

c. *Court's construction*: "Any type of media that comprises audio (including audio alone)"

This term appears in the '949 and '637 patents. These patents, as discussed above, bear no formal familial relationship. The '637 patent does list the '949 patent as prior art on its face, however.

The parties' dispute centers on whether multimedia can encompass audio alone. Defendants cite primarily to extrinsic evidence in the form of a dictionary definition in support of their proposed construction. I find it is unnecessary to resort to a dictionary definition in construing this term, however, since the specifications provide sufficient evidence as to the intended meaning of the term as used in these patents; it was intended to include media comprising only audio. For example, the specification of the '949 patent states, "There are a

number of multimedia players of which three examples 102, 104 and 106 are shown as audio devices." ('949 patent at 4:60-63). Defendants' proposed construction [*25] would read out this preferred embodiment. Defendants attempt to counter this with a statement from the same specification: "Each zone player can play a type of media (such as music, photographs and video) independently." (*Id.* at 9:50-52). This statement, however, does not use the term "multimedia." Nor does it contradict the specification's earlier description of an audio device as a multimedia player. It seems clear to me from the specification that the applicant used the term "multimedia" to include a device that plays only audio and the applicant's understanding of the meaning of the term controls even if it is not consistent with Defendants' preferred dictionary definition. The '637 patent's specification does not contain this same statement, but it does describe the claimed "digital data processing devices" which "receive multimedia information" as "zone players" which are part of a "network audio system." ('637 patent at 2:35-36, cl. 1). Therefore, I will adopt Plaintiff's proposed construction.

5. "audio signal"/"audio data"/"audio content"/"audio data stream"/"audio information"

a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"

b. *Defendants' proposed construction*: [*26] "encoded sound and not the sound itself"

c. *Court's construction*: "no construction necessary"

These terms appear in claims in eight of the asserted patents. Defendants propose to limit the meaning of all of the listed terms to exclude sound waves, but they do not propose any actual construction of the individual terms beyond this limitation. Plaintiff argues that the terms are readily understandable by a jury by considering the context in which they are used. (D.I. 201 at 30). Plaintiff further argues that the patents do not support importing Defendants' proposed limitation for all of the terms. (*Id.* at 30-31). I agree with Plaintiff that some of the terms are used in such a way as to include sound waves. For example, in the '556 patent, claim 28 states that "the speaker transducer is to receive and output the audio data stream." Since a transducer outputs sound waves, this term as used necessarily encompasses sound wave. Furthermore, claim 1 of the '357 patent requires "playback of the audio information"

by the playback device. I have already determined in construing the term "playback device" that the device may output audio either in the form of an audio signal to an external speaker or as sound waves from an integrated [*27] speaker. Therefore, I read this claim to indicate that "audio information" may take the form of either an electrical signal or sound waves. It seems to me that whether each of the terms encompasses actual sound waves can readily be deduced from the context of the claims and specification. Therefore, I reject Defendants' proposed construction and decline to construe any of these terms.

6. "independently clocked"

a. *Plaintiff's proposed construction*: "The phrases 'wherein the first and second zone players remain independently clocked while playing back audio in synchrony' and 'wherein the zone players in the synchrony group remain independently clocked while playing back audio in synchrony' mean that 'each zone player operates in accordance with its own respective clock during synchronous playback.'"

b. *Defendants' proposed construction*: "Operating autonomously to any external clock"

c. *Court's construction*: "operating in accordance with their own respective clocks during synchronous playback"

This term appears in asserted claims in the '258 and '357 patents. As discussed above, both of these patents trace direct lineage through straight continuations to the '395 patent. Both patents also share a common specification [*28] with the exception of the incorporation by Reference section.

Defendants expend considerable effort to distinguish between the device clock and the digital-to-analog converter (DAC) clock, a distinction they consider "critical to the construction of the term." (D.I. 201 at 63). Defendants insist that the clock in the phrase "independently clocked" necessarily refers to the device clock. (*Id.* at 56). Defendants fail to cite to any intrinsic evidence supporting this position, however. I can find nothing in the claims or the specification that would indicate that "independently clocked" refers to the device clock. Rather, it is the DAC clock that is repeatedly referred to as being maintained independently by each device in the embodiments

described in the specifications of these two patents. The device clock, on the other hand, never appears in the discussion of synchronous playback. For example, the specification of the '258 patent describes the DAC clock information from one player being transmitted to another player. ('258 patent at 23:8-9,24:24-26). The second player calculates the difference between the reading of its own DAC clock and that of the first player and uses that time difference in synchronizing playback [*29] with the first player. (*Id.* at 24:27-31). In this embodiment, each player maintains its own independent DAC clock during synchronous playback. In another embodiment, the second player periodically adjusts its own DAC clock to match that of the first player. (*Id.* at 33:22-35). In this embodiment, the players are still independently clocked in that each player maintains its own independent DAC clock during synchronous playback. Construed in the context of the specification, therefore, I understand "independently clocked" to mean simply that the players in a synchrony group each operate (and play back audio) in accordance with their own internal DAC clocks even while receiving DAC clock information from other players (and possibly adjusting their own clocks according to that information).

In support of their proposed construction, Defendants cite to their preferred dictionary definition of "independent" to require "autonomous" operation. (D.I. 201 at 57). I reject this limitation as inconsistent with the intrinsic evidence. As discussed above, each player in the synchrony group uses clock information from another player in the synchrony group. This, it seems to me, is inconsistent with [*30] the notion of "operating autonomously to any external clock." Rather, as discussed above, the players use the clock information obtained from other players to ensure synchronous playback but each player uses its own clock (rather than that of another player) to control playback. Therefore, I will adopt Plaintiff's construction.

7. "clock information"/"clock time information"

a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"

b. *Defendants' proposed construction*: "A time reference identifying a specific point in time at a minimum resolution of time"

c. *Court's construction*: decline to construe at this time.

"indication of when to play one or more samples in a frame"/"indication of when to play the frame"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "Indication of a frame-specific minimum resolution of time"
- c. *Court's construction*: decline to construe at this time.

As an initial matter, I will reject Defendants' constructions for both of these terms as they introduce limitations not supported by the patents, including words, such as "minimum resolution," that do not [*31] appear in any of the patents. It seems to me that Defendants' proposal introduces additional and unnecessary confusion as to the meaning of these terms. However, I do believe that these terms need to be construed, and "plain and ordinary" meaning would provide insufficient guidance for a jury. Therefore, I will not construe these terms at this time. Rather, I invite the parties to submit a proposed schedule for additional briefing on these terms.

8. "playback timing information"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "A clock time associated with a frame of audio data"
- c. *Court's construction*: decline to construe at this time

As with the two previous terms, Defendants seek to import a limitation that is not supported by the intrinsic evidence. The limitation that the "playback timing information" is associated with a "frame" of data appears in dependent claim 10 in the '258 patent but not in independent claim 1 from which claim 10 depends. Because of the presence of this limitation in the dependent claim, I will presume that the independent claim is not so limited. *Phillips 415 F.3d at 1315*. Therefore, I will reject Defendants' proposed [*32] construction. As with the previous two terms, however, I do think this term should be construed, so I again invite the parties to submit a proposed schedule for additional briefing on these terms.

9. "line in connector"

- a. *Plaintiff's proposed construction*: "plain and ordinary meaning/no construction necessary"
- b. *Defendants' proposed construction*: "Analog TRS-type connector/socket"
- c. *Court's construction*: "plain and ordinary meaning"

This term appears in the '312 patent. Defendants make two arguments in support of limiting a line in connector to an analog TRS-type connector. First, Defendants point to the specification, which lists this type of connector as an example of a line in connector. (D.I. 201 at 74). Second, Defendants argue that the applicant disclaimed any digital inputs as line in connectors during prosecution in order to overcome a prior art rejection. (*Id.* at 74-76). While Defendants are correct that the specification lists this type of connector as one example of a line in connector, there is no indication in the specification that this is the only type of line in connector contemplated by the patent. In fact, the specification states, "Other types of connectors may also be used depending on [*33] the application." ('312 patent at 22:67-23:2). As to the prosecution history disclaimer argument, I can find no clear indication that the applicant disclaimed digital inputs. Therefore, I will construe this term to have its plain and ordinary meaning and Defendants are prohibited from arguing that the term is limited to an analog TRS-type connector/socket.

11. "equalization"

- a. *Plaintiff's proposed construction*: "The phrase 'performing a first [second] equalization' means 'any of turning on or off (or effectively muting) one or more specific speaker drivers, changing the channel output of one or more speaker drivers, changing the frequency response of one or more specific speaker drivers, changing the amplifier gain of any particular speaker driver, and changing the amplifier gain of the playback device as a whole.'"
- b. *Defendants' proposed construction*: "a set of frequency-dependent or speaker-driver dependent parameters that affect a range and/or power level of frequencies within a channel"
- c. *Court's construction*: "modifying the output audio data by performing one or more of the following:

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adjusting one or more parameters related to speaker drivers, such as gain, frequency response, channel output, [*34] phase, or time delay; adjusting amplifier gain of the playback device; or using one or more filters."

This term appears in the '959 patent. As an initial matter, I reject Defendants' proposed construction insofar as it attempts to equate equalization (a process) with a set of parameters (a thing). Plaintiff argues that the inventor defined equalization within the specification. (D.I. 201 at 70, 72). Plaintiff also complains that Defendants' proposed construction is too narrow and excludes some equalization methods disclosed in the patent. (*Id.* at 70). Defendants advocate for their preferred dictionary definition for the term "equalization," arguing that the specification discloses a meaning for "changing the equalization of the playback device" rather than what is claimed, "performing an equalization of the audio data." (*Id.* at 70). This seems to me to be a distinction without a difference. The inventor appears to consider performing an equalization of the audio data to be equivalent to performing an equalization of the playback device. For example, claim 2 of the '959 patent states, "wherein performing the first equalization comprises using a first type of pass filter to modify the audio data." The specification describes [*35] this same equalization by stating "a first equalization of a playback device might include using a first type of pass filter to modify the output." ('959 patent at 16:40-42). Based on the intrinsic evidence, it seems to me that equalization of the playback device necessarily means equalization of the audio data.

This does not mean, however that the statement in the specification cited by Plaintiff constitutes lexicography. The specification provides that equalization "might include" the types of changes listed in Plaintiff's proposed construction. (*Id.* at 16:20-27). The specification also provides for additional adjustments that constitute equalization, including adjusting frequency strengths, phases, time delays, and the use of filters. (*Id.* at 16:28-47). For this reason, I will reject Defendants' proposed construction as too narrow. Plaintiff's proposed construction, however, simply parrots a portion of the specification and is also narrower than what is disclosed in the specification. Therefore, I will construe equalization to mean "modifying the output audio data by performing one or more of the following: adjusting one or more parameters related to speaker drivers, such as gain, frequency [*36] response, channel output, phase, or time delay; adjusting amplifier gain of the playback device; or using

one or more filters."

12. The scope of the design claimed in the '197 Patent

a. *Plaintiff's proposed construction*: "A design for a control strip comprising the following ornamental features: (1) a first button having (a) a substantially square shape with rounded corners and (b) indicia of an audio output state; (2) a second button having (a) a substantially non-square, rectangular shape with rounded corners and (b) indicia of an increase and decrease for volume; (3) wherein the first button and the second button (a) are oriented in a substantially up-and-down configuration, (b) are substantially aligned about the same axis, and (c) have substantially the same width; and (4) wherein the first button and the second button are set apart from any other buttons."

b. *Defendants' proposed construction*: "The ornamental design as shown in all of the drawings as a whole, excluding functional elements such as '+' '-' 'vol' and mute symbols"

c. *Court's construction*: decline to construe at this time.

In light of the final rejection issued in the *ex parte* reexamination of this patent, I decline to construe [*37] the scope of the design patent at this time.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.

/s/ Richard G. Andrews

End of Document

Sonos, Inc. v. D&M Holdings Inc.

United States District Court for the District of Delaware

March 13, 2017, Decided; March 13, 2017, Filed

Civil Action No. 14-1330-RGA

Reporter

2017 U.S. Dist. LEXIS 35272 *

SONOS, INC., Plaintiff, v. D&M HOLDINGS INC. d/b/a THE D+M GROUP, D&M HOLDINGS U.S. INC., and DENON ELECTRONICS (USA), LLC, Defendants.

Prior History: Sonos, Inc. v. D&M Holdings, Inc., 2015 U.S. Dist. LEXIS 119718 (D. Del., Sept. 9, 2015)

Judges: Richard G. Andrews, UNITED STATES DISTRICT JUDGE.

Opinion by: Richard G. Andrews

Opinion

Core Terms

patent, players, devices, Volume, abstract idea, playback, invention, plurality, Pairing, technology, network, zone, user, configured, output, organizing, multimedia, parties, adjust, characterization, displaying, channel, subject matter, oral argument, oversimplified, specification, interface, briefing, manually, screen

Counsel: [*1] Attorneys for Plaintiff: Phillip A. Rovner, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; Jonathan A. Choa, Esq., POTTER ANDERSON & CORROON LLP, Wilmington, DE; George I. Lee, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Sean M. Sullivan, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Rory P. Shea, Esq. (argued), LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; J. Dan Smith, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL; Michael P. Boyea, Esq., LEE SULLIVAN SHEA & SMITH, LLP, Chicago, IL.

Attorneys for Defendant: Jack B. Blumenfeld, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; Michael J. Flynn, Esq., MORRIS NICHOLS ARSHT & TUNNELL LLP, Wilmington, DE; John M. Jackson, Esq. (argued), JACKSON WALKER LLP, Dallas, TX; Nathaniel (Nate) S. Clair II, Esq., JACKSON WALKER LLP, Dallas, TX; Matthew C. Acosta, Esq., JACKSON WALKER LLP, Dallas, TX; Blake T. Dietrich, Esq., JACKSON WALKER LLP, Dallas, TX; David Folsom, Esq., JACKSON WALKER LLP, Texarkana, TX.

MEMORANDUM OPINION

ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court is Defendants' Partial Motion for Judgment on the Pleadings for Lack of [*2] Patent-Eligible Subject Matter. (D.I. 116). The issues have been fully briefed. (D.I. 117, 119, 124). The Court held oral argument on November 14, 2016. (D.I. 206) ("Hr'g Tr."). For the reasons that follow, the Court will deny Defendants' motion.

I. BACKGROUND

Plaintiff filed this patent infringement lawsuit against Defendant on October 14, 2014. (D.I. 1). Plaintiff has asserted a total of twelve patents in this suit. (D.I. 102). Defendants have moved for partial judgment on the pleadings with respect to four of the asserted patents, alleging that the patents are directed to ineligible subject matter. (D.I. 117). The patents at issue in this motion are U.S. Patent Nos. 8,588,949 ("the '949 patent"), 7,571,014 ("the '014 patent"), 9,202,509 ("the '509 patent"), and 9,219,959 ("the '959 patent").

The parties refer to the '949 and '014 patents collectively as the Volume patents. The '949 patent is directed to a multimedia controller and method for adjusting volume levels in a multi-zone system through the use of a user interface. The summary of the invention section of the specification describes the invention as follows:

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In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups. According to one aspect of the present invention, a mechanism is provided to allow a user to group some [3] of the players according to a theme or scene, where each of the players is located in a zone. When the scene is activated, the players in the scene react in a synchronized manner.

('949 patent at 2:28-34). The '014 patent is similarly directed to a method and apparatus or controlling multimedia players in a multi-zone system. The invention is described in the specification as follows:

In general, the present invention pertains to control of audio characteristics of a plurality of multimedia players, or simply players, from a controller. The characteristics include, but are not limited to, an audio source and an audio volume being played in each of the players. In particular, the present invention enables the user to remotely control the audio characteristics of the players either as a group or as an individual player.

('014 patent at 2:24-31).

The parties refer to the '509 and '959 patents collectively as the Pairing patents. The '509 patent is directed to methods for grouping and pairing networked audio players. The specification describes the invention as follows:

In general, the present invention pertains to controlling a plurality of multimedia players, or simply players, in groups. . . . [I]ndividual players may be paired or grouped to stimulate [sic] [4] a multi-channel listening environment. In [sic] instead of grouping selected players to play back an audio item, a user is allowed to activate one of the players to process the data of the audio item, essentially separating the data into individual streams, each of the streams representing a single-sound track and being played back in one of the players, thus creating a multi-channel listening environment with the selected players.

('509 patent at 2:26-27, 2:59-67). The '959 patent is similarly directed to devices and methods for grouping, consolidating, and pairing networked audio players. The invention is described in the specification as follows:

In brief summary, the embodiments described herein provide technology for grouping, consolidating, and pairing individual playback devices to create or enhance a multi-channel listening environment. Particularly, the embodiments described herein enable two or more

playback devices to be paired, such that multichannel audio is achieved or enhanced. Such embodiments may be used to produce stereo sound or other audio environments suitable for audio content encoded with more than two channels, such as for certain kinds of television, movies, and music.

('959 patent at 2:54-63). [5]

II. LEGAL STANDARD

Section 101 of the Patent Act defines patent-eligible subject matter. It provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." *35 U.S.C. § 101*. The Supreme Court has recognized an implicit exception for three categories of subject matter not eligible for patentability—laws of nature, natural phenomena, and abstract ideas. *Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354, 189 L. Ed. 2d 296 (2014). The purpose of these carve outs is to protect the "basic tools of scientific and technological work." *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 132 S. Ct. 1293, 1293, 182 L. Ed. 2d 321 (2012). "[A] process is not unpatentable simply because it contains a law of nature or a mathematical algorithm," as "an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." *Id.* at 1293-94 (internal quotation marks and emphasis omitted). In order "to transform an unpatentable law of nature into a patent-eligible application of such a law, one must do more than simply state the law of nature while adding the words 'apply it.'" *Id.* at 1294 (emphasis omitted).

The Supreme Court recently reaffirmed the framework laid out in *Mayo* "for distinguishing [6] patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 134 S. Ct. at 2355; First, the court must determine whether the claims are drawn to a patent-ineligible concept. *Id.* If the answer is yes, the court must look to "the elements of the claim both individually and as an 'ordered combination' to see if there is an 'inventive concept'—i.e., an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Id.* (alteration in original). "A claim that recites an abstract

idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].' *Id.* at 2357 (alterations in original) (quoting *Mayo*, 132 S. Ct. at 1297). "[S]imply appending conventional steps, specified at a high level of generality, to . . . abstract ideas cannot make those . . . ideas patentable." *Mayo*, 132 S. Ct. at 1300. Further, "the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment." *Alice*, 134 S. Ct. at 2358 (quoting *Bilski v. Kappos*, 561 U.S. 593, 610-11, 130 S. Ct. 3218, 177 L. Ed. 2d 792 (2010)). Thus, "the mere recitation of a generic [7] computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Id.* For this second step, the machine-or-transformation test can be a "useful clue," although it is not determinative. *Ultrimercial Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014), cert. denied, 135 S. Ct. 2907, 192 L. Ed. 2d 929 (2015).

Patent eligibility under § 101 is a question of law suitable for resolution on a motion for judgment on the pleadings. *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016). The Federal Circuit follows regional circuit law for motions for judgment on the pleadings. *Id.* Under Third Circuit law, a *Rule 12(c)* motion for judgment on the pleadings is reviewed under the same standard as a *Rule 12(b)(6)* motion to dismiss when the *Rule 12(c)* motion alleges that the plaintiff failed to state a claim upon which relief can be granted. *Revell V. Port Auth.*, 598 F.3d 128, 134 (3d Cir. 2010); *Turbe v. Gov 'l of the Virgin Islands*, 936 F.2d 427, 428 (3d Cir. 1991). The court must accept the factual allegations in the complaint and take them in the light most favorable to the non-moving party. *Erickson v. Pardus*, 551 U.S. 89, 94, 127 S. Ct. 2197, 167 L. Ed. 2d 1081 (2007); *Christopher v. Harbury*, 536 U.S. 403, 406, 122 S. Ct. 2179, 153 L. Ed. 2d 413 (2002).

The Federal Circuit has held that the district court is not required to individually address claims not asserted or identified by the non-moving party, so long as the court identifies representative claim and "all the claims are substantially similar and linked to the same abstract idea." *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (internal quotation marks omitted). [8]

III. DISCUSSION

A. The Volume Patents

The '949 patent contains three independent claims:

claim 1, claim 8, and claim 15. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9).¹ Claim 1 reads:

1. A multimedia controller including a processor, the controller configured to:
provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent playback device configured to playback a multimedia output from a multimedia source;
accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source;

for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; [9] and
accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.

('949 patent, claim 1).

The '014 patent contains four independent claims, three of which have been asserted: claim 1, claim 16, and claim 38. In briefing Defendants argued, and, at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9). Claim 1 reads:

1. A method for controlling a plurality of players, the method comprising: displaying on a screen a first list showing at least available players;
displaying, when at least one of the players is selected as a zone group head, on the screen a

¹ At oral argument on November 14, 2016, the parties were directed to submit additional briefing to the extent that they felt claim 1 of each of these patents was not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that claim 1 of each patent is not representative. (D.I. 225).

second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting [*10] of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

('014 patent, claim 1).

"First, we determine whether the claims at issue are directed to [an abstract idea]." Alice, 134 S. Ct. at 2355. "The 'abstract ideas' category embodies 'the longstanding rule that an idea of itself is not patentable.'" *Id.* (internal quotation marks omitted) (quoting Gottschalk v. Benson, 409 U.S. 63, 67, 93 S. Ct. 253, 34 L. Ed. 2d 273 (1972)). "The Supreme Court has not established a definitive rule to determine what constitutes an 'abstract idea' sufficient to satisfy the first step of the *Mayo/Alice* inquiry." Enfish, LLC v. Microsoft Corp., 822 F.3d 1327, 1334 (Fed. Cir. 2016). The Supreme Court has recognized, however, that "fundamental economic practice[s]," Eliski, 561 U.S. at 611, "method[s] of organizing human activity," Alice, 134 S. Ct. at 2356, and mathematical algorithms, Benson, 409 U.S. at 64, are abstract ideas. In navigating the parameters of such categories, courts have generally sought to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases." Enfish, 822 F.3d at 1334. "But in determining whether the claims are directed to an abstract idea, we must be careful to avoid oversimplifying the claims because '[a]t some level, all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" In re TLI Commc. LLC Patent Litig., 823 F.3d 607, 611 (Fed. Cir. 2016) (alterations [*11] in original) (quoting Alice, 134 S. Ct. at 2354).

Defendants assert that the "Volume patents are directed to the abstract idea of 'controlling audio settings for multiple audio devices.'" (DJ. 117 at 13). Defendants contend that, like the concept of collecting and storing data in *Content Extraction*, the Volume patents seek to claim a concept that is "very basic" and "fundamental to the entire technological field described in the Asserted

Patents." (*Id.* at 14). According to Defendants, the claimed method "can be manually performed by a human." (*Id.*). Defendants also argue that the asserted claims of the '014 patent encompass prior art devices because the claims are not limited to wirelessly networked audio players. (*Id.* at 15).

Plaintiff counters that Defendants are oversimplifying in characterizing the invention. (D.I. 126 at 12). Plaintiff asserts that the invention embodies "a concrete and tangible concept limited to a specific technological field and it is tethered to specific devices." (*Id.* at 3). Plaintiff further asserts that the invention discloses new functionality and is not simply an automation of steps previously performed by humans. (*Id.*) Finally, Plaintiff objects to Defendants' characterization of the "network" as encompassing prior [*12] art hardwired audio systems. (*Id.* at 10). Plaintiff contends, rather, that the claims are limited to audio player on a data network. (*Id.*).

I agree with Plaintiff that Defendants have advanced an oversimplified characterization of the allegedly abstract idea. "Under step one of *Mayo/Alice*, the claims are considered in their entirety to ascertain whether their character as a whole is directed to excluded subject matter." Internet Patents, 790 F.3d at 1346. As the Federal Circuit has cautioned, "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims." McRO, Inc. v. Bandai Namco Games America Inc., 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting TLI Commc.'s, 823 F.3d at 611).

As support for their proposed characterization, Defendants cite to several cases they claim are similar to this one. Many of these cases are inapplicable, however, as they are directed to the abstract idea of collecting, organizing, and storing data. See TLI Commc.'s, 823 F.3d at 613 (claims directed to abstract idea of classifying, organizing, and storing digital image"); Content Extraction, 776 F.3d at 1347 (claims drawn to abstract idea of collecting, recognizing, and storing data); Digitech Image Techs., LLC v. Elecs. for Imaging, Inc., 758 F.3d 1344, 1350 (Fed. Cir. 2014) (claims drawn to abstract idea of "organizing information through mathematical correlations" where claims "not tied to a specific structure or machine"); [*13] Visual Memory LLC v. NVIDIA Corp., 2016 U.S. Dist. LEXIS 69543, 2016 WL 3041847, at *4 (D. Del. May 27, 2016), appeal docketed, No. 16-2254 (Fed. Cir. June 28, 2016) (claims drawn to "abstract idea of categorical data storage"). In order to make the argument that these

cases are similar to this one, Defendants offer additional alternative characterizations of the alleged abstract idea, arguing the Volume patents are directed to "organizing and manipulating electronic information" (D.I. 117 at 15) or, alternatively, "organizing and distributing information." (*Id.* at 16). These alternative characterizations are a far cry from, and oversimplified to a greater degree than, "controlling audio settings for multiple audio devices." (*Id.* at 13).

I think these claims are far more specific and limited than Defendants argue. For example, claim 1 of the '014 patent could only be considered to encompass collecting and organizing information if I were to restrict my analysis to the first two limitations involving displaying lists of available players. This is inappropriate. Considering the claim in its entirety reveals that there is more to the claim than organizing information. Rather, the third limitation calls for "totaling a zone group," an action that involves controlling actual devices and effecting a fundamental alteration in [*14] how the plurality of zone players are networked together. The remaining limitations involve controlling the zone players that have been grouped together, also actions that are not accurately characterized as organizing information. Similarly, claim 1 of the '949 patent claims a controller that provides a user interface allowing for the formation of groups of zone players and control of these players. To characterize this claim as being drawn to "organizing and distributing information" is a gross oversimplification. Defendants' arguments ignore tangible limitations that are tied to specific devices. I am not persuaded.

For similar reasons, I reject Defendants' argument that the concept claimed is fundamental to the entire field. The claims of both Volume patents relate not to the field of audio devices generally, but only to methods and devices for controlling the specific "players" referenced in the claims. I have already construed the term "player" to mean "data network device configured to process and output audio." (D.I. 219 at 9). Claim 1 of each of the Volume Patents, therefore, requires concrete, tangible components, specifically a "plurality of players," where the players are the specific [*15] devices described in the patents. Only under Defendants' oversimplified characterization of these patents could the claimed concept be considered fundamental to the technological field.

Defendants further argue that these patents are similar to those invalidated in *TLI Commc'ns*. (Hr'g Tr. at 5:21-6:10). In *TLI*, the claims were found to be abstract at

step one because they were "directed to the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two" rather than being directed to "a specific improvement to computer functionality." *TLI Commc'ns*, 823 F.3d at 612. Importantly, however, the specification of the patent at issue in *TLI* did not "provide any technical details for the tangible components." *Id.* In contrast, the claims of the Volume patents are not directed to "generic technology." They are directed to controllers and networked audio players that are described in detail in the specifications. ('014 patent at 6:18-8:49; '959 patent at 7:8-13:0). Furthermore, the specifications of both Volume patents describe the problems presented and solved by these inventions as "dynamically managing the [*16] ad hoc creation and deletion of groups" of audio players and "control of the audio players as a group." ('014 patent at 2:3-6; '949 patent at 2:10-13). Although Defendants attempt to argue that this is a "manufactured problem," I do not think *TLI* is analogous to this case both because the Volume patents are directed to specific rather than generic technology and present a specific improvement to the existing technology.

Defendants next argue that "each of the recited steps can be manually performed by a human." (D.I. 117 at 14). However, Defendants do not explain how a human could manually accomplish this feat. Nor could they. Performing the method of claim 1 of the '014 patent requires the following steps: 1) displaying a list of available players on a screen; 2) if one of the players is a zone head, displaying on the screen a second list of players that could be grouped with the zone head; 3) forming a group by selecting some of the players to group with the zone head; 4) synchronizing the players in the group; and 5) using the controller to synchronously adjust the volume of all of the grouped players. Even setting aside the steps involving displaying lists on a screen, it seems clear that in order to form a group [*17] in step 3 in a hard wired system contemplated by Defendants, a user would need to re-wire the audio system each time a new group is formed. Forming and changing the composition of player groups in real time simply by making a few selections on the screen of a device is not something a human could do manually in a hard wired system.

Similarly, claim 1 of the '949 patent is a device claim for a controller used to form and control groups of audio players. Defendants' arguments that a human could perform the actions the device is said to perform is at

best illogical. Defendants "provided no evidence that the process previously used [to group audio speakers] is the same as the process required by the claims." *McRO, Inc.*, 827 F.2d at 1314. As in *McRO*, the prior art method of grouping and controlling audio devices (i.e. by hardwiring them into the desired configuration) "would not be within the scope of the claims" because it does not involving using a controller with a user interface to view lists of available devices on the data network that are then grouped and controlled synchronously. Furthermore, unlike in *McRO*, the method is not implemented on a general purpose computer. Rather, as discussed above, the method is directed [*18] to specific devices that are described and claimed in the patents.

It seems to me that the invention as claimed in each of the Volume patents represents a substantial improvement over the existing technology — the invention described in the patents allows for the audio devices to be grouped and regrouped in real time simply using a user interface to select the desired members of the groups without the need for altering any hard wiring in the physical system. This is not simply a "more efficient" method of doing something already done by humans. It is a method that provides for capabilities far beyond what a traditional hardwired system offers. Plaintiff does not contend that audio speakers are a new technology. What is claimed, however, is not a traditional speaker; rather, the claims are directed to an improvement to the existing technology for grouping and controlling audio speakers. Furthermore, the claims are grounded in a specific device — the player/zone player/playback device that is described in the patent and that I previously construed to mean "data network device configured to process and output audio." (D.I. 219 at 9).

Finally, Defendants argue that the claims of the '014 patent "encompass [*19] the admitted prior art of hardwired traditional multi-zone systems." (D.I. 117 at 15). I am not persuaded that this is true for many of the same reasons I have already explained above. Whether it is true or not, however, is irrelevant in the context of this motion because "section 101 eligibility should not become a substitute for a patentability analysis related to prior art, adequate disclosure, or the other conditions and requirements of Title 35." *Research Corp. Techs., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010).

For the reasons given above, I find that the Volume patents claim patent-eligible subject matter under § 101.

Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

B. The Pairing Patents

The '509 patent contains three independent claims: claim 1, claim 11, and claim 23. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 1 is representative. (Hr'g Tr. at 61:6-9).² Claim 1 reads:

1. A method comprising:

identifying, via a controller, a plurality of playback devices on a local area network (LAN), wherein at least one of the plurality of playback devices is configured to request an audio data stream from a source device in response to receipt of a command via the controller [*20] over the LAN;
instructing, via the controller over the LAN, at least one of the plurality of, playback devices to process the requested audio data stream into at least one of a first and a second channel of the requested audio data stream and to reproduce a respective one of the first and the second channel, wherein the plurality of playback devices, when grouped, provide multi-channel sound, such that a first playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the first channel of the requested audio data stream for the group and a second playback device in the group of the plurality of playback devices is configured as part of the group to reproduce the second channel of the requested audio data stream for the group; and
displaying, via the controller, an indication that each of the plurality of playback devices is configured to reproduce a respective channel.

('509 patent, claim 1). The '959 patent contains two independent claims. In briefing Defendants argued, and at oral argument Plaintiff agreed, that claim 14 is representative. (Hr'g Tr. at 61:6-9). Claim 14 reads:

14. A method for outputting audio in a multi-channel

²At oral argument, the parties were directed to submit additional briefing to the extent that they felt claim 1 of the '509 patent and claim 14 of the '959 patent were not representative of any of the asserted dependent claims. (Hr'g Tr. at 62:5-8). The parties waited until February 1, 2017 to propose substantial additional briefing on this issue in a Joint Stipulation. (D.I. 224). On February 2, I denied the parties' Joint Stipulation, finding that the parties had waived any argument that these claims are not representative. (D.I. 225).

listening environment, [*21] wherein the method is performed by a playback device, the method comprising:

receiving audio data over a network;

processing the audio data before the playback device outputs audio from a plurality of speaker drivers based on the audio data;

when the playback device is configured for a first type of pairing, performing a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers;

when the playback device is configured for a second type of pairing, performing a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers.

('959 patent, claim 14).

Defendants argue that the claims of the '509 patent are directed to the abstract idea of "grouping and controlling audio players." (D.I. 117 at 19). According to Defendants, the method described in claim 1 forms "the very foundation of any audio system with more than one speaker." (*Id.*). As to the '959 patent, Defendants argue that the claims are directed to the abstract idea of "changing audio settings based on programmed instructions." (*Id.* at 23). Defendants further allege that the claims of this patent "are so broad and abstract as to encompass the same general [*22] idea and practice identified in the '509 patent." (*Id.*). As with the other patents at issue in this motion, Defendants argue that the claimed methods from both of the Pairing patents "can be performed entirely by humans." (*Id.*).

Plaintiff respond that the claims of both of the Pairing patents "are directed to several specific improvements in existing audio system technology." (D.I. 126 at 17, 21). Plaintiff also takes issue with Defendants' contention that the claimed methods can be performed by humans. (*Id.* at 19, 22). Plaintiff further argues, as with the Volume patents, that Defendants have advanced an oversimplified characterization of the claims. (*Id.* at 19).

Defendants make the same arguments here as they did for the Volume patents. I again reject those arguments. As with the Volume patents, I agree with Plaintiff that Defendants' characterization of the purportedly abstract idea is oversimplified. Just as with the Volume patents, the Pairing patents claim methods that involve specific devices (playback devices and controllers) that are described in detail in the specifications. ('509 patent at 5:63-8:50; '959 patent at 7:8-13:10). Furthermore, as

with the Volume patents, the claimed methods do not represent simply an automation of [*23] something done manually. Rather, the method of claim 1 the '509 patent requires using a controller to identify the playback devices on a local area network, instruct some of the devices to each output different channels of audio data, and display on the controller's screen which device is outputting which channel. In order to perform this method manually, leaving aside the steps involving using a controller or displaying on the screen of the controller, a person would have to manually rewire the devices each time a new selection is made for which devices are to output which channels. Similarly, the method of claim 14 of the '959 patent is performed by the playback device and involves receiving and then processing audio data, recognizing the type of pairing that has been selected for that playback devices, performing an equalization previously specified for that type of pairing, and then outputting audio. This simply is not the kind of method that could be performed manually and, even if it were, automating the method as claimed represents a substantial improvement to the functionality of a specific device. I also reject Defendants' argument that the claims of the '959 patent "are so broad and abstract as to encompass [*24] the same general idea and practice identified in the '509 patent." (D.I. 117 at 23). It seems clear to me that the two patents claim substantially different methods even if it could also be said they address "the same general idea."

At oral argument, Defendants drew an analogy between this case and the claims at issue in *Personalized Media*. (Hr'g Tr. at 12:16-13:2). *Personalized Media* involved a claim "directed to the abstract idea of using personal information to create a customized presentation." *Personalized Media Commc'ns, LLC v. Amazon.com, Inc.*, 161 F. Supp. 3d 325, 330 (D. Del. 2015), *aff'd*, 2016 U.S. App. LEXIS 21918, 2016 WL 7118532 (Fed. Cir. Dec. 7, 2016). The claim in *Personalized Media*, however, is not analogous to the claims of the Pairing patents. These patents, like the Volume patents, are not about organizing, manipulating, or distributing information. Rather, these patents claim improvements to specific devices, not generic technology, and the methods involve controlling the devices to effect tangible changes in their configurations. For these reasons, I find that the Pairing patents claim patent-eligible subject matter under § 101.

Having found that the claims are not drawn to an abstract idea under step one, it is unnecessary for me to proceed to step two.

RENEE PRESTON

IV. CONCLUSION

For the reasons set forth above, the motion for judgment on the pleadings [*25] for lack of patentable subject matter (D.I. 116) will be denied. An appropriate order will be entered.

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RENEE PRESTON



User Name: RENEE PRESTON

Date and Time: Tuesday, July 11, 2017 4:33:00 PM EDT

Job Number: 50316513

Documents (3)

1. [Sonos Sues D&M Holdings, Alleging Denon HEOS Multiroom System Infringes Sonos Patents](#)

Client/Matter: -None-

Search Terms: 7571014 or 7,571,014

Search Type: Terms and Connectors

Narrowed by:

Content Type
News

Narrowed by
-None-

2. [Sonos Sues D&M Holdings, Alleging Denon HEOS Multiroom System Infringes Sonos Patents](#)

Client/Matter: -None-

Search Terms: 7571014 or 7,571,014

Search Type: Terms and Connectors

Narrowed by:

Content Type
News

Narrowed by
-None-

3. [Patent No. 7,571,014 Issued on Aug. 4, Assigned to Sonos for Multimedia Players Controlling Apparatus \(California Inventors\)](#)

Client/Matter: -None-

Search Terms: 7571014 or 7,571,014

Search Type: Terms and Connectors

Narrowed by:

Content Type
News

Narrowed by
-None-

Sonos Sues D&M Holdings, Alleging Denon HEOS Multiroom System Infringes Sonos Patents

Consumer Electronics Daily

October 23, 2014 Thursday

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Section: TOP NEWS

Length: 840 words

Body

Sonos filed a patent infringement lawsuit against D&M Holdings in U.S. District Court of Delaware in Wilmington (<http://bit.ly/1zkHly9z>), alleging that the Denon HEOS wireless multiroom audio system infringes "at least four" Sonos patents. In the suit Sonos said it owns nearly 40 U.S. patents on modern audio technology and has nearly 250 U.S. patents pending.

D&M launched HEOS by Denon in June, including the HEOS 7, 5 and 3 speakers, the HEOS Link preamplifier, HEOS amplifier and a HEOS app for iOS and Android devices. D&M is "trying to market the HEOS system as a direct competitor to Sonos's wireless audio system," Sonos said, but "instead of innovating, defendants are merely copying Sonos's system."

In a blog post Tuesday (<http://bit.ly/1wtQc1Q>), Sonos co-founder Craig Shelburne said the suit isn't "an action we take lightly, as we're not fans of resorting to the courts to resolve disputes." As a next step, he said, Sonos will offer "to sit down with Denon, explain our views and give them time to modify their products." Sonos isn't asking for a royalty or other license fee, he said. "We just want Denon to build an experience that isn't copying ours."

Six months ago, following the introduction of several competing wireless multiroom audio systems, Sonos published a blog that "laid out an approach designed to increase visibility to our patent filings, so others could more closely track the innovations at the heart of the Sonos music experience (<http://bit.ly/1ILCEQn>)." Shelburne called it "a simple proposition for anyone interested in how our system works, including our competitors: Read. Learn. Create your own experience. But don't merely copy." Since that time, he said, "we have watched as several companies have entered the wireless home audio space with product features, designs and messaging strikingly similar to Sonos, without truly moving the experience forward in any way."

In the complaint, Sonos references U.S. Patent No. 8,788,080, "Multi-Channel Pairing in a Media System," and claims the HEOS 3 speaker product -- which is configured to operate either in a "no pairing" mode or in a "stereo pairing" mode -- "embodies one or more of the devices, methods, and/or computer-readable media claimed in the '080 patent."

Sonos also alleges that the HEOS controller app -- configured to group HEOS speakers, synchronize grouped HEOS speakers, and adjust a "Master" volume for grouped HEOS speakers -- infringes on U.S. Patent No. **7,571,014**, "Method and Apparatus for Controlling Multimedia Players in a Multi-Zone system." In addition, HEOS speakers have a control strip, which Sonos said is covered "either literally or under the Doctrine of Equivalents," by U.S. Patent No. D559,197, "Control Strip for Electronic Appliances" that was issued to Sonos in 2008.

RENEE PRESTON

Sonos Sues D&M Holdings, Alleging Denon HEOS Multiroom System Infringes Sonos Patents

In court documents, Sonos cited press articles, including one from Digital Trends, which credited Sonos with creating a line of wireless speakers that "operate in tandem, allowing users to stream music over Wi-Fi from a single source to multiple rooms without latency, or send a different source to each speaker, all from an extremely intuitive and powerful app on a computer or mobile device." Digital Trends said Sonos's success spawned "copycats" including Bose, Samsung and others. "With HEOS, Denon appears to be making little effort to hide its mimicry of the popular system," Digital Trends said, saying Denon's speakers are offered in sizes and price points similar to Sonos speakers.

The suit also alleges that the Denon HEOS system "copied various aspects of Sonos's marketing and branding," quoting AVHub.com, which said the HEOS name is similar enough to Sonos that "we can't help but feel the similarity was deliberate." Court papers show a graphic from a Sonos manual with suggested placement of Sonos speakers in a home setting next to a graphic from Denon's website that it says "closely resembles" the Sonos image.

In the suit, Sonos is seeking a judgment that Denon has willfully infringed Sonos patents, unspecified damages and an injunction barring D&M from further infringement, documents said.

A spokeswoman for D&M told us the company is reviewing the documents and will prepare an extensive response. Meantime, she said, "We are aware of lawsuit filed by Sonos yesterday and we take the allegations against us very seriously. D&M will defend itself fully in this suit and will take all necessary actions to protect our technology and product investment."

In Tuesday's blog post, Shelburne said Sonos has always anticipated and continues to welcome "competition in a space where we've worked alone for so long." He added the caveat that "new entrants come up with new ideas and true innovations, not merely copy what we have invented -- to create a better experience for all of us music lovers out there." On the potential for additional suits, a Sonos spokesman told us he couldn't comment on specifics around other companies that could be potential targets for lawsuits "or areas where we are going to potentially file suits."

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Body

Sonos filed a patent infringement lawsuit against D&M Holdings in U.S. District Court of Delaware in Wilmington (<http://bit.ly/1zkHly9z>), alleging that the Denon HEOS wireless multiroom audio system infringes "at least four" Sonos patents. In the suit Sonos said it owns nearly 40 U.S. patents on modern audio technology and has nearly 250 U.S. patents pending.

D&M launched HEOS by Denon in June, including the HEOS 7, 5 and 3 speakers, the HEOS Link preamplifier, HEOS amplifier and a HEOS app for iOS and Android devices. D&M is "trying to market the HEOS system as a direct competitor to Sonos's wireless audio system," Sonos said, but "instead of innovating, defendants are merely copying Sonos's system."

In a blog post Tuesday (<http://bit.ly/1wtQc1G>), Sonos co-founder Craig Shelburne said the suit isn't "an action we take lightly, as we're not fans of resorting to the courts to resolve disputes." As a next step, he said, Sonos will offer "to sit down with Denon, explain our views and give them time to modify their products." Sonos isn't asking for a royalty or other license fee, he said. "We just want Denon to build an experience that isn't copying ours."

Six months ago, following the introduction of several competing wireless multiroom audio systems, Sonos published a blog that "laid out an approach designed to increase visibility to our patent filings, so others could more closely track the innovations at the heart of the Sonos music experience (<http://bit.ly/1ILCEQn>)." Shelburne called it "a simple proposition for anyone interested in how our system works, including our competitors: Read. Learn. Create your own experience. But don't merely copy." Since that time, he said, "we have watched as several companies have entered the wireless home audio space with product features, designs and messaging strikingly similar to Sonos, without truly moving the experience forward in any way."

In the complaint, Sonos references U.S. Patent No. 8,788,080, "Multi-Channel Pairing in a Media System," and claims the HEOS 3 speaker product -- which is configured to operate either in a "no pairing" mode or in a "stereo pairing" mode -- "embodies one or more of the devices, methods, and/or computer-readable media claimed in the '080 patent."

Sonos also alleges that the HEOS controller app -- configured to group HEOS speakers, synchronize grouped HEOS speakers, and adjust a "Master" volume for grouped HEOS speakers -- infringes on U.S. Patent No. **7,571,014**, "Method and Apparatus for Controlling Multimedia Players in a Multi-Zone system." In addition, HEOS speakers have a control strip, which Sonos said is covered "either literally or under the Doctrine of Equivalents," by U.S. Patent No. D559,197, "Control Strip for Electronic Appliances" that was issued to Sonos in 2008.

RENEE PRESTON

Sonos Sues D&M Holdings, Alleging Denon HEOS Multiroom System Infringes Sonos Patents

In court documents, Sonos cited press articles, including one from Digital Trends, which credited Sonos with creating a line of wireless speakers that "operate in tandem, allowing users to stream music over Wi-Fi from a single source to multiple rooms without latency, or send a different source to each speaker, all from an extremely intuitive and powerful app on a computer or mobile device." Digital Trends said Sonos's success spawned "copycats" including Bose, Samsung and others. "With HEOS, Denon appears to be making little effort to hide its mimicry of the popular system," Digital Trends said, saying Denon's speakers are offered in sizes and price points similar to Sonos speakers.

The suit also alleges that the Denon HEOS system "copied various aspects of Sonos's marketing and branding," quoting AVHub.com, which said the HEOS name is similar enough to Sonos that "we can't help but feel the similarity was deliberate." Court papers show a graphic from a Sonos manual with suggested placement of Sonos speakers in a home setting next to a graphic from Denon's website that it says "closely resembles" the Sonos image.

In the suit, Sonos is seeking a judgment that Denon has willfully infringed Sonos patents, unspecified damages and an injunction barring D&M from further infringement, documents said.

A spokeswoman for D&M told us the company is reviewing the documents and will prepare an extensive response. Meantime, she said, "We are aware of lawsuit filed by Sonos yesterday and we take the allegations against us very seriously. D&M will defend itself fully in this suit and will take all necessary actions to protect our technology and product investment."

In Tuesday's blog post, Shelburne said Sonos has always anticipated and continues to welcome "competition in a space where we've worked alone for so long." He added the caveat that "new entrants come up with new ideas and true innovations, not merely copy what we have invented -- to create a better experience for all of us music lovers out there." On the potential for additional suits, a Sonos spokesman told us he couldn't comment on specifics around other companies that could be potential targets for lawsuits "or areas where we are going to potentially file suits."

Load-Date: October 22, 2014

End of Document

RENEE PRESTON

**Patent No. 7,571,014 Issued on Aug. 4, Assigned to Sonos for Multimedia
Players Controlling Apparatus (California Inventors)**

US Fed News

August 7, 2009 Friday 11:42 AM EST

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Dateline: ALEXANDRIA, Va.

Body

ALEXANDRIA, Va., Aug. 7 -- Robert A. Lambourne and Nicholas A. J. Millington, both of Santa Barbara, Calif., have developed an apparatus for controlling multimedia players. The inventors were issued U.S. Patent No. **7,571,014** on Aug. 4.

The patent has been assigned to Sonos Inc., Santa Barbara.

According to the abstract released by the U.S. Patent & Trademark Office: "Techniques for controlling zone group and zone group characteristics such as audio volume in a multi-zone system are disclosed. The multi-zone system includes a number of multimedia players, each preferably located in a zone. A controller may control the operations of all of the zone players remotely from any one of the zones. Two or more zone players may be dynamically grouped as a zone group for synchronized operations. According to one aspect of the techniques, a zone group configuration can be managed, updated, modified via an interactive user interface provided in a controlling device. The zone group configuration may be saved in one of zone players."

The original application was filed on June 5, 2004. For more information about US Fed News contract awards please contact: Sarabjit Jagirdar, US Fed News, Email:- htsyndication@hindustantimes.com

For any query with respect to this article or any other content requirement, please contact Editor at htsyndication@hindustantimes.com

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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	7	20030172123		2003-09-11	POLAN; Jeffrey S. et al.	
	8	20030179780		2003-09-25	WALKER; Anthony et al.	
	9	20030185400		2003-10-02	YOSHIZAWA; Kazuhiko et al.	
	10	20030195964		2003-10-16	MANE; Pravin D.	
	11	20030198254		2003-10-23	SULLIVAN; Gary E. et al.	
	12	20030198255		2003-10-23	SULLIVAN; Gary E. et al.	
	13	20030198257		2003-10-23	SULLIVAN; Gary E. et al.	
	14	20030200001		2003-10-23	GODDARD; Mark D.	
	15	20030204273		2003-10-30	DINKER; Darpan et al.	
	16	20030204509		2003-10-30	DINKER; Darpan et al.	

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	17	20030210796		2003-11-13	MCCARTY; William A. et al.	
	18	20030212802		2003-11-13	RECTOR; Dusty D. et al.	
	19	20030219007		2003-11-27	BARRACK; Craig et al.	
	20	20030227478		2003-12-11	CHATFIELD; Keith M.	
	21	20030229900		2003-12-11	REISMAN; Richard	
	22	20030231208		2003-12-18	HANON; Kris et al.	
	23	20030231871		2003-12-18	USHIMARU; Chikara	
	24	20030235304		2003-12-25	EVANS; Glenn F. et al.	
	25	20040001106		2004-01-01	DEUTSCHER; John et al.	
	26	20040001484		2004-01-01	OZGUNER; Tolga	
	27	20040001591		2004-01-01	MANI; Murali et al.	

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	28	20040008852		2004-01-15	ALSO; Masaru et al.	
	29	20040010727		2004-01-15	FUJINAMI; Yasushi	
	30	20040012620		2004-01-22	BUHLER; Rene et al.	
	31	20040014426		2004-01-22	MOORE; Richard A.	
	32	20040015252		2004-01-22	AISO; Masaru et al.	
	33	20040019497		2004-01-29	VOLK; Andrew R. et al.	
	34	20040019807		2004-01-29	FREUND; Gregor P. et al.	
	35	20040019911		2004-01-29	GATES; Matthijs A. et al.	
	36	20040023697		2004-02-05	KOMURA; Tatsumi	
	37	20040024478		2004-02-05	HANS; Mathieu Claude et al.	
	38	20040024925		2004-02-05	CYPHER; Robert E. et al.	

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	39	20040027166		2004-02-12	MANGUM; Wayne G. et al.	
	40	20040032348		2004-02-19	LAI; Angela C. W. et al.	
	41	20040032421		2004-02-19	WILLIAMSON; Charles G. et al.	
	42	20040037433		2004-02-26	CHEN; Heng-Chien	
	43	20040041836		2004-03-04	ZANER; Melora et al.	
	44	20040042629		2004-03-04	MELLONE; Charles M. et al.	
	45	20040044742		2004-03-04	EVRON; Roni et al.	
	46	20040048569		2004-03-11	KAWAMURA; Harumi	
	47	20040059842		2004-03-25	HANSON; Mark L. et al.	
	48	20040059965		2004-03-25	MARSHALL; Kenneth R. et al.	
	49	20040066736		2004-04-08	KROEGER; Brian William	

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	50	20040075767		2004-04-22	NEUMAN; Darren et al.	
	51	20040078383		2004-04-22	MERCER; Ian Cameron et al.	
	52	20040080671		2004-04-29	SIEMENS; Duane et al.	
	53	20040093096		2004-05-13	HUANG; Steve Lan-Ping et al.	
	54	20040098754		2004-05-20	VELLA; Zane et al.	
	55	20040111473		2004-06-10	LYSENKO; Anton et al.	
	56	20040117462		2004-06-17	BODIN; William Kress et al.	
	57	20040117840		2004-06-17	BOUDREAU; Paul A. et al.	
	58	20040117858		2004-06-17	BOUDREAU; Paul A. et al.	
	59	20040128701		2004-07-01	KANEKO; Toshimitsu et al.	
	60	20040131192		2004-07-08	METCALF; Randall B.	

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	61	20040133689		2004-07-08	VASISHT; Samrat	
	62	20040143368		2004-07-22	MAY; Robert E. et al.	
	63	20040143852		2004-07-22	MEYERS; Philip G.	
	64	20040148237		2004-07-29	BITTMANN; Ran et al.	
	65	20040168081		2004-08-26	LADAS; Corey M. et al.	
	66	20040170383		2004-09-02	MAZUR; Leszek	
	67	20040171346		2004-09-02	LIN; John	
	68	20040177167		2004-09-09	IWAMURA; Ryuichi et al.	
	69	20040179554		2004-09-16	TSAO; Hsi-Kang	
	70	20040183827		2004-09-23	PUTTERMAN; Daniel et al.	
	71	20040185773		2004-09-23	GERBER; Louis et al.	

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	72	20040203378		2004-10-14	POWERS; Simon	
	73	20040203590		2004-10-14	SHTEYN; Eugene	
	74	20040208158		2004-10-21	FELLMAN; Ronald D. et al.	
	75	20040213230		2004-10-28	DOUSKALIS; William et al.	
	76	20040223622		2004-11-11	LINDEMANN; Eric Lee et al.	
	77	20040224638		2004-11-11	FADELL; Anthony M. et al.	
	78	20040228367		2004-11-18	MOSIG; Rudiger et al.	
	79	20040248601		2004-12-09	CHANG; Chin-Chi	
	80	20040249490		2004-12-09	SAKAI; Kenji	
	81	20040249965		2004-12-09	HUGGINS; Guy Dwayne et al.	
	82	20040249982		2004-12-09	ARNOLD; Johann et al.	

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	83	20040252400		2004-12-16	BLANK; William Thomas et al.	
	84	20040253969		2004-12-16	NGUYEN; Vu X. et al.	
	85	20050010691		2005-01-13	OYADOMARI; Randy et al.	
	86	20050011388		2005-01-20	KOUZNETSOV; Alex A.	
	87	20050013394		2005-01-20	RAUSCH; Mathias et al.	
	88	20050015551		2005-01-20	EAMES; Russell Mark et al.	
	89	20050021590		2005-01-27	DEBIQUE; Kirt A. et al.	
	90	20050027821		2005-02-03	ALEXANDER; Justin et al.	
	91	20050058149		2005-03-17	HOWE; Wayne Richard	
	92	20050060435		2005-03-17	XUE; Xin et al.	
	93	20050062637		2005-03-24	EL ZABADANI; Hicham Mahmoud et al.	

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	94	20050081213		2005-04-14	SUZUOKI; Masakazu et al.	
	95	20050105052		2005-05-19	MCCORMICK; Tom et al.	
	96	20050114538		2005-05-26	ROSE; Steven W.	
	97	20050120128		2005-06-02	WILLES; W. P. et al.	
	98	20050125222		2005-06-09	BROWN; Michael Wayne et al.	
	99	20050125357		2005-06-09	SAADAT; Abbas S. et al.	
	100	20050131558		2005-06-16	BRAITHWAITE; Michael et al.	
	101	20050154766		2005-07-14	HUANG; Wei-Hung et al.	
	102	20050159833		2005-07-21	GIAIMO; Edward C. et al.	
	103	20050160270		2005-07-21	GOLDBERG; David et al.	
	104	20050166135		2005-07-28	BURKE; David G. et al.	

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	105	20050168630		2005-08-04	YAMADA; Norihiko et al.	
	106	20050177643		2005-08-11	XU; Shugong	
	107	20050181348		2005-08-18	CAREY; Tadhg M. et al.	
	108	20050195205		2005-09-08	ABRAMS; Thomas A.Jr	
	109	20050195823		2005-09-08	CHEN; Jian-Rong et al.	
	110	20050197725		2005-09-08	ALEXANDER; Jim et al.	
	111	20050198574		2005-09-08	LAMKIN; Allan B. et al.	
	112	20050201549		2005-09-15	DEDIEU; Stephane et al.	
	113	20050216556		2005-09-29	MANION; Todd R. et al.	
	114	20050262217		2005-11-24	NONAKA; Masao et al.	
	115	20050281255		2005-12-22	DAVIES; Trevor et al.	

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	116	20050283820		2005-12-22	RICHARDS; Martin J. et al.	
	117	20050288805		2005-12-29	MOORE; Jeffrey C. et al.	
	118	20050289224		2005-12-29	DESLIPPE; Mark H. et al.	
	119	20060041639		2006-02-23	LAMKIN; Allan B. et al.	
	120	20060072489		2006-04-06	TOYOSHIMA; Akihiko	
	121	20060095516		2006-05-04	WIJERATNE; Viranga L.	
	122	20060098936		2006-05-11	IKEDA; Wataru et al.	
	123	20060119497		2006-06-08	MILLER; Kevin L. et al.	
	124	20060143236		2006-06-29	WU; Michael	
	125	20060155721		2006-07-13	GRUNWALD; David et al.	
	126	20060161742		2006-07-20	SUGIMOTO; Kayo et al.	

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	127	20060173844		2006-08-03	ZHANG; Junbiao et al.	
	128	20060193454		2006-08-31	ABOU-CHAKRA, RABIH. et al.	
	129	20060222186		2006-10-05	PAIGE; Robert F. et al.	
	130	20060227985		2006-10-12	KAWANAMI; Kenichiro	
	131	20060259649		2006-11-16	HSIEH; Kuan-Hong et al.	
	132	20060270395		2006-11-30	DHAWAN; Anil K. et al.	
	133	20070003067		2007-01-04	GIERL; Stefan et al.	
	134	20070022207		2007-01-25	MILLINGTON; Nicholas A. et al.	
	135	20070043847		2007-02-22	CARTER; Harry N. et al.	
	136	20070047712		2007-03-01	GROSS; Kevin P. et al.	
	137	20070048713		2007-03-01	PLASTINA; Daniel et al.	

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	138	20070054680		2007-03-08	MO; Shaomin S. et al.	
	139	20070087686		2007-04-19	HOLM; Jukka et al.	
	140	20070142022		2007-06-21	MADONNA; Robert P. et al.	
	141	20070142944		2007-06-21	GOLDBERG; David et al.	
	142	20070143493		2007-06-21	MULLIG; Richard M. et al.	
	143	20070169115		2007-07-19	KO; Steve et al.	
	144	20070180137		2007-08-02	RAJAPAKSE; Ravi	
	145	20070192156		2007-08-16	GAUGER; Derek K.	
	146	20070249295		2007-10-25	UKITA; Yoshitaka et al.	
	147	20070265031		2007-11-15	KOIZUMI; Michiaki et al.	
	148	20070271388		2007-11-22	BOWRA; Todd et al.	

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	149	20070299778		2007-12-27	HAVESON; Ryan A. et al.	
	150	20080002836		2008-01-03	MOELLER; Niklas et al.	
	151	20080007649		2008-01-10	BENNETT; James D.	
	152	20080007650		2008-01-10	BENNETT; James D.	
	153	20080007651		2008-01-10	BENNETT; James D.	
	154	20080018785		2008-01-24	BENNETT; James D.	
	155	20080022320		2008-01-24	VER STEEG; William C.	
	156	20080025535		2008-01-31	RAJAPAKSE; Ravi	
	157	20080072816		2008-03-27	RIESS; Walter H. et al.	
	158	20080075295		2008-03-27	MAYMAN; Avrum G. et al.	
	159	20080077619		2008-03-27	GILLEY; Glenn Gregory et al.	

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	160	20080077620		2008-03-27	GILLEY; Glenn Gregory et al.	
	161	20080086318		2008-04-10	GILLEY; Glenn Gregory et al.	
	162	20080091771		2008-04-17	ALLEN; Jeffrey L. et al.	
	163	20080120429		2008-05-22	MILLINGTON; Nicholas A.J. et al.	
	164	20080126943		2008-05-29	PARASNIS; Shashank Mohan et al.	
	165	20080144861		2008-06-19	MELANSON; John L. et al.	
	166	20080144864		2008-06-19	HUON; Graeme John	
	167	20080146289		2008-06-19	KORNELUK; Jose E. et al.	
	168	20080189272		2008-08-07	POWERS; Michael et al.	
	169	20080205070		2008-08-28	OSADA; Yasuo	
	170	20080212786		2008-09-04	PARK; Hae-Kwang	

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	171	20080215169		2008-09-04	DEBETTENCOURT; Lisa et al.	
	172	20080263010		2008-10-23	ROYCHOUDHURI; Subrata et al.	
	173	20080303947		2008-12-11	OHNISHI; Sunao et al.	
	174	20090011798		2009-01-08	YAMADA; Hiroshi	
	175	20090017868		2009-01-15	UEDA; Joji et al.	
	176	20090031336		2009-01-29	CHAVEZ; Timothy R. et al.	
	177	20090070434		2009-03-12	HIMMELSTEIN; Richard B.	
	178	20090089327		2009-04-02	KALABOUKIS; Chris et al.	
	179	20090100189		2009-04-16	BAHREN; Frank et al.	
	180	20090124289		2009-05-14	NISHIDA; Osamu	
	181	20090157905		2009-06-18	DAVIS; Bradford C.	

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	182	20090164655		2009-06-25	PETTERSSON; Mattias et al.	
	183	20090193345		2009-07-30	WENSLEY; Paul et al.	
	184	20090222115		2009-09-03	MALCOLM; David et al.	
	185	20090228919		2009-09-10	ZOTT; Joseph A. et al.	
	186	20090251604		2009-10-08	IYER; Suraj C.	
	187	20100004983		2010-01-07	DICKERSON; Stephanie et al.	
	188	20100031366		2010-02-04	KNIGHT; Mark Stephen et al.	
	189	20100049835		2010-02-25	KO; Steve et al.	
	190	20100087089		2010-04-08	STRUTHERS; Scott et al.	
	191	20100228740		2010-09-09	CANNISTRARO; Alan et al.	
	192	20100284389		2010-11-11	RAMSAY; Max et al.	

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	193	20100299639		2010-11-25	RAMSAY; Max Gordon et al.	
	194	20110001632		2011-01-06	HOHORST; Andrew Gordon	
	195	20110002487		2011-01-06	PANTHER; Heiko et al.	
	196	20110066943		2011-03-17	BRILLON; Francois et al.	
	197	20110228944		2011-09-22	CROGHAN; Frank et al.	
	198	20110316768		2011-12-29	MCRAE; Matthew Blake	
	199	20120029671		2012-02-02	MILLINGTON; Nicholas A. J. et al.	
	200	20120030366		2012-02-02	COLLART; Todd et al.	
	201	20120051567		2012-03-01	CASTOR-PERRY; Kendall	
	202	20120060046		2012-03-08	MILLINGTON; Nicholas A. J.	
	203	20120129446		2012-05-24	KO; Steve et al.	

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	204	20120148075		2012-06-14	GOH; Aik Hee Daniel et al.	
	205	20120185771		2012-07-19	ROTHKOPF; Fletcher R. et al.	
	206	20120192071		2012-07-26	MILLINGTON; Nicholas A. J.	
	207	20120207290		2012-08-16	MOYERS; Josh et al.	
	208	20120237054		2012-09-20	EO; Kil-Su et al.	
	209	20120281058		2012-11-08	LANEY; Alan et al.	
	210	20120290621		2012-11-15	HEITZ III; Jeremy A. et al.	
	211	20130018960		2013-01-17	KNYSZ; Matthew S. et al.	
	212	20130031475		2013-01-31	MAOR; Yehonatan Rafael et al.	
	213	20130038726		2013-02-14	KIM; Jin-Hyong	
	214	20130041954		2013-02-14	KIM; Laeyoung et al.	

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	215	20130047084		2013-02-21	SANDERS; Christopher John et al.	
	216	20130052940		2013-02-28	BRILLHART; David C. et al.	
	217	20130070093		2013-03-21	RIVERA; Ed et al.	
	218	20130080599		2013-03-28	KO; Steve et al.	
	219	20130094670		2013-04-18	MILLINGTON; Nicholas A.J.	
	220	20130124664		2013-05-16	FONSECA Jr.; Benedito J. et al.	
	221	20130129122		2013-05-23	JOHNSON; Martin E. et al.	
	222	20130132837		2013-05-23	MEAD; Jonathan Selwyn et al.	
	223	20130159126		2013-06-20	ELKADY; Amr	
	224	20130167029		2013-06-27	FRIESEN; Sharon E. et al.	
	225	20130174100		2013-07-04	SEYMOUR; Eric T. et al.	

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	226	20130174223		2013-07-04	DYKEMAN; Kim R. et al.	
	227	20130179163		2013-07-11	HERBIG; Tobias et al.	
	228	20130191454		2013-07-25	OLIVER; Michael R. et al.	
	229	20130197682		2013-08-01	MILLINGTON; Nicholas A. J.	
	230	20130208911		2013-08-15	MILLINGTON; Nicholas A. J.	
	231	20130208921		2013-08-15	MILLINGTON; Nicholas A.J.	
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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

CERTIFICATION STATEMENT

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☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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	2	Non-final Office Action mailed on 24 October 2014, issued in connection with U.S. Patent Application No. 13/435776, filed 30 March 2012, 14 pages	☐
	3	Non-Final Office Action mailed on 26 February 2015, issued in connection with U.S. Patent Application No. 14/186850, filed on 21 February 2014, 25 pages.	☐
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	6	Non-Final Office Action mailed on 27 March 2015, issued in connection with U.S. Patent Application No. 13/705178, filed on 05 December 2012, 14 pages.	☐
	7	Non-Final Office Action mailed on 28 December 2015, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 29 pages.	☐
	8	Non-Final Office Action mailed on 29 November 2016, issued in connection with U.S. Patent Application No. 13/894179, filed on 14 May 2013, 14 pages	☐
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	10	Non-Final Office Action mailed on 30 January 2015, issued in connection with U.S. Patent Application No. 14/504812, filed on 02 October 2014, 13 pages	☐
	11	Non-Final Office Action mailed on 30 January 2015, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 29 pages.	☐

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13	Non-Final Office Action mailed on 30 September 2016, issued in connection with U.S. Patent Application No. 13/864249, filed on 17 April 2013, 12 pages	☐
14	North American MPEG-2 Information, "The MPEG-2 Transport Stream," Retrieved from the Internet: URL: http://www.coolstf.com/mpeg/#ts , 2006, pp. 1-5.	☐
15	Notice of Allowance mailed 31 January 2013, issued in connection with U.S. Patent Application No. 13/298090, filed on 16 November 2011, 19 pages	☐
16	Notice of Allowance mailed on 01 December 2016, issued in connection with U.S. Patent Application No. 15/088283, filed on 01 April 2016, 9 pages	☐
17	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/088532, filed on 01 April 2016, 9 pages	☐
18	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/088678, filed on 01 April 2016, 9 pages	☐
19	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/089758, filed on 04 April 2016, 9 pages	☐
20	Notice of Allowance mailed on 02 December 2016, issued in connection with U.S. Patent Application No. 15/155149, filed on 16 May 2016, 9 pages	☐
21	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 17 pages	☐
22	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 19 pages	☐

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	23	Notice of Allowance mailed on 02 July 2015, issued in connection with U.S. Patent Application No. 14/184935, filed on 20 February 2014, 23 pages	☐
	24	Notice of Allowance mailed on 03 April 2017, issued in connection with U.S. Patent Application No. 15088678, filed on 01 April 2016, 8 pages.	☐
	25	Notice of Allowance mailed on 03 September 2015, issued in connection with U.S. Patent Application No. 13/705174, filed on 05 December 2012, 4 pages.	☐
	26	Notice of Allowance mailed on 04 August 2015, issued in connection with U.S. Patent Application No. 14/516867, filed on 17 October 2014, 13 pages	☐
	27	Notice of Allowance mailed on 05 October 2012, issued in connection with U.S. Patent Application No. 13/204511, filed on 05 August 2011, 11 pages	☐
	28	Notice of Allowance mailed on 06 March 2014, issued in connection with U.S. Patent Application No. 13/827653, filed 14 March 2013, 17 pages	☐
	29	Notice of Allowance mailed on 06 May 2011, issued in connection with U.S. Patent Application No. 11/801468, filed 09 May 2007, 10 pages.	☐
	30	Notice of Allowance mailed on 06 September 2013, issued in connection with U.S. Patent Application No. 13/619237, filed on 14 September 2012, 10 pages	☐
	31	Notice of Allowance mailed on 07 April 2016, issued in connection with U.S. Patent Application No. 13/533105, filed on 26 June 2012, 40 pages	☐
	32	Notice of Allowance mailed on 07 December 2016, issued in connection with U.S. Patent Application No. 15/156392, filed on 17 May 2016, 9 pages	☐
	33	Notice of Allowance mailed on 07 October 2015, issued in connection with U.S. Patent Application No. 14/184526, filed on 19 February 2014, 7 pages	☐

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	34	Notice of Allowance mailed on 09 March 2017, issued in connection with U.S. Patent Application No. 15/080591, filed on 25 March 2016, 7 pages	☐
	35	Notice of Allowance mailed on 09 October 2015, issued in connection with U.S. Patent Application No. 13/435739, filed on 30 March 2012, 4 pages.	☐
	36	Notice of Allowance mailed on 10 August 2015, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 9 pages	☐
	37	Notice of Allowance mailed on 10 February 2017, issued in connection with U.S. Application No. 14/290493, filed on 29 May 2014, 13 pages	☐
	38	Notice of Allowance mailed on 10 November 2011, issued in connection with U.S. Patent Application No. 11/906702, filed on 02 October 2007, 17 pages	☐
	39	Notice of Allowance mailed on 11 April 2016, issued in connection with U.S. Patent Application No. 13/864247, filed on 17 April 2013, 21 pages	☐
	40	Notice of Allowance mailed on 11 January 2016, issued in connection with U.S. Patent Application No. 14/565544, filed on 09 December 2014, 5 pages	☐
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	43	Notice of Allowance mailed on 13 July 2015, issued in connection with U.S. Patent Application No. 14/184526, filed on 19 February 2014, 22 pages	☐
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	45	Notice of Allowance mailed on 13 October 2015, issued in connection with U.S. Patent Application No. 13/864251, filed on 17 April 2013, 7 pages.	☐
	46	Notice of Allowance mailed on 14 December 2016, issued in connection with U.S. Patent Application No. 15/088906, filed on 01 April 2016, 9 pages.	☐
	47	Notice of Allowance mailed on 14 June 2012, issued in connection with U.S. Patent Application No. 12/035112, filed on 21 February 2008, 9 pages.	☐
	48	Notice of Allowance mailed on 15 July 2015, issued in connection with U.S. Patent Application No. 13/705174, filed on 05 December 2012, 18 pages	☐
	49	Notice of Allowance mailed on 15 March 2017, issued in connection with U.S. Patent Application No. 15/080716, filed on 25 March 2016, 7 pages.	☐
	50	Notice of Allowance mailed on 16 June 2009, issued in connection with U.S. Patent Application No. 10/861653, filed on 05 June 2004, 11 pages.	☐

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3	Notice of Allowance mailed on 19 October 2016, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 14 pages	☐
4	Notice of Allowance mailed on 21 September 2015, issued in connection with U.S. Patent Application No. 13/297000, filed on 15 November 2011, 11 pages.	☐
5	Notice of Allowance mailed on 22 December 2016, issued in connection with U.S. Patent Application No. 15/080716, filed on 25 March 2016, 9 pages.	☐
6	Notice of Allowance mailed on 22 September 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 7 pages	☐
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8	Notice of Allowance mailed on 24 September 2015, issued in connection with U.S. Patent Application No. 14/184935, filed on 20 February 2014, 7 pages	☐
9	Notice of Allowance mailed on 25 September 2014, issued in connection with U.S. Patent Application No. 14/176808, filed on 10 February 2014, 5 pages	☐
10	Notice of Allowance mailed on 27 August 2015, issued in connection with U.S. Patent Application No. 13/705177, filed on 05 December 2012, 34 pages.	☐
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	24	PILLAI et al., "A Method to Improve the Robustness of MPEG Video Applications over Wireless Networks," Kent Ridge Digital Labs, 2000, 15 pages.	☐
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	28	PRISMIQ, Inc., "PRISMIQ Media Player User Guide," 2003, 44 pages.	☐
	29	Proficient Audio Systems M6 Quick Start Guide, 2011, 5 pages.	☐
	30	Proficient Audio Systems: Proficient Editor Advanced Programming Guide, 2007, 40 pages.	☐
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	32	Radio Shack, "Auto-Sensing 4-Way Audio/Video Selector Switch," 2004, 1 page	☐
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	35	RadioShack, Pro-2053 Scanner, 2002 Catalog, part 3, 100 pages	☐
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	38	RANGAN et al., "Feedback Techniques for Continuity and Synchronization in Multimedia Information Retrieval," ACM Transactions on Information Systems, 1995, pp. 145-176, Vol. 13, No. 2	☐
	39	Real Time Control Protocol (RTCP) and Realtime Transfer Protocol (RTP), RFC 1889 (Jan. 1996) (D+M_0397810-84) (75 pages)	☐
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	41	Realtime Transport Protocol (RTP), RFC 3550 (July 2003) (D+M_0398235-323) (89 pages)	☐
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	44	REID, Mark, "Multimedia conferencing over ISDN and IP networks using ITU-T H-series recommendations: architecture, control and coordination," Computer Networks, 1999, pp. 225-235, Vol. 31	☐

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	45	RenderingControl:1 Service Template Version 1.01 For UPnP, Version 1.0, (June 25, 2002) (SONDM000115187-249) (63 pages).	☐
	46	Renkus Heinz Manual; available for sale at least 2004, 6 pages	☐
	47	"Residential Distributed Audio Wiring Practices," Leviton Network Solutions, 2001, 13 pages	☐
	48	ROLAND CORPORATION, "Roland announces BA-55 Portable PA System," press release, April 6, 2011, 2 pages.	☐
	49	ROTHERMEL et al., "An Adaptive Protocol for Synchronizing Media Streams," Institute of Parallel and Distributed High-Performance Systems (IPVR), 1997, 26 pages	☐
	50	ROTHERMEL et al., "An Adaptive Stream Synchronization Protocol," 5th International Workshop on Network and Operating System Support for Digital Audio and Video, 1995, 13 pages	☐

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	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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1	ROTHERMEL et al., "An Adaptive Stream Synchronization Protocol," 5th International Workshop on Network and Operating System Support for Digital Audio and Video, April 18-21, 1995, 12 pages	☐
2	ROTHERMEL et al., "Clock Hierarchies- An Abstraction for Grouping and Controlling Media Streams," University of Stuttgart Institute of Parallel and Distributed High-Performance Systems, January 1996, 23 pages	☐
3	ROTHERMEL et al., "Synchronization in Joint-Viewing Environments," University of Stuttgart Institute of Parallel and Distributed High-Performance Systems, 1992, 13 pages	☐
4	ROTHERMEL, Kurt, "State-of-the-Art and Future Research in Stream Synchronization," University of Stuttgart, 3 pages	☐
5	"RVL-6 Modular Multi-Room Controller, Installation & Operation Guide," Nile Audio Corporations, 1999, 46 pages	☐
6	SCHMANDT et al., "Impromptu: Managing Networked Audio Applications for Mobile Users," 2004, 11 pages.	☐
7	SCHULZRINNE H., et al., "RTP: A Transport Protocol for Real-Time Applications, RFC 3550," Network Working Group, 2003, pp. 1-89.	☐
8	Simple Network Time Protocol (SNTP I), RFC 1361 (August 1992) (D+M_0397537-46) (10 pages)	☐
9	Simple Network Time Protocol (SNTP II), RFC 1769 (March 1995) (D+M_0397663-76) (14 pages)	☐
10	Simple Service Discovery Protocol/1.0 Operating without an Arbiter (Oct. 28, 1999) (24 pages)	☐
11	Sonos, Inc. v D&M Holdings, D&M Supp Opposition Brief including Exhibits, 17 March 2017, 23 pages	☐

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12	Sonos, Inc. v. D&M Holdings, Expert Report of Jay P. Kesan including Appendices A-P, Feb. 20, 2017, 776 pages.	☐
13	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit A: Defendants' First Amended Answer to Plaintiffs' Third Amended Complaint, provided August 1, 2016, 26 pages.	☐
14	Sonos, Inc. v. D&M Holdings Inc. et al., Exhibit A: Defendants' Second Amended Answer to Plaintiffs' Third Amended Complaint, provided September 9, 2016, 88 pages.	☐
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16	Sonos, Inc. v. D&M Holdings Inc. et al., Sonos's Opposition to Defendants' Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided October 31, 2016, 26 pages.	☐
17	Sonos, Inc. v. D&M Holdings, Inc. (No. 14-1330-RGA), Defendants' Final Invalidity Contentions (Jan. 18, 2017) (106 pages)	☐
18	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 226, Opinion Denying Inequitable Conduct Defenses, Feb. 6, 2017, updated, 5 pages.	☐
19	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 242, US District Judge Andrews 101 Opinion, Mar. 13, 2017, 16 pages.	☐
20	Sonos, Inc. v D&M Holdings, Sonos Supp Opening Markman Brief including Exhibits, 3 March 2017, 17 pages	☐
21	Sonos, Inc. v. D&M Holdings, Sonos Supp Reply Markman Brief including Exhibits, 29 March 2017, 36 pages	☐
22	Sonos, Inc. v. D&M Holdings Inc. et al., Complaint for Patent Infringement, filed October 21, 2014, 20 pages.	☐

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23	Sonos, Inc. v. D&M Holdings Inc. et al., Declaration of Steven C. Visser, executed September 9, 2016, 40 pages.	☐
24	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 1: Defendants' Invalidity Contentions for U.S. Patent No. 7,571,014 filed September 16, 2016, 270 pages.	☐
25	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 10: Defendants' Invalidity Contentions for U.S. Patent No. 9,219,959 filed September 27, 2016, 236 pages.	☐
26	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 11: Defendants' Invalidity Contentions for U.S. Design Patent No. D559,197 filed September 27, 2016, 52 pages.	☐
27	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 2: Defendants' Invalidity Contentions for U.S. Patent No. 8,588,949 filed September 27, 2016, 224 pages.	☐
28	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 3: Defendants' Invalidity Contentions for U.S. Patent No. 8,843,224 filed September 27, 2016, 147 pages.	☐
29	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 4: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,312 filed September 27, 2016, 229 pages.	☐
30	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 5: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,637 filed September 27, 2016, 213 pages.	☐
31	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 6: Defendants' Invalidity Contentions for U.S. Patent No. 9,042,556 filed September 27, 2016, 162 pages.	☐
32	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,195,258 filed September 27, 2016, 418 pages.	☐
33	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 8: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed September 27, 2016, 331 pages.	☐

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34	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 9: Defendants' Invalidity Contentions for U.S. Patent No. 9,213,357 filed September 27, 2016, 251 pages.	☐
35	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions, filed September 14, 2016, 100 pages.	☐
36	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 1: Defendants' Invalidity Contentions for U.S. Patent No. 7,571,014 filed April 15, 2016, 161 pages.	☐
37	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 10: Defendants' Invalidity Contentions for U.S. Patent No. 9,213,357 filed April 15, 2016, 244 pages.	☐
38	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 11: Defendants' Invalidity Contentions for U.S. Patent No. 9,219,959 filed April 15, 2016, 172 pages.	☐
39	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 12: Defendants' Invalidity Contentions for U.S. Design Patent No. D559,197 filed April 15, 2016, 36 pages.	☐
40	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 2: Defendants' Invalidity Contentions for U.S. Patent No. 8,588,949 filed April 15, 2016, 112 pages.	☐
41	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 3: Defendants' Invalidity Contentions for U.S. Patent No. 8,843,224 filed April 15, 2016, 118 pages.	☐
42	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 4: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,312 filed April 15, 2016, 217 pages.	☐
43	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 5: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,637 filed April 15, 2016, 177 pages.	☐
44	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 6: Defendants' Invalidity Contentions for U.S. Patent No. 9,042,556 filed April 15, 2016, 86 pages.	☐

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45	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,130,771 filed April 15, 2016, 203 pages.	☐
46	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 8: Defendants' Invalidity Contentions for U.S. Patent No. 9,195,258 filed April 15, 2016, 400 pages.	☐
47	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 9: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed April 15, 2016, 163 pages.	☐
48	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions, filed April 15, 2016, 97 pages.	☐
49	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Preliminary Identification of Indefinite Terms, provided July 29, 2016, 8 pages	☐
50	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Preliminary Identification of Prior Art References, provided July 29, 2016, 5 pages.	☐

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Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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1	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Amended Answer, Defenses, and Counterclaims for Patent Infringement, filed November 30, 2015, 47 pages	☐
2	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Answer to Plaintiff's Second Amended Complaint, filed April 30, 2015, 19 pages	☐
3	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Brief in Support of their Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided October 12, 2016, 24 pages.	☐
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6	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Reply in Support of Partial Motion for Judgment on the Pleadings, filed June 10, 2016, 15 pages	☐
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10	Sonos, Inc. v. D&M Holdings Inc. et al., First Amended Complaint for Patent Infringement, filed December 17, 2014, 26 pages	☐
11	Sonos, Inc. v. D&M Holdings Inc. et al., Joint Claim Construction Chart, Volume 1 of 3 with Exhibits A-O, filed August 17, 2016, 30 pages	☐

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	13	Sonos, Inc. v. D&M Holdings Inc. et al., Opening Brief in Support of Defendants' Partial Motion for Judgment on the Pleadings for Lack of Patent-Eligible Subject Matter, filed May 6, 2016, 27 pages.	☐
	14	Sonos, Inc. v. D&M Holdings Inc. et al., Order, provided October 7, 2016, 2 pages.	☐
	15	Sonos, Inc. v. D&M Holdings Inc. et al., Plaintiffs Opposition to Defendants' Motion for Leave to Amend Their Answer to Add the Defense of Inequitable Conduct, provided August 26, 2016, 25 pages.	☐
	16	Sonos, Inc. v. D&M Holdings Inc. et al., Plaintiff Sonos, Inc.'s Response in Opposition to Defendants' Partial Motion for Judgment on the Pleadings, filed May 27, 2016, 24 pages	☐
	17	Sonos, Inc. v. D&M Holdings Inc. et al., Redlined Exhibit B: Defendants' First Amended Answer to Plaintiffs' Third Amended Complaint, provided August 1, 2016, 27 pages.	☐
	18	Sonos, Inc. v. D&M Holdings Inc. et al., Reply Brief in Support of Defendants' Motion for Leave to Amend their Answer to Add the Defense of Inequitable Conduct, provided November 10, 2016, 16 pages.	☐
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	20	Sonos, Inc. v. D&M Holdings Inc. et al., Second Amended Complaint for Patent Infringement, filed February 27, 2015, 49 pages	☐
	21	Sonos, Inc. v. D&M Holdings Inc. et al., Third Amended Complaint for Patent Infringement, filed January 29, 2016, 47 pages	☐
	22	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 206-1, Transcript of 101 Hearing (Nov. 28, 2016) (28 pages)	☐

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	24	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 214, D&M Post-Markman Letter (Dec. 22, 2016) (13 pages)	☐
	25	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 215, Sonos Post-Markman Letter (Dec. 22, 2016) (15 pages)	☐
	26	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 219, Claim Construction Opinion (Jan. 12, 2017) (24 pages)	☐
	27	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 221, Claim Construction Order (Jan. 18 2017) (2 pages)	☐
	28	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), Markman Hearing Transcript (Dec. 14, 2016) (69 pages)	☐
	29	Sony: AIR-SA 50R Wireless Speaker, Copyright 2009, 2 pages	☐
	30	Sony: Altus Quick Setup Guide ALT-SA32PC, Copyright 2009, 2 pages	☐
	31	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-E300, E301 and E801, Copyright 2009, 115 pages	☐
	32	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-IT1000/BDV-IS1000, Copyright 2008, 159 pages	☐
	33	Sony: Blu-ray Disc/DVD Home Theatre System Operating Instructions for BDV-IZ1000W, Copyright 2010, 88 pages	☐

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	34	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ380W/DZ680W/DZ880W, Copyright 2009, 136 pages	☐
	35	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ870W, Copyright 2008, 128 pages	☐
	36	Sony Ericsson MS500 User Guide, Copyright 2009, 2 pages	☐
	37	Sony: Home Theatre System Operating Instructions for HT-IS100, Copyright 2008, 168 pages	☐
	38	Sony: HT-IS100, 5.1 Channel Audio System, last updated November 2009, 2 pages	☐
	39	Sony: Multi Channel AV Receiver Operating Instructions, 2007, 80 pages.	☐
	40	Sony: Multi Channel AV Receiver Operating Instructions for STR-DN1000, Copyright 2009, 136 pages	☐
	41	Sony: STR-DN1000, Audio Video Receiver, last updated August 2009, 2 pages	☐
	42	Sony: Wireless Surround Kit Operating Instructions for WHAT-SA2, Copyright 2010, 56 pages	☐
	43	TAYLOR, Marilou, "Long Island Sound," Audio Video Interiors, April 2000, 8 pages	☐
	44	TOA Corporation, Digital Processor DP-0206 DACsys2000 Version 2.00 Software Instruction Manual, Copyright 2001, 67 pages	☐

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	45	Understanding Universal Plug and Play, Microsoft White Paper (June 2000) (D+M_0402074-118) (45 pages)	☐
	46	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/490,768 filed on 28 July 2003, entitled "Method for synchronizing audio playback between multiple networked devices," 13 pages.	☐
	47	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/825,407 filed on 12 September 2006, entitled "Controlling and manipulating groupings in a multi-zone music or media system," 82 pages.	☐
	48	Universal Plug and Play Device Architecture V. 1.0, (June 8, 2000) (54 pages)	☐
	49	Universal Plug and Play in Windows XP, Tom Fout. Microsoft Corporation (July 2001) (D+M_0402041-73) (33 pages)	☐
	50	Universal Plug and Play ("UPnP") AV Architecture:1 For UPnP, Version 1.0, (June 25, 2002) (D+M_0298151-72) (22 pages)	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

CERTIFICATION STATEMENT

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

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	1	2014149533	WO	A2	2014-09-25	BOSE CORPORATION		☐
	2	2014004182	WO		2014-01-03	SONOS, INC.		☐
	3	2012050927	WO		2012-04-19	BEYOND OBLIVION INC		☐

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	4	2008114389	WO	A1	2008-09-25	PIONEER CORPORATION.		☐
	5	2008082350	WO	A1	2008-07-10	SCANIA CV ABP [SE], et al.		☐
	6	2007131555	WO		2007-11-22	SONY ERICSOON MOBILE COMMUNICATIONS AB.		☐
	7	2007127485	WO		2007-11-08	MICROSOFT CORPORATION.		☐
	8	2007023120	WO		2007-03-01	SONY ERICSSON MOBILE COMM AB [SE], et al.		☐
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	10	2003093950	WO	A2	2003-11-13	GOLDBERG, BENJAMIN, M. et al.		☐
	11	200153994	WO		2001-07-26	FRISKIT, INC.		☐
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	1	Universal Plug and Play Vendor's Implementation Guide (January 5, 2000) (7 pages)	☐
	2	UPnP AV Architecture:0.83 (June 12, 2002) (SONDM000115483-504) (22 pages)	☐
	3	UPnP Design by Example, A Software Developers Guide to Universal Plug and Play Michael Jeronimo and JackWeast, Intel Press (D+M_0401307-818) (April 2003) (511 pages)	☐
	4	WANCommonInterfaceConfig:1 Service Template Version 1.01 For UPnP, Ver. 1.0 (November 12, 2001) (D +M_0401820-43) (24 pages)	☐
	5	WANIPConnection:1 Service Template Version 1.01 For UPnP Ver. 1.0 (November 12, 2001) (D+M_0401844-917) (74 pages)	☐
	6	WANPPPCConnection:1 Service Template Version 1.01 For UPnP, Version 1.0 (November 12, 2001) (D +M_0401918-2006) (89 pages)	☐
	7	WaveLan High-Speed Multimode Chip Set, AVAGO0003, Agere Systems, February 2003, 4 pages	☐
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24	Audio Authority: How to Install and Use the Model 1154 Signal Sensing Auto Selector, 2002, 4 pages.	☐
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	47	BREEBAART et al., "Multi-Channel Goes Mobile: MPEG Surround Binaural Rendering," AES 29th International Conference, September 2-4, 2006, pp. 1-13.	☐
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	50	CANADIAN INTELLECTUAL PROPERTY OFFICE, Canadian Office Action mailed on 14 September 2015, issued in connection with Canadian Patent Application No. 2,842,342, 2 pages.	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		90013882	
	Filing Date		2016-12-27	
	First Named Inventor			
	Art Unit		3992	
	Examiner Name		STEELMAN, Mary J.	
	Attorney Docket Number		04-0601-REEXAM	

U.S.PATENT APPLICATION PUBLICATIONS								
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵

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	Art Unit		3992	
	Examiner Name		STEELMAN, Mary J.	
	Attorney Docket Number		04-0601-REEXAM	

	1	None						☐
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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Final Office Action mailed on 02 June 2017, issued in connection with U.S. Patent Application No. 13/848932, filed on 22 March 2013, 32 pages	☐
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

CERTIFICATE OF SERVICE

The undersigned hereby certifies that copies of the Information Disclosure Statements, the non-patent literature references cited in the Information Disclosure Statements, and this Certificate of Service, all of which were filed at the U.S. Patent Office on June 29, 2017, are being served, in their entirety, via Federal Express, upon the following third-party requestor:

Jackson Walker LLP
Attn: Christopher J. Rourk
2323 Ross Avenue, Suite 600
Dallas, TX 75201

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: June 29, 2017

By: /Jeffrey P. Armstrong/
Jeffrey P. Armstrong
Reg. No. 54,967

Electronic Acknowledgement Receipt	
EFS ID:	29652791
Application Number:	90013882
International Application Number:	
Confirmation Number:	8704
Title of Invention:	Method and apparatus for controlling multimedia players in a multi-zone system
First Named Inventor/Applicant Name:	7571014
Customer Number:	107361
Filer:	Jeffrey Armstrong
Filer Authorized By:	
Attorney Docket Number:	04-0601-REEXAM (15-536)
Receipt Date:	29-JUN-2017
Filing Date:	27-DEC-2016
Time Stamp:	15:55:46
Application Type:	Reexam (Patent Owner)

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1	Information Disclosure Statement (IDS) Form (SB08)	04-0601-REEXAM_IDS_00.pdf	134885	no	35
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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	Attorney Docket Number		04-0601-REEXAM

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	67	7630501		2009-12-08	BLANK; William T. et al.	
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	Art Unit	3992
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	Attorney Docket Number	04-0601-REEXAM

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	77	7669219		2010-02-23	SCOTT; Samuel T.III.	
	78	7672470		2010-03-02	LEE; Jae-Hoon	
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	1	CEN et al., "A Distributed Real-Time MPEG Video Audio Player," Department of Computer Science and Engineering, Oregon Graduate Institute of Science and Technology, 1995, 12 pages.	☐
	2	CHAKRABARTI et al., "A Remotely Controlled Bluetooth Enabled Environment," IEEE, 2004, pp. 77-81.	☐
	3	Change Notification: Agere Systems WaveLan Multimode Reference Design (D2 to D3), AVAGO0042, Agere Systems, November 2004, 2 pages.	☐
	4	CHINESE OFFICE ACTION, Office Action mailed on 20 December 2016, issued in connection with Chinese Application No. 201380044446.8, 16 pages.	☐
	5	CHINESE PATENT OFFICE, Office Action mailed on 05 July 2016, issued in connection with Chinese Patent Application No. 201380044380.2, 25 pages.	☐
	6	Connection Manager: 1 Service Template Version 1.01 For UPnP, Version 1.0 (June 25, 2002) (25 pages)	☐
	7	ContentDirectory:1 Service Template Version 1.01 For UPnP, Version 1.0 (June 25, 2002) (89 pages)	☐
	8	Corrected Notice of Allowance mailed on 19 August 2015, issued in connection with U.S. Patent Application No. 13/907666, filed on 31 May 2013, 2 pages.	☐
	9	Creative, "Connecting Bluetooth Devices with Creative D200," http://support.creative.com/kb/ShowArticle.aspx?url=http://ask.creative.com:80/SRVS/CGI-BIN/WEB CGI.EXE/,/?St=106,E=0000000000396859016,K=9377,Sxi=8,VARSET=ws:http://us.creative.com,case=63350 , available on 11/28/2011, 2 pages	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
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	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

	10	Crown PIP Manual available for sale at least 2004, 68 pages	☐
	11	DANNENBERG et al., "A. System Supporting Flexible Distributed Real-Time Music Processing," Proceedings of the 2001 International Computer Music Conference, 2001, 4 pages.	☐
	12	DANNENBERG, Roger B., "Remote Access to Interactive Media," Proceedings of the SPIE 1785, 1993, pp. 230-237.	☐
	13	DAY, Rebecca, "Going Elan!" Primedia Inc., 2003, 4 pages	☐
	14	Deep-Sleep Implementation in WL60011 for IEEE 802.11b Applications, AVAGO0020, Agere Systems, July 2004, 22 pages.	☐
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	17	"Denon 2003-2004 Product Catalog," Denon, 2003-2004, 44 pages	☐
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21	"DP-0206 Digital Signal Processor," TOA Electronics, Inc., 2001, pp. 1-12	☐
22	EUROPEAN PATENT OFFICE, European Extended Search Report mailed 07 March 2016, issued in connection with EP Application No. 13810340.3, 9 pages	☐
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25	EUROPEAN PATENT OFFICE, Examination Report mailed on 22 March 2016, issued in connection with European Patent Application No. EP14181454.1, 6 pages	☐
26	EUROPEAN PATENT OFFICE, Examination Report mailed on 24 October 2016, issued in connection with European Patent Application No. 13808623.6, 4 pages.	☐
27	EUROPEAN PATENT OFFICE, Office Action mailed 25 November 2016, issued in connection with EP Application No. 13810340.3, 5 pages.	☐
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29	FALLER, Christof, "Coding of Spatial Audio Compatible with Different Playback Formats," Audio Engineering Society Convention Paper (Presented at the 117th Convention), October 28-31, 2004, 12 pages.	☐
30	Final Office Action mailed 05 June 2014, issued in connection with U.S. Patent Application No. 13/907666, filed on 31 May 2013, 12 pages	☐
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	32	Final Office Action mailed 13 September 2012, issued in connection with U.S. Patent Application No. 13/297000, filed on 15 November 2011, 17 pages	☐
	33	Final Office Action mailed 18 November 2015, issued in connection with U.S. Patent Application No. 13/533105, filed on 26 June 2012, 56 pages.	☐
	34	Final Office Action mailed 21 October 2011, issued in connection with U.S. Patent Application No. 10/816217, filed on 01 April 2004, 19 pages	☐
	35	Final Office Action mailed 27 March 2014, issued in connection with U.S. Patent Application No. 13/533105, filed on 26 June 2012, 29 pages	☐
	36	Final Office Action mailed 28 January 2011, issued in connection with U.S. Patent Application No. 10/816217, filed on 01 April 2004, 21 pages	☐
	37	Final Office Action mailed 30 June 2008, issued in connection with U.S. Patent Application No. 10/816217, filed on 01 April 2004, 30 pages	☐
	38	Final Office Action mailed on 03 August 2015, issued in connection with U.S. Patent Application No. 13/848921, filed on 22 March 2013, 13 pages	☐
	39	Final Office Action mailed on 03 December 2014, issued in connection with U.S. Patent Application No. 14/184528, filed on 19 February 2014, 12 pages	☐
	40	Final Office Action mailed on 03 July 2012, issued in connection with U.S. Patent Application No. 13/298090, filed on 16 November 2011, 46 pages	☐
	41	Final Office Action mailed on 03 June 2016, issued in connection with U.S. Patent Application No. 13/705176, filed on 05 December 2012, 24 pages	☐
	42	Final Office Action mailed on 03 March 2015, issued in connection with U.S. Patent Application No. 13/864251, filed on 17 April 2013, 13 pages	☐

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	43	Final Office Action mailed on 04 March 2015, issued in connection with U.S. Patent Application No. 13/848904, filed on 22 March 2013, 16 pages.	☐
	44	Final Office Action mailed on 05 March 2015, issued in connection with U.S. Patent Application No. 13/888203, filed on 06 May 2013, 13 pages.	☐
	45	Final Office Action mailed on 07 January 2015, issued in connection with U.S. Patent Application Serial No. 13/848932, filed on 22 March 2013, 14 pages	☐
	46	Final Office Action mailed on 09 March 2015, issued in connection with U.S. Patent Application No. 14/516867, filed on 17 October 2014, 14 pages.	☐
	47	Final Office Action mailed on 10 August 2015, issued in connection with U.S. Patent Application No. 14/290493, filed on 29 May 2014, 26 pages.	☐
	48	Final Office Action mailed on 11 August 2015, issued in connection with U.S. Patent Application No. 13/864247, filed on 17 April 2013, 15 pages	☐
	49	Final Office Action mailed on 11 February 2015, issued in connection with U.S. Patent Application No. 14/184526, filed on 19 February 2014, 13 pages	☐
	50	Final Office Action mailed on 11 February 2015, issued in connection with U.S. Patent Application No. 14/184,935, filed on 20 February 2014, 17 pages	☐

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☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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1	Non-Final Office Action mailed 19 March 2013, issued in connection with U.S. Patent Application No. 13/724048, filed 21 December 2012, 9 pages	☐
2	Non-Final Office Action mailed 21 June 2011, issued in connection with U.S. Patent Application No. 10/816217, filed 01 April 2004, 13 pages	☐
3	Non-Final Office Action mailed 22 January 2009, issued in connection with U.S. Patent Application No. 10/816217, filed 01 April 2004, 18 pages	☐
4	Non-Final Office Action mailed 25 July 2014, issued in connection with U.S. Patent Application No. 14/184526, filed 19 February 2014, 9 pages	☐
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	17	Non-Final Office Action mailed on 03 November 2016, issued in connection with U.S. Patent Application No. 14/184528, filed on 19 February 2014, 17 pages	☐
	18	Non-Final Office Action mailed on 04 June 2015, issued in connection with U.S. Patent Application No. 13/871795, filed on 26 April 2013, 16 pages.	☐
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	23	Non-Final Office Action mailed on 06 October 2016, issued in connection with U.S. Patent Application No. 15/088678, filed on 01 April 2016, 9 pages	☐
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	31	Non-Final Office Action mailed on 12 June 2015, issued in connection with U.S. Patent Application No. 13/848932, filed on 22 March 2013, 16 pages	☐
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	34	Non-Final Office Action mailed on 23 October 2014, issued in connection with U.S. Patent Application No. 13/864251, filed on 17 April 2013, 11 pages	☐
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	40	Non-Final Office Action mailed on 19 November 2014, issued in connection with U.S. Patent Application No. 13/848921, filed on 22 March 2013, 9 pages	☐
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	47	Non-Final Office Action mailed on 22 September 2016, issued in connection with U.S. Patent Application No. 15/155149, filed on 16 May 2016, 7 pages	☐
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1	ZX135: Installation Manual, LA Audio, April 2003, 44 pages	☐
2	"ZR-8630AV MultiZone Audio/Video Receiver, Installation and Operation Guide," Niles Audio Corporation, 2003, 86 pages	☐

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¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-29
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

**PATENTEE'S SUMMARY OF THE
EXAMINER INTERVIEW ON JUNE 13, 2017**

An in-person Examiner Interview took place at the U.S. Patent Office on June 13, 2017. Participants included Examiners Mary J. Steelman, Alex Kosowski, and Rachna Desai, and Patentee's representatives, Christopher D. Butts (Reg. No. 67,558) and Jeffrey P. Armstrong (Reg. No. 54,967). Patentee thanks the Examiners for their time in preparing for and conducting the Interview.

During the Interview, the Participants discussed claims 1, 16, 25, and 38, and the technical references cited in the Office Action, including (i) Universal Plug and Play ("UPnP") RenderingControl:1 for UPnP Ver. 1.0 (June 25, 2002); (ii) UPnP MediaServer:1 for UPnP Ver. 1.0 (June 25, 2002); (iii) UPnP AV Architecture:1 for UPnP Ver. 1.0 (June 25, 2002); and (iv) Crest Audio, NexSys Ver. 3.0 Software Manual). Patentee's representatives demonstrated aspects of the group volume control features recited in the claims with an Apple iPad running

Sonos Controller software controlling a zone group formed from two Sonos Play:1 zone players configured to play audio content in synchrony with each other. Patentee's representatives also explained how the technical references cited in the Office Action fail to teach or suggest at least (i) "adjusting a volume meter represented by an averaged value of audio volumes of the players in the group," in combination with the other elements of claims 1 and 25 and (ii) "adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group" in combination with the other elements of claims 16 and 38. No exhibits were shown. No agreement on confirmation of the claims was reached. Patentee agreed to file a response for further review and consideration by the Office.

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: June 25, 2017

By: /Jeffrey P. Armstrong/
Jeffrey P. Armstrong
Reg. No. 54,967

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

CERTIFICATE OF SERVICE

The undersigned hereby certifies that copies of the Patentee's Summary of the Examiner Interview on June 13, 2017, and this Certificate of Service, both of which were filed at the U.S. Patent Office on June 25, 2017, are being served, in their entirety, via Federal Express, upon the following third-party requestor:

Jackson Walker LLP
Attn: Christopher J. Rourk
2323 Ross Avenue, Suite 600
Dallas, TX 75201

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: June 25, 2017

By: /Jeffrey P. Armstrong/
Jeffrey P. Armstrong
Reg. No. 54,967



McDonnell Boehnen Hulbert & Berghoff
Law Offices

300 South Wacker Drive
Chicago, Illinois 60606-6709
www.mbhb.com

312-913-0001 phone
312-913-0002 fax

June 2, 2017

Via email: mary.steelman@uspto.gov

Examiner Mary J. Steelman
U.S. Patent & Trademark Office
P.O. Box 1450
Arlington, VA 22313-1450

RE: Interview Agenda for Reexamination 90/013,882 (Sonos 04-0601-REEXAM; 15-536-REX)

Examiner Steelman:

Thank you for agreeing to interview the above-referenced application on Wednesday, 07-Jun-2017 at 11am ET. An agenda of topics is outlined below:

Agenda for the Examiner Interview:

- A demonstration of a commercial embodiment of the features recited in the claims
- Proposed amendments to claim 1
- The 35 U.S.C. § 103 rejections in the Office Action
- The technical references cited in the Office Action
 1. UPnP AV Architecture:1 for UPnP Ver. 1.0 (June 25, 2002) ("UPnP AV")
 2. UPnP RenderingControl:1 for UPnP Ver. 1.0 (June 25, 2002) ("UPnP Rendering Control")
 3. UPnP MediaServer:1 for UPnP Ver. 1.0 (June 25, 2002) ("UPnP Media Server")
 4. UPnP Device Architecture Ver. 1.0 (June 8, 2000) ("UPnP Architecture")
 5. UPnP MediaRenderer:1 Device Template Ver. 1.01 (June 25, 2002) ("UPnP Media Renderer")
 6. Microsoft Universal Plug and Play (UPnP) Client Support (Aug. 2001) ("MS UPnP")
 7. U.S. Pub. 2002/0124097 ("Isley")
 8. Crest Audio, NexSys Ver. 3.0 Software Manual ("NexSys")
 9. U.S. Pat. 7,218,708 ("Berezowski")
 10. U.S. Pub. 2002/0188762 ("Tomassetti")

Proposed Amendment:

Without conceding the merits of the rejections and solely to advance prosecution, Patentee proposes the following amendments to claim 1 to further clarify the claim language and to generally put the claims in better condition for confirmation.

1. (Proposed Amendment) A method for controlling a plurality of players, the method comprising:

displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of ~~players~~ players synchronously in accordance with an adjustment made by a user.

Summary of Arguments for Consideration:

Patentee requests that the Office withdraw the § 103 rejections based on UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, NexSys, Berezowski, and Tomassetti (the “cited references”) for at least the reason that the cited references, individually or in combination, fail to teach or suggest all the claim limitations. At a minimum, the cited references fail to teach or suggest at least:

- “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25; and
- “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

Applicant’s review of the cited references found no disclosure of a volume meter represented by an averaged volume of audio volumes of the players in the group.

A. Summary of the UPnP References

- The UPnP references describe interactions between ***individual*** Media Sources, Media Renderers, and Control Points that control the Media Sources and Media Renderers.
- UPnP does not disclose a volume meter representing a value of audio volume of players in a group whatsoever, let alone a volume meter represented by an ***averaged value*** of audio volumes of the players in a group.

- **UPnP does not disclose synchronous playback by a group of devices**
 - “The UPnP AV Architecture does ***not*** enable...[s]ynchronized playback to multiple rendering devices,” UPnP AV, p. 3 (emphasis added).
- **UPnP does not disclose forming a zone group**
 - Establishing a connection between a UPnP MediaServer device and a UPnP MediaRenderer device does not amount to the claimed feature of “forming a zone group” as asserted in the Request for *Ex Parte* Reexamination and repeated in the Office Action. Office Action, p. 21.
 - As recited in the claims, the “zone group” includes multiple “players.”
 - The UPnP references describe a UPnP MediaServer device as a “source of the media content,” UPnP AV, p. 5.
 - Patentee’s review of the UPnP references found no disclosure of a UPnP MediaServer device having any sort of playback capability.
- **UPnP does not disclose controlling multiple devices as a group**
 - There is no reason for UPnP to describe group volume control because:
 - UPnP does not disclose zone group formation; and
 - UPnP does not disclose group playback.
- **UPnP does not disclose multiple Media Renderer devices playing content in synchrony from a single Media Source**
 - The diagram showing a Media Server device sending content to two ***separate*** Media Renderer devices on p. 23 of the Office Action is a diagram created by the third-party requestor – it does not appear anywhere in the UPnP references.
 - UPnP Rendering Control does ***not*** teach or suggest that “***separate*** devices can receive separate channels, and the channels can be controlled independently or as a whole.” Office Action, p. 28; Request for *Ex Parte* Reexamination, p. 28 (emphasis added)
 - Instead, at best, the UPnP references disclose a ***single*** UPnP Media Renderer device that can play an audio stream having multiple channels (e.g., a right and left channel), and that a UPnP Control Point can individually control the volume of each of the multiple channels (e.g., the “right channel” volume and the “left channel” volume) and the master volume of a ***single*** UPnP Media Renderer device.

B. Response to Ground 1: Claims 1, 8, 16, 18, 21, 25, and 28 are patentable over the six-way combination of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, and MS UPnP

Claims 1, 8, 16, 18, 21, 25, and 38 are patentable over the six-way combination of references in Ground 1 for at least the reason that UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, and MS UPnP, individually or in combination, fail to teach or suggest: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25 and (ii) “adjusting one of the volume meters...for the group of players, represented

by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

i. UPnP Architecture, UPnP Media Renderer, and MS UPnP fail to teach or suggest the group volume feature

The Office Action does not cite any of UPnP Architecture, UPnP Media Renderer, or MS UPnP for teaching “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Office Action, pp. 27-29. Patentee’s review of UPnP Architecture, UPnP Media Renderer, and MS UPnP likewise found no teaching or suggestion of the group volume control features recited in claims 1, 16, 25, and 38.

ii. The addition of UPnP Rendering Control does not overcome the deficiencies of UPnP Architecture, UPnP Media Renderer, and MS UPnP

The cited passages of UPnP Rendering Control describe the “A_ARG_TYPE_Channel variable that “is used to identify a particular channel of an audio output stream.” Office Action, p. 28 (quoting UPnP Rendering Control, p. 16). UPnP Rendering control explains that “[a] channel cluster is the collection of all channels, including the Master channel, within an audio stream,” that “[a] two-channel (stereo) cluster has three channels – the Master channel, the Left Front channel, and the Right Front channel,” and that “[t]he Rendering Control server allows Control Points to control each of these channels independently or as a whole.” Office Action, p. 28 (quoting UPnP Rendering Control, p. 41).

But contrary to the assertion in the Request for *Ex Parte* Reexamination, which was repeated in the Office Action, the cited portions of UPnP Rendering Control do ***not*** teach or suggest that “***separate*** devices can receive separate channels, and the channels can be controlled independently or as a whole.” Office Action, p. 28; Request for *Ex Parte* Reexamination, p. 28 (emphasis added).

Instead, at best, UPnP Rendering Control discloses a ***single*** UPnP Media Renderer device that can play an audio stream having multiple channels (e.g., a right and left channel), and that a UPnP Control Point can individually control the volume of each of the multiple channels (e.g., the “right channel” volume and the “left channel” volume) and the master volume of the ***single*** UPnP Media Renderer device. In particular, UPnP Rendering Control states, “[t]he Rendering Control Service exposes a set of state variables that can be used to control the audio output of ***a device***.” Office Action, pp. 28-29 (citing UPnP Rendering Control, pp. 6, 41 (emphasis added)).

UPnP Rendering Control illustrates this concept of independently controlling the master volume—as well as the volume of multiple different channels—on a ***single*** UPnP Media Renderer device in Figure 1. UPnP Rendering Control, Figure 1, p. 39. The diagram showing a Media Server sending content to two separate Media Renderer devices on p. 23 of the Office Action is a diagram created by the third-party requestor – it does not appear anywhere in the UPnP references. Nothing in the cited passages of UPnP Media Renderer (or the other UPnP references) teaches or suggests a scenario with a first Media Renderer device playing a right channel, a second Media Renderer device playing a left channel, and a Control Point that adjusts a “master volume” that controls the volume on both the first and second Media Renderer devices as suggested in the Request for *Ex Parte* Reexamination and repeated in the Office Action.

iii. The addition of UPnP Media Server does not overcome the deficiencies of UPnP Architecture, UPnP Media Renderer, MS UPnP, and UPnP Rendering Control

The Office Action cites a passage from the UPnP Media Server reference that discloses “MediaServer devices [that] are used in conjunction with one or more MediaRenderer devices(s) to allow a Control Point to discover entertainment (AV) content (e.g., video, music, images, etc.) on the MediaServer and to render that content on any appropriate MediaRenderer within the home network.” Office Action, p. 29 (quoting UPnP Media Server, p. 7).

But using a Control Point to discover content on MediaServer devices for playback on MediaRenderer devices does not amount to “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38.

iv. The addition of UPnP AV does not overcome the deficiencies of UPnP Architecture, UPnP Media Renderer, MS UPnP, UPnP Rendering Control, and UPnP Media Server

The Office Action cites a passage from UPnP AV stating that “multiple (virtual) instances of the AVTransport service allow the MediaServer to support multiple Renderers at the same time.” Office Action, p. 29 (quoting UPnP AV, p. 7). But while a Media Server device may transmit different content to multiple Renderer devices at the same time, UPnP AV never describes a Media Server device as controlling the volume of any Media Renderer device. UPnP AV, p. 6 (“the Media Server and Media Renderer do not control each other via UPnP actions.”). Only a Control Point can control a Media Render device’s volume via a UPnP action. UPnP AV, p. 6 (“the Control Point is also able to control the various rendering characteristics of the Renderer device such as...Volume...”).

Nevertheless, nothing in the cited passage of UPnP AV teaches or suggests a Control Point (or any other device) performing the specific features of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Indeed, “[t]he UPnP AV Architecture does not enable...[s]ynchronized playback to multiple rendering devices,” UPnP AV, p. 3 (emphasis added), so there is no reason for a Control Point to implement the group volume control features recited in the claims. Moreover, there is no evidence in the cited references that a person of skill in the art would be motivated to “synchronously” adjust the volume of a group of Media Renderer devices that are each playing different content.

C. Response to Ground 2: Claims 1, 8, 16, 18, 21, 25, and 38 are patentable over the eight-way combination of Isley, UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and NexSys

Claims 1, 8, 16, 18, 21, 25, and 38 are patentable over the eight-way combination of Isley, UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and NexSys for at least the reason that the cited references fail to teach or suggest: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the

players in the group,” in combination with the other elements of claims 1 and 25; and (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

i. UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and Isley fail to teach or suggest the group volume feature

The combination of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, and MS UPnP fails to teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38, for at least the reasons described above.

Additionally, the Office Action does not cite Isley for teaching the group volume control feature recited in the claims. Office Action, pp. 89-90. And Patentee’s review of Isley likewise found no teaching or suggestion of the group volume control features recited in claims 1, 16, 24, and 38.

ii. The addition of NexSys does not overcome the deficiencies of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and Isley

NexSys discloses a graphical user interface controlling the volume of a group of amplifier channels. NexSys, pp. 7.4, 9.3. However, to the extent the Office contends the group of amplifiers in NexSys amounts to a “zone group” or a “group of players” as recited in the claims, the “Group” control in examples shown on pp. 7.4 and 9.3 is not “an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38.

The example on p. 7.4 of NexSys shows what appears to be approximate volume levels of a “Right Highs” amplifier at -20dB, a “Right Lows” amplifier at -20dB, and a “Right Subs” amplifier at -20dB. The average value of the levels for the “Right Highs,” “Right Lows,” and “Right Subs” amplifier channels is about -20dB, but the “Group” control appears to be 0dB. Thus, the “Group” controller shown on p. 7.4 of NexSys is not “an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38.

The example on p. 9.3 functions in the same manner as the example on p. 7.3. The example on p. 9.3 of NexSys shows a “Stage Right” fader that controls a set of amplifier channels, where the “fader ranges from +83dB to -83dB” and is “a relative level to the amplifiers in its group.” NexSys, p. 9.3. NexSys explains that “positive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount.” NexSys, p. 9.3. “For instance, if the amp is set to -10, and the group level is raised +5, the amp level will increase by 5dB to a level of -5.” NexSys, p. 9.3. Thus, the “Stage Right” fader is not an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38.

D. Ground 3: The claims are patentable over the ten-way combination of Berezowski, Tomassetti, Isley, UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and NexSys

The combination of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, and NexSys fails to teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38, for at least the reasons described above.

The addition of Berezowski and Tomassetti fails to overcome the deficiencies of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, and NexSys for at least the reason that Berezowski and Tomassetti also fail to teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38.

The Office Action does not cite Berezowski or Tomassetti for teaching or suggesting the group volume control feature. Office Action, pp. 158-166. And Patentee’s review of UPnP Architecture, UPnP Media Renderer, and MS UPnP found no teaching or suggestion of the group volume control features recited in claims 1, 16, 25, and 38. The Office Action cites NexSys for teaching the group volume control feature recited in the claims. But NexSys fails to teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38, for at least the reasons disclosed above.

If you have questions, or if you would like additional information to prepare for the interview, please feel free to call me.

Best regards,

A handwritten signature in black ink, appearing to read "J. Armstrong", with a stylized flourish at the end.

Jeff Armstrong
312-913-2104 (office)

Applicant Initiated Interview Request Form

Application No.: 90/013,882 First Named Applicant: US 7,571,014
 Examiner: Steelman, Mary J. Art Unit: 3992 Status of Application: Ex Parte Reexamination

Tentative Participants:

(1) Examiner Steelman (2) Chris Bulfs (67,558)
 (3) Jeff Armstrong (54,967) (4) _____

Proposed Date of Interview: 07-Jun-2017 Proposed Time: 11am ET (☉AM☉PM)

Type of Interview Requested:

(1) ☐ Telephonic (2) ☒ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☒ YES ☐ NO

If yes, provide brief description: Demonstration of commercial embodiment of claimed invention

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) <u>103</u>	<u>1, 16, 25, 38</u>	<u>multiple (see attached)</u>	☐	☐	☐
(2) _____	_____	_____	☐	☐	☐
(3) _____	_____	_____	☐	☐	☐
(4) _____	_____	_____	☐	☐	☐

☒ Continuation Sheet Attached ☒ Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: see attached

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Jeffrey P. Armstrong/
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Jeffrey P. Armstrong
Typed/Printed Name of Applicant or Representative

312-913-2104
Applicant's/Applicant's Representative's Telephone Number

54967
Registration Number, if applicable

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 24 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/013,882	12/27/2016	7571014	04-0601-REEXAM (15-536)	8704
107361 7590 06/22/2017 McDonnell Boehnen Hulbert & Berghoff LLP Sonos, Inc. 300 South Wacker Drive Chicago, IL 60606			EXAMINER STEELMAN, MARY J	
			ART UNIT 3992	PAPER NUMBER
			MAIL DATE 06/22/2017	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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McDonnell Boehnen Hulbert & Berghoff LLP

300 South Wacker Drive, Suite 3200

Chicago, IL 60610

***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/013,882.

PATENT NO. 7571014.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

/Mary Steelman/

Primary Examiner

PTOL-465 (Rev.07-04)

Art Unit: 3992

<i>Ex Parte Reexamination Interview Summary</i>	Control No.	Patent Under Reexamination
	90/013,882	7571014
	Examiner	Art Unit
	MARY STEELMAN	3992

All participants (USPTO personnel, patent owner, patent owner's representative):

(1) <u>Mary Steelman, Primary Examiner</u> (2) <u>Alex Kosowski, SPE</u>	(3) <u>Rachna Desai, Primary Examiner</u> (4) <u>Jeffrey Armstrong, Reg. No.54.967</u>
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Date of Interview: 13 June 2017

Type: a) ☐ Telephonic b) ☒ Video Conference
 c) ☐ Personal (copy given to: 1) ☐ patent owner 2) ☐ patent owner's representative)

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.
 If Yes, brief description: Sonos player devices demonstrated

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.
 Any other agreement(s) are set forth below under "Description of the general nature of what was agreed to..."

Claim(s) discussed: 1,16,25 and 38.

Identification of prior art discussed: UPnP, UPnP Rendering Control, UPnP Media Server, UPnP AV, NexSys.

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:
Also present: Chris Butts, Sonos In House Counsel. - Discussed grouped player devices, controlling group or individual player devices, averaging audio volume, and synchronized audio volume. Applicants will provide support addressing arguments of claim limitations not taught by prior art. No agreement was reached. Interview request and agenda are attached.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims patentable, if available, must be attached. Also, where no copy of the amendments that would render the claims patentable is available, a summary thereof must be attached.)

A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION MUST INCLUDE PATENT OWNER'S STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. (See MPEP § 2281). IF A RESPONSE TO THE LAST OFFICE ACTION HAS ALREADY BEEN FILED, THEN PATENT OWNER IS GIVEN **ONE MONTH FROM THIS INTERVIEW DATE TO PROVIDE THE MANDATORY STATEMENT OF THE SUBSTANCE OF THE INTERVIEW (37 CFR 1.560(b)). THE REQUIREMENT FOR PATENT OWNER'S STATEMENT CAN NOT BE WAIVED. **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).****

/RSD/	/AJK/	/Mary Steelman/ Primary Examiner
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cc: Requester (if third party requester)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		90013882	
	Filing Date		2016-12-27	
	First Named Inventor	Lambourne / 7,571,014		
	Art Unit	3992		
	Examiner Name	Steelman		
	Attorney Docket Number	04-0601-REEXAM;15-536-REX		

U.S.PATENTS								
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
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If you wish to add additional U.S. Patent citation information please click the Add button.								
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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
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NON-PATENT LITERATURE DOCUMENTS								
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		90013882
	Filing Date		2016-12-27
	First Named Inventor	Lambourne / 7,571,014	
	Art Unit	3992	
	Examiner Name	Steelman	
	Attorney Docket Number	04-0601-REEXAM;15-536-REX	

1	Opening Rebuttal Expert Report of Andrew Wolfe submitted in Sonos, Inc. v. D&M Holdings, Inc. et al. (D. Del. CA No. 14-1330-RGA) (17-Apr-2017) (506 pages)	☐
2	Notice of Failure to Comply with Ex Parte Reexamination Request Filing Requirements mailed by the Patent Office in reexamination 90/013,959 (25-Mar-2017) (10 pages)	☐
3	Corrected Request for Ex Parte Reexamination submitted filed by the third-party requestor in reexamination 90/013,959 (16-Jun-2017) (126 pages)	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	Lambourne / 7,571,014
	Art Unit	3992
	Examiner Name	Steelman
	Attorney Docket Number	04-0601-REEXAM;15-536-REX

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Jeffrey P. Armstrong/	Date (YYYY-MM-DD)	2017-06-21
Name/Print	Jeffrey P. Armstrong	Registration Number	54,967

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

CERTIFICATE OF SERVICE

The undersigned hereby certifies that copies of the Patentee's Information Disclosure Statement, the non-patent literature references cited in the Information Disclosure Statement, and this Certificate of Service, each of which was filed at the U.S. Patent Office on June 21, 2017, are being served, in their entirety, via Federal Express, upon the following third-party requestor:

Jackson Walker LLP
Attn: Christopher J. Rourk
2323 Ross Avenue, Suite 600
Dallas, TX 75201

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: June 21, 2017

By: /Jeffrey P. Armstrong/
Jeffrey P. Armstrong
Reg. No. 54,967

Electronic Acknowledgement Receipt	
EFS ID:	29565591
Application Number:	90013882
International Application Number:	
Confirmation Number:	8704
Title of Invention:	Method and apparatus for controlling multimedia players in a multi-zone system
First Named Inventor/Applicant Name:	7571014
Customer Number:	107361
Filer:	Jeffrey Armstrong
Filer Authorized By:	
Attorney Docket Number:	04-0601-REEXAM (15-536)
Receipt Date:	21-JUN-2017
Filing Date:	27-DEC-2016
Time Stamp:	15:09:39
Application Type:	Reexam (Patent Owner)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	04-0601-REEXAM_IDS.pdf	63386	no	3
			23fb4aeb32e2040de96ab3ce22fe7a7a9790be49		

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Non Patent Literature	NPL01_Wolfe_Report_image_P art1_of_11.pdf	13864338	no	50
			a3535ca5c77657c87b9c9f1d64db9148a63a9b0b		
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3	Non Patent Literature	NPL01_Wolfe_Report_image_P art2_of_11.pdf	19628484	no	50
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Information:					
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Warnings:					
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12	Non Patent Literature	NPL01_Wolfe_Report_image_Part11_of_11.pdf	1996415	no	6
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Warnings:					
Information:					
13	Non Patent Literature	NPL02_Notice_of_Incomplete_Ex_Parte_Request_90013959.pdf	518124	no	10
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Warnings:					
Information:					
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Warnings:					
Information:					
15	Reexam Certificate of Service	04-0601-REEXAM_Certificate_of_Service.pdf	79031	no	1
			fc690051a68f66b2214d72be43e3e33e6d007169		
Warnings:					
Information:					
Total Files Size (in bytes):			189782914		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF ANDREW WOLFE, PH.D.

1. I have been asked by the Patentee, Sonos, Inc., in the above-captioned *Ex Parte* Reexamination to opine on certain aspects of the technical references cited in the Non-Final Office Action mailed on April 20, 2017 (“the Office Action”).

2. I have submitted an Expert Report in the matter of Sonos, Inc. v. D&M Holdings et al., (D. Del., C.A. No. 14-1330-RGA) (“the related litigation”), a copy of which will be provided to the Office in an Information Disclosure Statement.

3. My opinions in this declaration are consistent with my opinions in my Expert Report from the related litigation. However, my opinions in this declaration only address points raised in the Office Action that I have been specifically asked to opine upon. The fact that this declaration does not express every aspect of every opinion I have provided in the related litigation does not mean that I have abandoned those opinions or aspects thereof, or that those

opinions or aspects thereof are less meaningful or relevant than the opinions expressed in the present declaration.

4. I have more than 30 years of experience as a computer architect, computer system designer, personal computer graphics designer, educator, and executive in the electronics industry. A detailed record of my professional qualifications is attached as Exhibit 1 to this declaration and summarized below.

5. In 1985, I earned a B.S.E.E. degree in Electrical Engineering and Computer Science from The Johns Hopkins University. In 1987, I received an M.S. degree in Electrical and Computer Engineering from Carnegie Mellon University. In 1992, I received a Ph.D. in Computer Engineering from Carnegie Mellon University. My doctoral dissertation proposed a new approach for the architecture of a computer processor.

6. In 1983, I began designing touch sensors, microprocessor-based computer systems, and I/O (input/output) cards for personal computers as a senior design engineer for Touch Technology, Inc. During the course of my design projects with Touch Technology, I designed I/O cards for PC-compatible computer systems, including the IBM PC-AT, to interface with interactive touch-based computer terminals that I designed for use in public information systems. I continued designing and developing related technology as a consultant to the Carroll Touch division of AMP, Inc., where in 1986 I designed one of the first custom touchscreen integrated circuits.

7. From 1986 through 1987, I designed and built a high-performance computer system as a student at Carnegie Mellon University. From 1986 through early 1988, I also developed the curriculum, and supervised the teaching laboratory, for processor design courses.

8. In the latter part of 1989, I worked as a senior design engineer for ESL-TRW Advanced Technology Division. While at ESL-TRW, I designed and built a bus interface and memory controller for a workstation-based computer system, and also worked on the design of a multiprocessor system.

9. At the end of 1989, I (along with some partners) reacquired the rights to the technology I had developed at Touch Technology and at AMP, and founded The Graphics Technology Company. Over the next seven years, as an officer and a consultant for The Graphics Technology Company, I managed the company's engineering development activities and personally developed dozens of touch screen sensors, controllers, and interactive touch-based computer systems.

10. I have consulted, formally and informally, for a number of fabless semiconductor companies. In particular, I have served on the technical advisory boards for two processor design companies: BOPS, Inc., where I chaired the board, and Siroyan Ltd., where I served in a similar role for three networking chip companies—Intellon, Inc., Comsilica, Inc, and Entridia, Inc.—and one 3D game accelerator company, Ageia, Inc.

11. I have also served as a technology advisor to Motorola and to several venture capital funds in the U.S. and Europe. Currently, I am a director of Turtle Beach Corporation, providing guidance in its development of premium audio peripheral devices for a variety of commercial electronic products, including speakers.

12. From 1991 through 1997, I served on the Faculty of Princeton University as an Assistant Professor of Electrical Engineering. At Princeton, I taught undergraduate and graduate-level courses in Computer Architecture, Advanced Computer Architecture, Display Technology, and Microprocessor Systems, and conducted sponsored research in the area of

computer systems and related topics. I was also a principal investigator for DOD research in video technology and a principal investigator for the New Jersey Center for Multimedia Research. From 1999 through 2002, I taught the Computer Architecture course to both undergraduate and graduate students at Stanford University multiple times as a Consulting Professor. At Princeton, I received several teaching awards, both from students and from the School of Engineering. I have also taught advanced microprocessor architecture to industry professionals in IEEE and ACM sponsored seminars. I am currently a lecturer at Santa Clara University teaching courses on Computer Organization and Architecture and Mechatronics.

13. From 1997 through 2002, I held a variety of executive positions at a publicly-held fabless semiconductor company originally called S3, Inc. and later called Sonicblue Inc. I held the positions of Chief Technology Officer, Vice President of Systems Integration Products, Senior Vice President of Business Development, and Director of Technology, among others. At the time I joined S3, the company supplied graphics accelerators for more than 50% of the PCs sold in the United States.

14. Beginning in 1998, I began to work closely with S3's largest customer, Diamond Multimedia, to explore possible opportunities for a merger. My investigation included evaluating the technology, market, and business model related to the "Diamond Rio PMP300," the first commercially-viable flash-memory MP3 player. In 1999, I led the merger negotiations between the two companies, managed significant parts of company integration, and, after the merger was complete, worked on new product development. Soon after the merger with Diamond Multimedia, I helped introduce the "Diamond Rio PMP500," a portable music player that included USB capability and also the ability to play downloaded files purchased from the

Audible.com website. I also helped develop relationships with MP3 music vendors, including eMusic and MP3.com.

15. While at Diamond Multimedia, I also helped develop the Rio 600 and 800 MP3 players, which included support for digital rights management (“DRM”) protected music, using protocols from Microsoft. I also helped to develop the Rio Receiver (also sold by Dell), the first successful digital music streaming client device. I also helped develop the Rio Audio Center, a digital music server and receiver. During the development of the PMP500 and the Rio 600, I also helped develop a music delivery platform and webstore backend service for selling DRM-protected music. In 1999, this business segment was spun out as a separate company called RioPort.com. I served on the RioPort.com board of directors and became involved in their product and technology strategy. For example, I was involved in RioPort.com becoming the provider of the backend services for what was known at the time as the BestBuy.com music store and the MTV.com music store. I also worked with Microsoft and various music studios in developing strategies, business models, and technologies for DRM-protected music delivery. Further, I worked with a company established by Sony Music Entertainment and Universal Music Group, initially called “Duet,” that was created to deliver online music subscriptions to users. While working on Duet, we developed a technology and business model using Microsoft’s DRM solution that allowed monthly subscribers to download as much music as they wanted to a Rio 600 and play the downloaded music offline. This subscription download service launched as the “Pressplay” music service and was later renamed “Napster.” I also managed engineering and marketing for the Rio product line for a period of time as an interim general manager. I was also an investor in Rioport.com.

16. I served as a board member and technical advisor at KBGear Inc. from 1999-2001. KBGear Inc. designed and produced digital cameras and music players.

17. I have published more than 50 peer-reviewed papers in computer architecture and computer systems and IC design.

18. I also have chaired IEEE and ACM conferences in microarchitecture and integrated circuit design and served as an associate editor for IEEE and ACM journals.

19. I am a named inventor on at least 53 U.S. patents and 30 foreign patents including patents on networked digital media.

20. In 2002, I was the invited keynote speaker at the ACM/IEEE International Symposium on Microarchitecture and at the International Conference on Multimedia. From 1990 through 2005, I have also been an invited speaker on various aspects of technology and the PC industry at numerous industry events including the Intel Developer's Forum, Microsoft Windows Hardware Engineering Conference, Microprocessor Forum, Embedded Systems Conference, Comdex, and Consumer Electronics Show, as well as at the Harvard Business School and the University of Illinois Law School. I have been interviewed on subjects related to computer graphics and video technology and the electronics industry by publications such as the Wall Street Journal, New York Times, Los Angeles Times, Time, Newsweek, Forbes, and Fortune as well as CNN, NPR, and the BBC. I have also spoken at dozens of universities including MIT, Stanford, University of Texas, Carnegie Mellon, UCLA, University of Michigan, Rice, and Duke.

21. I have reviewed and considered the specification, claims, and prosecution history of the U.S. Pat. 7,571,014 (Lambourne '014) under reexamination.

22. I have reviewed and considered the Request for *Ex Parte* Reexamination filed on December 21, 2016, and the Office Action mailed on April 20, 2017.

23. I have also reviewed and considered the following references cited in the Office Action mailed on April 20, 2017: (1) Universal Plug and Play (“UPnP”) AV Architecture:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP AV”); (2) Universal Plug and Play (“UPnP”) RenderingControl:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP Rendering Control”); (3) Universal Plug and Play (“UPnP”) MediaServer:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP Media Server”); (4) Universal Plug and Play (“UPnP”) Device Architecture Ver. 1.0 (June 8, 2000) (“UPnP Architecture”); (5) Universal Plug and Play (“UPnP”) MediaRenderer:1 Device Template Ver. 1.01 (June 25, 2002) (“UPnP Media Renderer”); (6) Microsoft Universal Plug and Play (UPnP) Client Support (Aug. 2001) (“MS UPnP”); (7) U.S. Pub. 2002/0124097 (“Isley”); (8) Crest Audio, NexSys Ver. 3.0 Software Manual) (“NexSys”); (9) U.S. Pat. 7,218,708 (“Berezowski”); and (10) U.S. Pub. 2002/0188762 (“Tomassetti”).

The Lambourne ‘014 Patent

24. One aspect of Sonos’s multi-room audio system is the ability to adjust the volume of Sonos Zone Players in a group both individually and as a group, which is also based on the technology that Sonos developed prior to releasing its networked multi-room audio system in January 2005.

25. In conventional multi-room audio systems, all management and control functions were handled by a single, centralized A/V receiver, and there was no need (or ability) to coordinate audio players in different rooms of a user’s home. This configuration presented several limitations, some of which are highlighted in Lambourne ‘014: “[I]t can be difficult for the traditional system to accommodate the requirement of dynamically managing the ad hoc

creation and deletion of groups. Other than the above mentioned problem, the control of the audio players as a group does not exist. For example, the audio volume of the audio players in the traditional multi-zone audio system needs to be adjusted one at a time, resulting in an inconvenient and non-homogenous audio environment. There is, therefore, a need for solutions in a multi-zone audio system to control a plurality of audio players and their audio characteristics from one controlling device.” Lambourne ‘014, 2:1-13.

26. Thus, in conjunction with its technology for dynamically grouping Zone Players together to play the same audio in synchrony, Sonos also developed a new group volume control interface for its Controller that provided control over the volume of Zone Players in a group both individually and as a group.

27. One aspect of Sonos’s inventive group volume control includes “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.” In operation, adjusting the group volume using a volume meter represented by an averaged value changes the volumes of the individual players by different magnitudes depending on each player’s volume level.

28. Because the “volume meter [is] represented by an averaged value of audio volumes of the players in the group,” adjusting an individual volume meter causes the group volume meter to change to reflect the change in the average volume of the players in the group caused by the change to the individual volume meter.

29. One advantage of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes

changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user,” is that, “not only can each of the zone players be individually controlled, but also two or more of the zone players may be...controlled as if they were a single unit.” Lambourne ‘014, 4:22-27, 15:1-5.

30. The use of an average value to represent group volume provides the user with a beneficial representation of the impact of volume adjustments. The average reflects both adjustments to the group as a whole and adjustments to individual players within the group. A group average representation can be made to appear linear or at least monotonic in response to individual adjustments and thus will seem natural to a user. Moreover, it is easy for a user to understand how to adjust all of the group members, and then to see the impact of individual adjustments on the total volume. Average group adjustments are also valuable when multiple players in a group can be heard from a single location in a user’s home or office.

The UPnP References

31. The UPnP references describe interactions between UPnP Media Sources, UPnP Media Renderers, and UPnP Control Points, where a given UPnP Control Point may control multiple respective individual UPnP Media Sources and/or UPnP Media Renderers.

32. The UPnP references do not describe configuring multiple UPnP Media Renderer devices into a group or controlling multiple UPnP Media Renderer devices as a group, let alone controlling the volume in a group-wise manner via a UPnP Control Point.

33. The UPnP references do not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the reasons that UPnP does not disclose (i) forming a group of Media Renderer devices or (ii) synchronized playback of content by multiple Media Renderer devices.

34. Establishing a connection between a UPnP Media Server and a UPnP Media Renderer does not amount to the claimed feature of “forming a zone group” because a UPnP Media Server is not a “player.”

35. UPnP draws a clear distinction between the “well-defined” roles of a UPnP Media Server component and a UPnP Media Renderer component. UPnP AV, p. 5. The UPnP Media Server component is “the source of the media content,” whereas the UPnP Media Renderer component is the “sink for the content.” UPnP AV, p. 5. Thus, the UPnP Media Server’s role is to supply media content to the UPnP Media Renderer over a network, and the UPnP Media Renderer’s role is to “render” (i.e., “play”) the content.

36. Consistent with these “well-defined” roles, the UPnP Media Server is only a “source of the media content.” UPnP AV, p. 5. The UPnP references do not teach or suggest a UPnP Media Server component that plays media content or even a UPnP Media Server component with a volume control.

37. Because a UPnP Media Server does not play content, a UPnP Media Server does not amount to a “player” in the context of the claims.

38. And because a “zone group” as recited in the claims includes multiple “players,” the combination of a UPnP Media Server and a UPnP Media Renderer does not amount to a “zone group” as recited in the claims, and thus, the UPnP references do not teach or suggest the feature of “forming a zone group” as recited in the claims.

39. Indeed, in the example of “establish[ing] a connection between a first device with a UPnP Media server and a Second Device with a UPnP Media Renderer, to create a ‘zone group’” proposed on p. 27 of the Request for *Ex Parte* Reexamination and repeated on p. 21 of the Office Action, the UPnP references describe no mechanism (via a UPnP Control Point or

otherwise) for adjusting a volume for the UPnP Media Server and UPnP Media Renderer for at least the reason that the UPnP references do not disclose a UPnP Media Server that has a volume control.

40. The UPnP references also do not teach or suggest synchronized playback of content by multiple Media Renderer devices.

41. The UPnP references explicitly state that “[t]he UPnP AV Architecture does not enable...[s]ynchronized playback to multiple rendering devices.” UPnP AV, p. 3.

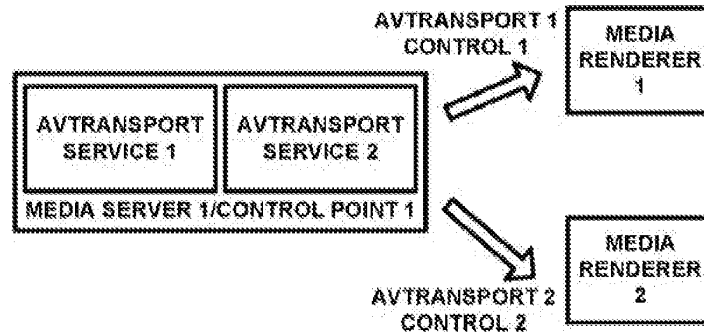
42. The IEEE 1394 Isochronous-push Transfer Protocol (commonly known as FireWire) mentioned on p. 12 of UPnP AV is merely a transmission protocol, which is different than synchronizing playback of content among players.

43. Synchronous transmission such as IEEE 1394 is neither necessary nor sufficient for synchronous playback of content. In this context, synchronous transmission merely means clocked data communications.

44. There is no reason for a UPnP Control Point to perform the feature of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” because UPnP does not disclose or describe forming a group of Media Renderer devices or synchronizing the playback of content by multiple Media Renderer devices.

45. There is no evidence in the cited references that a person of skill in the art would have been motivated to “synchronously” adjust the volume of multiple UPnP Media Renderer devices in a group-wise fashion that are each playing different content, even when the separate UPnP Media Renderer devices receive the content from the same UPnP Media Server.

46. The diagram on p. 31 of the Request for *Ex Parte* Reexamination showing a UPnP Media Server device sending content to two separate UPnP Media Renderer devices (reproduced below) was created by the third-party requestor.



47. This diagram is misleading and inaccurate -- it does not appear anywhere in the UPnP references, and the functionality that the diagram suggests (as represented in the Request for *Ex Parte* Reexamination) is contrary to the express teachings of the UPnP references.

48. UPnP Rendering Control does not teach or suggest that “separate devices can receive separate channels, and the channels can be controlled independently or as a whole” as stated on p. 28 of the Request for *Ex Parte* Reexamination and repeated on p. 28 of the Office Action.

49. UPnP Rendering Control discloses a single UPnP Media Renderer device that can play an audio stream having multiple channels (e.g., a right and left channel), and that a UPnP Control Point can individually control the volume of each of the multiple channels (e.g., the “right channel” volume and the “left channel” volume) and the master volume of the single UPnP Media Renderer device.

50. UPnP Rendering Control states that “[t]he Rendering Control Service exposes a set of state variables that can be used to control the audio output of a device” -- not multiple devices. UPnP Rendering Control, p. 41.

51. Neither UPnP Media Renderer nor the other UPnP references teach or suggest a scenario with a first UPnP Media Renderer device playing a right channel, a second UPnP Media Renderer device playing a left channel, and a UPnP Control Point that adjusts a “master volume” that controls the volume on both the first and second UPnP Media Renderer devices as suggested in the third-party requestor’s misleading and inaccurate diagram on p. 31 the Request for *Ex Parte* Reexamination and repeated on p. 34 of the Office Action. Nothing in the UPnP references describes jointly controlling the volume of multiple playback devices.

52. Using a UPnP Control Point to discover content on UPnP Media Server devices for playback on UPnP Media Renderer devices does not amount to “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38.

53. UPnP AV never describes a UPnP Media Server device as controlling the volume of a UPnP Media Renderer device. As described in the UPnP references, only a UPnP Control Point can control a UPnP Media Render device’s volume via a UPnP action. UPnP AV, pp. 6-7.

The NexSys Software Manual

54. The NexSys software manual describes a user interface for controlling amplifiers¹.

55. The NexSys software manual does not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the

¹ A NexSys-controlled amplifier like the ones described in the NexSys software manual does not amount to a “player” under the *Markman* Order issued by the District Court on January 12, 2017, in the related litigation. Additionally, the NexSys reference does not teach or suggest “synchronizing all the players in the zone group.”

reason that the volume control in NexSys is not “an averaged value of audio volumes of the players in the group.”

56. The group fader in NexSys represents “a relative level to the amplifiers in the group,” where “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount,” NexSys, p. 9.3, rather than “a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or a “volume meter[.]...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38.

57. The example on p. 7.4 of NexSys shows attenuation levels for amplifiers rather than volume levels for “players” as recited in the claims.

58. The attenuation of the “Right Highs” amplifier is at -20dB, the attenuation level of the “Right Lows” amplifier is at -20dB, and the attenuation of the “Right Subs” amplifier is at -20dB. The average value of the attenuation levels for the “Right Highs,” “Right Lows,” and “Right Subs” amplifier channels is about -20dB, but the attenuation level shown on the group fader controller appears to be about 0dB. NexSys, p. 7.4.

59. Thus, the group fader controller shown on p. 7.4 of NexSys is not an averaged value of attenuation levels of the amplifiers in the group, much less “an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38.

60. The example on p. 9.3 of NexSys functions in the same manner as the example on p. 7.4 of NexSys.

61. The example on p. 9.3 of NexSys shows a “Stage Right” fader that controls attenuation levels for set of amplifier channels, where the “fader ranges from +83dB to -83dB” and is “a relative level to the amplifiers in its group.” NexSys, p. 9.3.

62. In the example on p. 9.3 of NexSys, “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount.” NexSys, p. 9.3. “For instance, if the amp is set to -10, and the group level is raised +5, the amp level will increase by 5dB to a level of -5.” NexSys, p. 9.3.

63. Thus, like the example on p. 7.4, the “Stage Right” fader on p. 9.3 is also not “an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38.

64. Contrary to the hypothetical initial startup scenario proposed on pp. 14-16 of Appendix B of the Request for *Ex Parte* Reexamination and reproduced in on pp. 94-95 of the Office Action, a person of ordinary skill in the art would understand that an individual amplifier’s attenuation level in the NexSys system would be set to -83dB at initial startup (minimum volume) rather than “zero” (maximum value). See, e.g., NexSys, p. 9.4 (figure showing all amplifiers at -83); p. 9.5 (showing “Group” volume control set to 0 and each amplifier’s volume control set to -83). NexSys explains that “[e]ach amplifier channel’s attenuator operates within a range from no attenuation (0dB) to full attenuation (-83dB).” NexSys, p. 9.1.

65. The group fader in NexSys also does not represent “an averaged value of audio volumes of the players in the group” because a change to an individual amplifier’s level does not result in a change to the group fader level.

66. NexSys describes a “control hierarchy” where adjusting the level of the group fader changes the levels of each amplifier in the group, but changing an individual amplifier’s level does not result in a change the level of the group fader. NexSys, pp. 9.4-9.5.

67. Arrows in the “Control Hierarchy Diagram” show one-way control from higher levels in the hierarchy to lower levels in the hierarchy. NexSys, pp. 9.4-9.5. Changes to faders in a lower level of the hierarchy do not result in changes to a fader at a higher level in the hierarchy.

68. Modifying the group fader in NexSys to represent “an averaged value of audio volumes of the players in the group” would result in a control scheme where positive and negative changes to the group fader level in NexSys would cause different magnitude increases and decreases for the amplifier channels controlled by the group fader.

69. In a system like NexSys where a sound engineer has set amplifier levels relative to each other, an average control scheme that does not maintain the relative levels between the amplifiers in the group would undesirably change the balance that the audio engineer has set among the different amplifier channels (e.g., “Right Highs,” “Right Lows”, and “Right Subs,” shown on p. 7.4 of NexSys) when changing the overall attenuation level of the group of amplifier channels via the group fader.

70. I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Date: June 20, 2017

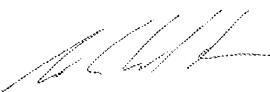
By: 
Andrew Wolfe

EXHIBIT 1

Andrew Wolfe Ph.D.

20 S. Santa Cruz Ave. Suite 101
Los Gatos, CA 95030
(408) 402-5872 (office) (408) 394-1096 (mobile)
Email: awolfe@awolfe.org

Education:

Ph.D. in Computer Engineering, Carnegie Mellon University, 1992
Visiting Graduate Student, Center for Reliable Computing, Stanford University, 1988-1989
M.S. in Electrical and Computer Engineering, Carnegie Mellon University, 1987
B.S.E.E. in Electrical Engineering and Computer Science, The Johns Hopkins University, 1985

Recent Employment:

Consultant, [October 2002-present]

Wolfe Consulting

Consultant on processor technology, computer systems, consumer electronics, software, design tools, and intellectual property issues. Testifying and consulting expert for IP and other technology-related litigation matters.

Sample clients include:

AMD	Nvidia	Samsung
IBM	Motorola	HTC
SMIC	AMKOR	Huawei
Dell	Honeywell	Western Digital
Nintendo	Kingston	Sonos
Moneygram	Arraycomm	Insilica
Synaptics	Activision	Sawstop
Mysticom	P.A.R.C.	Quester Ventures

Lecturer, [September 2013-present]

Santa Clara University

Teaching graduate and undergraduate courses on computer architecture, electronics and embedded computing, and mechatronics.

Chief Technical Officer, [1999-2002]; Sr. VP of Business Development, [2001-2002]; VP, Systems Integration, [1998 - 1999]; Director of Technology, S3 Fellow, [1997 - 1998]

SONIC|blue, Inc., Santa Clara, CA (formerly S3 Inc.)

Strategic Business Development:

Developed and implemented strategy to reposition S3 from PC graphics into the leading networked consumer electronics company.

- Acquired Diamond Multimedia and coordinated integration of communications, Rio digital music, and workstation graphics divisions into S3.
- Identified and negotiated acquisitions to grow digital media businesses including Empeg, ReplayTV, and Sensory Science.
- Identified and negotiated strategic investments including Comsilica, Intellon, KBGear Interactive, Entridia, DataPlay and others.
- Developed strategy for integrated graphics/core-logic products and established a joint venture with Via Technologies to design and market these products.
- Negotiated divestiture of graphics chip business to Via and the workstation graphics division to ATI.

Product Planning and Development:

- Drove roadmap development within SONICblue product divisions.
- Managed Business Development for all product lines.
- Led New Product Development and Corporate Vision processes.
- Acting co-General Manager of Rio digital music business in 2nd half of 2001. Responsible for all areas of product development, business development, and cost management.
- Managed development of the Savage/MX and Savage/IX mobile 3D graphics accelerators and Savage/NB system logic products.

Public Relations, Public Policy and Investor Relations:

- Present company products and strategy at industry events such as CES, Comdex, and Microprocessor Forum.
- Discuss new products and initiatives with the press.
- Promote issues of interest to SONICblue to industry groups and in Washington.
- Brief analysts, and investors on company progress. Participate in quarterly conference calls.

IP Management and Licensing:

- Negotiated and managed partnership agreements including a critical cross-licensing agreement with Intel.
- Renegotiated technology-licensing agreements with IBM for workstation graphics products.
- Evaluated outside technology opportunities, managed video research and development, and managed corporate IP strategy with legal staff including patent filings, cross licensing, and litigation.

Consulting Professor, [1999-2002]

Stanford University, Stanford, CA

Teaching computer architecture and microprocessor design.

Assistant Professor [1991 - 1997]

Princeton University, Princeton, NJ

Teaching and research in the Electrical Engineering department. Research in embedded computing systems, multimedia, video signal processors, compiler optimization, and high performance computer architecture. Principal investigator or project manager for ~\$6M in funded research.

Visiting Assistant Professor, [1992]

Carnegie Mellon University, Pittsburgh, PA

Research and preparation of teaching materials on advanced microprocessor designs including new superscalar and superpipelined processor architectures.

Founder and Vice President and Consultant, [1989 - 1995]

The Graphics Technology Company, Inc., Austin, TX

Founded company to develop touch-sensitive components and systems for the first generation of PDA devices and interactive public systems. Obtained financing from Gunze Corp., Osaka, Japan. Company is now part of 3M.

Senior Electrical Engineer, [1989]

ESL - TRW, Advanced Technology Division, Sunnyvale, CA

Designed the architecture for an Intel i860-based multiple-processor digital signal processing system for advanced military applications. Designed several FPGA interface chips for VME-bus systems.

Design Consultant, [1986 -1987]

Carroll Touch Division, AMP Inc., Round Rock, TX

Developed several new technologies for touch-screen systems. Designed the first ASIC produced for AMP, a mixed-signal interface chip for controlling touch-screen sensors. Developed the system electronics, system firmware, and customer utility software for numerous products including those based on the new ASIC.

Senior Design Engineer, [1983 -1985]

Touch Technology Inc., Annapolis, MD

Advisory Boards:

Director, Turtle Beach Corporation (NASDAQ:HEAR) (formerly Parametric Sound Corporation), KBGear Interactive, Inc., Comsilica, Inc., Rioport.com, various S3 subsidiaries.

Technical Advisory Boards, Ageia, Inc., Intellon, Inc., Comsilica, Inc., Entridia, Inc., Siroyan, Ltd., BOPS, Inc., Quester Venture Funds

Carnegie Mellon University Silicon Valley Advisory Board; Johns Hopkins University Tech Transfer Advisory Board

Awards:

Micro Test-of-Time Award (in recognition of one of the ten most influential papers of the first 25 years of the symposium), 2014

Business 2.0 “20 Young Executives You Need to Know”, 2002

Walter C. Johnson Prize for Teaching Excellence, 1997.

Princeton University Engineering Council Excellence in Teaching Award, Spring 1996

AT&T/Lucent Foundation Research Award, 1996.

Walter C. Johnson Prize for Teaching Excellence, 1995

IEEE Certificate of Appreciation, 1995, 2001.

AT&T Foundation Research Award, 1993.

Semiconductor Research Corporation Fellow, 1986 - 1991.

Burroughs Corporation Fellowship in Engineering, 1985 - 1986.

Professional Activities:

Program Chair: Micro-24, 1991, Hot Chips 13, 2001.

General Chair: Micro-26, 1993, Micro-33, 2000.

Associate Editor: IEEE Computer Architecture Letters; ACM Transactions in Embedded Computing Systems

Speaker at CES, WinHec, Comdex, Intel Dev. Forum, Digital Media Summit, Microprocessor Forum, etc.

Keynote speaker at Micro-34, ICME 2002

IEEE B. Ramakrishna Rau Award committee – 2012-2016

IEEE Computer Society Awards Committee – 2015

CES Awards Judge - 2016

Over 50 refereed publications.**Publications since January 2006:**

Wolfe, A., “Retrospective on Code Compression and a Fresh Approach to Embedded Systems”, IEEE MICRO, July/Aug. 2016, Invited paper.

Patents:

- U.S. Pat. 5,041,701 – *Edge Linearization Device for a Contact Input System*, Aug. 20, 1991.
- U.S. Pat. 5,438,168 – *Touch Panel*, Aug. 1, 1995.
- U.S. Pat. 5,736,688 – *Curvilinear Linearization Device for Touch Systems*, Apr. 7, 1998.
- U.S. Pat. 6,037,930 – *Multimodal touch sensitive peripheral device*, March 14, 2000.
- U.S. Pat. 6,408,421 – *High-speed asynchronous decoder circuit for variable-length coded data*, June 18, 2002.
- U.S. Pat. 6,865,668 – *Variable-length, high-speed, asynchronous decoder circuit*, March 8, 2005
- U.S. Pat. 7,079,133 – *Superscalar 3D Graphics Engine*, July 18, 2006
- EP 1 661 131 B1 – *PORTABLE ENTERTAINMENT APPARATUS*, Jan. 21, 2009
- U.S. Pat. 7,555,006 – *Method and system for adaptive transcoding and transrating in a video network*, June 30, 2009
- U.S. Pat. 7,996,595 – *Interrupt Arbitration for Multiprocessors*, Aug. 9, 2011
- EP 2 241 979 B1 – *Interrupt Arbitration for Multiprocessors*, Oct. 10, 2011
- GB201121568D0 – *Mapping Of Computer Threads onto Heterogeneous Resources*, Jan. 25, 2012
- U.S. Pat. 8,131,970 – *Compiler Based Cache Allocation*, March 6, 2012
- U.S. Pat. 8,180,963 – *Hierarchical read-combining local memories*, May 15, 2012
- U.S. Pat. 8,193,941 – *Snoring Treatment*, June 5, 2012
- U.S. Pat. 8,203,541 – *OLED display and sensor*, June 19, 2012
- U.S. Pat. 8,243,045 – *Touch-sensitive display device and method*, August 14, 2012
- U.S. Pat. 8,244,982 – *Allocating processor cores with cache memory associativity*, August 14, 2012
- U.S. Pat. 8,260,996 – *Interrupt Optimization for Multiprocessors*, Sept. 4, 2012
- 101185761 (KR) – *Noise Cancellation for Phone Conversation*, Sept. 19, 2012
- 101200740 (KR) – *OLED display and sensor*, November 7, 2012
- 101200741 (KR) – *Touch-sensitive display device and method*, November 7, 2012
- U.S. Pat. 8,321,614 – *Dynamic scheduling interrupt controller for multiprocessors*, Nov. 27, 2012
- U.S. Pat. 8,352,679 – *Selectively securing data and/or erasing secure data caches responsive to security compromising conditions*, Jan. 8, 2013
- U.S. Pat. 8,355,541 – *Texture Sensing*, Jan. 15, 2013
- U.S. Pat. 8,370,307 – *Cloud Data Backup Storage Manager*, Feb. 5, 2013
- U.S. Pat. 8,398,451 – *Tactile Input Interaction*, March. 19, 2013
- JP 5241032 B2 – *Routing Across Multicore Network Using Real World or Modeled Data*, April 13, 2013
- ZL201010124820.3 – *Interrupt Optimization for Multiprocessors*, April 17, 2013
- U.S. Pat. 8,428,438 – *Apparatus for Viewing Television with Pause Capability*, April 23, 2013
- JP 5266197 B2 – *Data Centers Task Mapping*, May 10, 2013
- U.S. Pat. 8,508,498 – *Direction and Force Sensing Input Device*, August 13, 2013
- U.S. Pat. 8,547,457 – *Camera Flash Mitigation*, October 1, 2013
- U.S. Pat. 8,549,339 – *Processor core communication in multi-core processor*, October 1, 2013
- 101319048 (KR) – *Camera Flash Mitigation*, October 10, 2013
- U.S. Pat. 8,628,478 – *Microphone for remote health sensing*, January 14, 2014
- 101362017 (KR) – *Thread Shift: Allocating Threads to Cores*, Feb. 5, 2014
- 101361928 (KR) – *Cache Prefill on Thread Migration*, Feb. 5, 2014
- 101361945 (KR) – *Mapping Of Computer Threads onto Heterogeneous Resources*, Feb. 5, 2014
- JP 5484580 B2 – *Task Scheduling Based on Financial Impact*, Feb. 28, 2014
- JP 5487306 B2 – *Cache Prefill on Thread Migration*, Feb. 28, 2014
- 101372623 (KR) – *Power Management for Processor*, March. 4, 2014
- 101373925 (KR) – *Allocating Processor Cores with Cache Memory Associativity*, March 6, 2014
- U.S. Pat. 8,676,668 – *Method for the determination of a time, location, and quantity of goods to be made available based on mapped population activity*, March 18, 2014
- U.S. Pat. 8,687,533 – *Energy Reservation in Power Limited Networks*, April 1, 2014
- 101388735 (KR) – *Routing Across Multicore Networks Using Real World or Modeled Data*, April 17, 2014
- JP 5487307 B2 – *Mapping Of Computer Threads onto Heterogeneous Resources*, May. 7, 2014
- U.S. Pat. 8,725,697 – *Cloud Data Backup Storage*, May 13, 2014
- U.S. Pat. 8,726,043 – *Securing Backing Storage Data Passed Through a Network*, May 13, 2014
- ZL201010124826.0 – *Dynamic scheduling interrupt controller for multiprocessors*, May 14, 2014
- JP 5547820 B2 – *Processor core communication in multi-core processor*, May 23, 2014

U.S. Pat. 8,738,949 – *Power Management for Processor*, May 27, 2014
 U.S. Pat. 8,751,854 – *Processor Core Clock Rate Selection*, June 10, 2014
 JP 5559891 B2 – *Thermal Management in Multi-Core Processor*, June 13, 2014
 101414033 (KR) – *Dynamic Computation Allocation*, June 25, 2014
 JP 5571184 B2 – *Dynamic Computation Allocation*, July 4, 2014
 101426341 (KR) – *Processor core communication in multi-core processor*, May 23, 2014
 U.S. Pat. 8,799,671 – *Techniques for Detecting Encrypted Data*, Aug 5, 2014
 101433485 (KR) – *Task Scheduling Based on Financial Impact*, Aug. 18, 2014
 U.S. Pat. 8,824,666 – *Noise Cancellation for Phone Conversation*, Sept. 2, 2014
 U.S. Pat. 8,836,516 – *Snoring Treatment*, Sept. 16, 2014
 U.S. Pat. 8,838,370 – *Traffic flow model to provide traffic flow information*, Sept. 16, 2014
 U.S. Pat. 8,838,797 – *Dynamic Computation Allocation*, Sept. 16, 2014
 U.S. Pat. 8,854,379 – *Routing Across Multicore Networks Using Real World or Modeled Data*, Oct. 7, 2014
 JP 5615361 B2 – *Thread Shift: Allocating Threads to Cores*, Oct. 15, 2014
 U.S. Pat. 8,866,621 – *Sudden infant death prevention clothing*, Oct. 21, 2014
 U.S. Pat. 8,881,157 – *Allocating threads to cores based on threads falling behind threads*, Nov. 4, 2014
 U.S. Pat. 8,882,677 – *Microphone for remote health sensing*, Nov. 11, 2014
 U.S. Pat. 8,924,743 – *Securing Data Cache through Encryption*, December 30, 2014
 U.S. Pat. 8,994,857 – *Camera Flash Mitigation*, March 31, 2015
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 U.S. Pat. 9,208,093 – *Allocation of memory space to individual processor cores*, December 8, 2015
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Testimony by deposition or at trial – September 20, 2012 - -present

Case	Venue	Case Number
ACER, INC., ACER AMERICA CORPORATION and GATEWAY, INC v TECHNOLOGY PROPERTIES LIMITED, PATRIOT SCIENTIFIC CORPORATION, and ALLIACENSE LIMITED	Northern District of California	5:08-cv-00877 IF
TVI v SONY CORPORATION et. al	Northern District of California	5:10-cv-00475-JF/HRL
Walker Digital, LLC v. Ayre Acoustics, Inc. et al	ITC	337 -TA-824
ENOVA TECHNOLOGY CORPORATION v INITIO CORPORATION, INITIO CORPORATION (California), WESTERN DIGITAL CORPORATION, BUFFALO INC., and BUFFALO TECHNOLOGY (USA), INC.	District of Delaware	C.A. 10-040LPS
In the Matter of Certain Consumer Electronics and Display Devices and Products Containing Same (GPH v HTC)	ITC	337-TA-836
In the Matter of Computers and Computer Peripheral Devices and Components Thereof and Products Containing the Same (TPL v Kingston et. al)	ITC	337-TA-841
In the Matter of Certain Electronic Imaging Devices (Flashpoint)	ITC	337-TA-850
Pacing Technologies LLC v. Garmin International and Garmin USA, Inc.	Southern Dist. of California	CV 12-1067 BEN
ProconGPS, Inc. v. Star Sensor, LLC et al.	Northern District of California	3:12-cv-01903-SI
Spireon, Inc. v. CallPass Tech, LLC et al	Northern District of California	3:12-cv-01903-SI
PQ Labs, Inc v Yang Qi, Zaagtech Inc, Jinpeng Li, Haipeng Li.	Northern District of California	12--00450-CW
In the Matter of Certain Consumer Electronics with Display and Processing Capabilities (GPH v Vizio)	ITC	337-TA-884
Florida Atlantic University Research Corporation, et al. v. TPV Technology Limited, et al	S.D. Fla.	09-12-CV-80701 09-12-CV-80694 09-12-CV-80697
Inter Partes Review of: U.S. Patent No.: 8,294,677 and U.S. Patent No.: 8,330,738 (TPK v Wintek)	PTO	IPR2013-00433 IPR2013-00436
Inter Partes Review of: U.S. Patent No.: 8,176,267 (SMI v Phison)	PTO	IPR2013-00473
Immersion Technologies v HTC CORPORATION et al.	District of Delaware	1:12-cv-00259-UNA
Smartflash v. Samsung et al.	E. D. Texas	6:13-CV-448
Black Hills Media LLC v Sonos LLC	C.D. California	2:14-cv-00486
Kangaroo Media, Inc. et al. v. YinzCam, Inc.	District of Western Pennsylvania	2:12-cv-00382-JFC
Inter Partes Review of: U.S. Patent No. 8,176,267 (CATR v Kingston)	PTO	IPR2015-00149
Inter Partes Review of: U.S. Patent No. 6,890,188 (Imation v Kingston)	PTO	IPR2015-00066
INTELLECTUAL VENTURES II LLC v JP MORGAN CHASE & CO., et al.,	Southern District of NY	13 Civ. 3777
Samsung Electronics Co., Ltd. and Samsung Electronics America Inc. vs. NVIDIA Corporation, Old Micro, Inc. f/k/a Velocity Micro, Inc., and Velocity Holdings, LLC	E. D. Virginia	3:14-cv-00757-REP

Certain Touchscreen Controllers and Products Containing Same (Synaptics v Shenzhen Huiding Technology Co., Ltd)	ITC	337-TA-957
Inter Partes Review of: U.S. Patent No. 7,742,053 (LG v ATI) (also 6,897,871 and 7,327,369)	PTO	IPR2015-00325 IPR2015-00326 IPR2015-00330
Ericsson Inc., et al. v TCL Communication Technology Holdings, LTD, et al.	E. D. Texas	2:15-cv-11
Certain Table Saws Incorporating Active Injury Mitigation Technology and Components Thereof (Sawstop v Bosch)	ITC	337-TA-965
INTER PARTES REVIEW OF U.S. PATENT NO. RE43,931 (TCL v Ericsson)	PTO	IPR2015-01602 IPR2015-01637 IPR2015-01641 IPR2015-01646 IPR2015-01674 IPR2015-01676 IPR2015-01761 IPR2015-01806
T-Mobile, USA, Inc. v. Huawei Device USA, Inc. and Huawei Technologies Co., Ltd.	W. D. Washington	14-cv-1351
AVM Technologies, LLC v. Intel Corporation and Related Matters	District of Delaware	15-33-RGA
TCL v. Ericsson, et al.	C.D. California	8:14-cv-341
Sonos Inc. v D&M Holdings Inc. d/b/a the D&M Group; D&M Holdings U.S. Inc. and Denon Electronics (USA) LLC.	District of Delaware	14-1330-RGA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

CERTIFICATE OF SERVICE

The undersigned hereby certifies that copies of the Patentee's Response to the Non-Final Office Action mailed April 20, 2017, the Declaration of Andrew Wolfe submitted therewith, and this Certificate of Service, each of which was filed at the U.S. Patent Office on June 20, 2017, are being served, in their entirety, via Federal Express, upon the following third-party requestor:

Jackson Walker LLP
Attn: Christopher J. Rourk
2323 Ross Avenue, Suite 600
Dallas, TX 75201

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: June 20, 2017

By: /Jeffrey P. Armstrong/
Jeffrey P. Armstrong
Reg. No. 54,967

Electronic Acknowledgement Receipt	
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Application Number:	90013882
International Application Number:	
Confirmation Number:	8704
Title of Invention:	Method and apparatus for controlling multimedia players in a multi-zone system
First Named Inventor/Applicant Name:	7571014
Customer Number:	107361
Filer:	Jeffrey Armstrong
Filer Authorized By:	
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		04-0601-REEXAM_Response.pdf	224811	yes	32
			92876d269f2315aad93e1ddfa0b3486409a80217		

Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Applicant Arguments/Remarks Made in an Amendment			12	32	
Claims			2	11	
Response after non-final action-owner timely			1	1	
Warnings:					
Information:					
2	Affidavit-not covered under specific rule	04-0601- REEXAM_Declaration_and_Exhibit.pdf	415873	no	24
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Warnings:					
Information:					
3	Reexam Certificate of Service	04-0601- REEXAM_Certificate_of_Service.pdf	79050	no	1
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Warnings:					
Information:					
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<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

REMARKS

I. Status of the Claims

Claims 1, 8, 16, 18, 21, 25, and 38 of U.S. Pat. 7,571,014 (“Lambourne ‘014”) are subject to reexamination, of which claims 1, 16, 25, and 38 are independent. Claims 2-7, 9-15, 17, 19, 20, 22-24, 26-37, and 39-44 are not subject to reexamination.

Without conceding the merits of the rejections in the Non-Final Office Action, Patentee has amended claim 1 to correct a typographical error in the originally-issued claim and to generally put the claims in better condition for confirmation. Because the amendment merely corrects a typographical error, the amended claim is substantially identical to the originally-issued claim.

II. Summary of the Non-Final Office Action

The Non-Final Office Action contains three separate grounds of rejection based on various combinations of ten technical references. Ground 1 includes a six-way combination of references, Ground 2 includes an eight-way combination of references, and Ground 3 includes a ten-way combination of references.

In Ground 1, claims 1, 8, 16, 18, 21, 25, and 38 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable over the *six-way combination* of: (i) Universal Plug and Play (“UPnP”) AV Architecture:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP AV”); (ii) Universal Plug and Play (“UPnP”) RenderingControl:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP Rendering Control”); (iii) Universal Plug and Play (“UPnP”) MediaServer:1 for UPnP Ver. 1.0 (June 25, 2002) (“UPnP Media Server”); (iv) Universal Plug and Play (“UPnP”) Device Architecture Ver. 1.0 (June 8, 2000) (“UPnP Architecture”); (v) Universal Plug and Play (“UPnP”) MediaRenderer:1

Device Template Ver. 1.01 (June 25, 2002) (“UPnP Media Renderer”); and (iv) Microsoft Universal Plug and Play (UPnP) Client Support (Aug. 2001) (“MS UPnP”).

In Ground 2, claims 1, 8, 16, 18, 21, 25, and 38 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable over the *eight-way combination* of: (i) U.S. Pub. 2002/0124097 (“Isley”); (ii) UPnP AV; (iii) UPnP Rendering Control; (iv) UPnP Media Server; (v) UPnP Architecture; (vi) UPnP Media Renderer; (vii) MS UPnP; and (viii) Crest Audio, NexSys Ver. 3.0 Software Manual) (“NexSys”).

In Ground 3, claims 1, 8, 16, 18, 21, 25, and 38 stand rejected under 35 U.S.C. § 103 as allegedly unpatentable over the *ten-way combination* of: (i) U.S. Pat. 7,218,708 (“Berezowski”); (ii) U.S. Pub. 2002/0188762 (“Tomassetti”); (iii) Isley; (iv) UPnP AV; (v) UPnP Rendering Control; (vi) UPnP Media Server; (vii) UPnP Architecture; (viii) UPnP Media Renderer; (ix) MS UPnP; and (x) NexSys.

III. Summary of the Claimed Features

The subject matter of Lambourne ‘014 was invented during the development of Sonos’s revolutionary multi-zone home audio system when the inventors recognized “a need for solutions in a multi-zone audio system to control a plurality of audio players and their audio characteristics from one controlling device.” Lambourne ‘014, 2:11-13; Wolfe Dec., ¶¶ 24-25. To address this need, the inventors conceived of an “interactive graphic user interface for controlling playback of the audio source, grouping a plurality of players together, de-grouping a group or adjusting audio volume of individual players or a group of players.” Lambourne ‘014, 2:43-46; Wolfe Dec., ¶ 26.

As discussed further below, the claims of Lambourne ‘014 cover aspects of Sonos’s inventive approach to dynamically grouping and controlling audio players in a multi-zone system. As demonstrated during the Examiner Interview on June 13, 2017 (a summary of which is

submitted on a separate paper), the graphical user interface software that controls Sonos's commercially-available zone player products practices certain aspects of the claims of Lambourne '014, including independent claims 1, 16, 25, and 38.

For example, claim 1 is generally directed to a method of grouping multiple audio players and controlling the volume of the multiple audio players as a group. In operation, a user interface on a controller device displays a first list showing players that are available for grouping. When one of the available players in the first list has been selected as a zone group head, the user interface displays a second list showing players that are eligible for grouping with the selected zone group head. After one or more players in the second list have been selected to join the zone group with the selected zone group head, a zone group is formed and all of the players in the zone group are synchronized so that all the players in the zone group play audio content in synchrony with each other. And after the zone group is formed and the players are synchronized, the method includes adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, where adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user. Lambourne '014, claim 1. Claims 16, 25, and 38 recite similar features.

One advantage of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user,” is that, “not only can each of the zone players be individually controlled, but also two or more of the zone players may be...controlled as if they were a single unit.” Lambourne '014, 4:22-27, 15:1-5. Wolfe Dec., ¶ 26-29. As demonstrated during the

Examiner Interview, adjusting the group volume using a volume meter represented by an averaged value changes the volumes of the individual players by different magnitudes depending on each player's volume level. Wolfe Dec., ¶ 27. Moreover, because the "volume meter [is] represented by an averaged value of audio volumes of the players in the group," adjusting an individual volume meter causes the group volume meter to change to reflect the change in the average volume of the players in the group caused by the change to the individual volume meter. Wolfe Dec., ¶ 28.

The use of an average value to represent group volume provides the user with a beneficial representation of the impact of volume adjustments. The average reflects both adjustments to the group as a whole and adjustments to individual players within the group. A group average representation can be made to appear linear or at least monotonic in response to individual adjustments and thus will seem natural to a user. Moreover, it is easy for a user to understand how to adjust all of the group members, and then to see the impact of individual adjustments on the total volume. Average group adjustments are also valuable when multiple players in a group can be heard from a single location in a user's home or office. Wolfe Dec., ¶ 30.

IV. Summary of the Cited References

As mentioned above, the Non-Final Office Action contains three separate grounds of rejection under § 103 based on various combinations of ten technical references. However, the Office Action cites only a few of the UPnP references and the NexSys reference for teaching the features of (i) "adjusting a volume meter represented by an averaged value of audio volumes of the players in the group" in claims 1 and 25; and (ii) "adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group" in claims 16 and 38. Office Action, pp. 27-32, 89-96, and 158-166 (claim 1); 40-42, 107-

113, and 167-173 (claim 16); 63-65, 131-136, and 175-181 (claim 25); and 73-74, 137-158, and 181-191 (claim 38). But as described in more detail herein, neither the UPnP references nor NexSys teach or suggest the group volume control features recited in the claims.

A. The UPnP References

The UPnP references describe interactions between UPnP Media Sources, UPnP Media Renderers, and UPnP Control Points, where a given UPnP Control Point may control multiple respective individual UPnP Media Sources and/or UPnP Media Renderers. Wolfe Dec., ¶ 31. The UPnP references do not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the reasons that UPnP does not disclose (i) forming a group of Media Renderer devices or (ii) synchronized playback of content by multiple Media Renderer devices. Wolfe Dec., ¶¶ 32-33.

First, and contrary to the assertion in the Request for *Ex Parte* Reexamination and repeated on p. 21 of the Office Action, establishing a connection between a UPnP Media Server and a UPnP Media Renderer does not amount to the claimed feature of “forming a zone group” because a UPnP Media Server is not a “player.” Wolfe Dec., ¶ 34. Indeed, in the example of “establish[ing] a connection between a first device with a UPnP Media server and a Second Device with a UPnP Media Renderer, to create a ‘zone group’” proposed on p. 27 of the Request for *Ex Parte* Reexamination and repeated on p. 21 of the Office Action, the UPnP references describe no mechanism (via a UPnP Control Point or otherwise) for adjusting a volume for the UPnP Media Server and UPnP Media Renderer for at least the reason that the UPnP references do not disclose a UPnP Media Server that has the ability to play audio or a volume control. Wolfe Dec., ¶ 34-39.

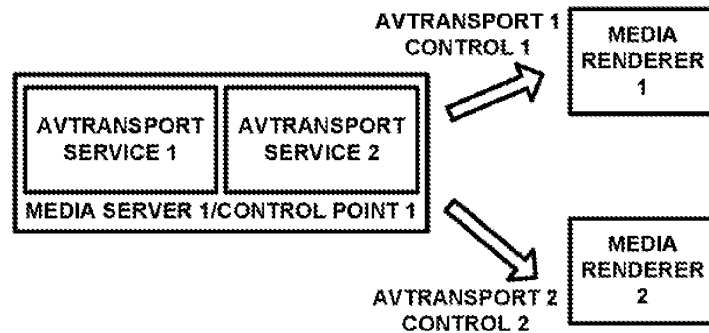
As recited in the claims, the “zone group” includes multiple “players.” A UPnP Media Server is only a “source of the media content.” UPnP AV, p. 5 (emphasis added). Wolfe Dec., ¶ 35. The UPnP references do not teach or suggest a UPnP Media Server component that plays media content or that a UPnP Media Server component has a volume control. Wolfe Dec., ¶ 36. Because the UPnP Media Server does not play content, the UPnP Media Server is not a “player” and thus, a UPnP Media Server and a UPnP Media Renderer do not amount to a “zone group.” Wolfe Dec., ¶ 37.

Second, the UPnP references do not teach or suggest synchronized playback of content by a group of multiple Media Renderer devices. Wolfe Dec., ¶ 40. The UPnP references explain that “[t]he UPnP AV Architecture does not enable...[s]ynchronized playback to multiple rendering devices.” UPnP AV, p. 3 (emphasis added); Wolfe Dec., ¶ 41. The IEEE 1394 Isochronous-push Transfer Protocol (commonly known as FireWire) mentioned on p. 12 of UPnP AV and cited on pp. 26-27 of the Office Action is merely a transmission protocol, which is different than synchronizing playback of content among players. Wolfe Dec., ¶ 42. Synchronous transmission is neither necessary nor sufficient for synchronous playback of content by multiple devices. Wolfe Dec., ¶ 43. In this context, synchronous transmission merely means clocked data communications. Wolfe Dec., ¶ 43.

Because UPnP does not disclose or describe forming a group of Media Renderer devices and synchronizing the playback of content by multiple Media Renderer devices, there is no reason for UPnP to describe or disclose the feature of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group.” Wolfe Dec., ¶ 44. Moreover, there is no evidence in the cited references that a person of skill in the art would have been motivated to “synchronously” adjust the volume of multiple UPnP Media Renderer devices in a

group-wise fashion that are each playing different content, even if the separate UPnP Media Renderer devices receive the content from the same UPnP Media Server. Wolfe Dec., ¶ 45.

Further, the diagram on p. 31 of the Request for *Ex Parte* Reexamination showing a Media Server device sending content to two separate Media Renderer devices (reproduced below) was created by the third-party requestor. Wolfe Dec., ¶ 46. This diagram is misleading and inaccurate. Wolfe Dec., ¶ 47. The diagram does not appear anywhere in the UPnP references, and the functionality that it suggests (as represented in the Request for *Ex Parte* Reexamination) is contrary to the express teachings of the UPnP references. Wolfe Dec., ¶ 47.



Contrary to the assertion in the Request for *Ex Parte* Reexamination repeated in the Office Action, UPnP Rendering Control does not teach or suggest that “separate” devices can receive separate channels, and the channels can be controlled independently or as a whole.” Office Action, p. 28; Request for *Ex Parte* Reexamination, p. 28 (emphasis added). Wolfe Dec., ¶ 48. Instead, at best, the UPnP references disclose a single UPnP Media Renderer device that can play an audio stream having multiple channels (e.g., a right and left channel), and that a UPnP Control Point can individually control the volume of each of the multiple channels (e.g., the “right channel” volume and the “left channel” volume) and the master volume of the single UPnP Media Renderer device. Wolfe Dec., ¶ 49.

Thus, the cited UPnP references do not disclose a volume meter representing a value of audio volume of players in a group whatsoever, let alone a volume meter represented by an averaged value of audio volumes of the players in a group, for at least the reasons that the UPnP references do not disclose (i) forming a zone group of Media Renderer devices or (ii) synchronized playback of content by multiple Media Renderer devices. Wolfe Dec., ¶ 33-49.

B. The NexSys Software Manual

The NexSys software manual describes a user interface for controlling amplifiers.¹ NexSys, p. 2.1; Wolfe Dec., ¶ 54. The NexSys software manual does not teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” for at least the reason that the volume control in NexSys is not “an averaged value of audio volumes of the players in the group.” Wolfe Dec., ¶ 55.

Instead, the group fader in NexSys represents “a relative level to the amplifiers in the group,” where “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount,” NexSys, p. 9.3, rather than “a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or a “volume meter[]...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Wolfe Dec., ¶ 56.

Also, the group fader in NexSys does not represent “an averaged value of audio volumes of the players in the group” because a change to an individual amplifier’s level does not result in

¹ A NexSys-controlled amplifier like the ones described in the NexSys software manual does not amount to a “player” under the *Markman* Order issued by the District Court on January 12, 2017, in the related *Sonos, Inc. v. D&M Holdings et al.*, (D. Del., C.A. No. 14-1330-RGA) litigation. Additionally, the NexSys reference does not teach or suggest “synchronizing all the players in the zone group.”

a change to the group fader level. Wolfe Dec., ¶ 65. NexSys has a “control hierarchy” where adjusting the level of the group fader changes the levels of each amplifier in the group, but changing an individual amplifier’s level does not result in a change to the level of the group fader. NexSys, pp. 9.4-9.5 (arrows in the “Control Hierarchy Diagram” show one-way control from higher levels in the hierarchy to lower levels in the hierarchy); Wolfe Dec., ¶ 66-67. Indeed, NexSys explains that “[g]roup and plan level settings are not saved. They are simply relative controls.” NexSys, p. 9.3. Thus, rather than representing “an averaged value of audio volumes of the players in the group,” the level of the group fader in NexSys is simply a “relative level” that is not based on the “value of audio volumes of the players in the group,” averaged or otherwise. Wolfe Dec., ¶ 55-69.

V. Response to the 35 U.S.C. § 103(a) Rejections

Patentee requests that the Office withdraw the § 103 rejections based on UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, NexSys, Berezowski, and Tomassetti (the “cited references”) for at least the reason that the cited references, individually or in combination, fail to teach or suggest all the claim limitations. At a minimum, the cited references fail to teach or suggest at least: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25; and (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38. Patentee does not concede the merits of any assertion in the Office Action not specifically addressed herein.

A. Response to the § 103 Rejections in Ground 1

Claims 1, 8, 16, 18, 21, 25, and 38 are patentable over the six-way combination of references in Ground 1 for at least the reason that UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, and MS UPnP, individually or in combination, fail to teach or suggest: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25 and (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

i. UPnP Architecture, UPnP Media Renderer, and MS UPnP fail to teach or suggest the group volume control features

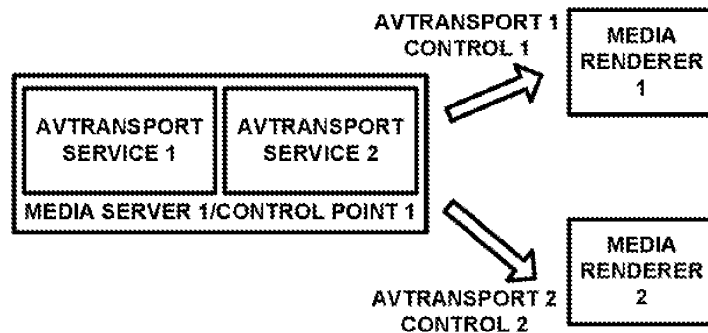
The Office Action does not cite any of UPnP Architecture, UPnP Media Renderer, or MS UPnP for teaching “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Office Action, pp. 27-29. Patentee’s review of UPnP Architecture, UPnP Media Renderer, and MS UPnP likewise found no teaching or suggestion of the group volume control features recited in claims 1, 16, 25, and 38.

ii. The addition of UPnP Rendering Control does not overcome the deficiencies of UPnP Architecture, UPnP Media Renderer, and MS UPnP

The cited passages of UPnP Rendering Control describe the “A_ARG_TYPE_Channel” variable that “is used to identify a particular channel of an audio output stream.” Office Action, p. 28 (quoting UPnP Rendering Control, p. 16). UPnP Rendering control explains that “[a] channel cluster is the collection of all channels, including the Master channel, within an audio stream,”

that “[a] two-channel (stereo) cluster has three channels – the Master channel, the Left Front channel, and the Right Front channel,” and that “[t]he Rendering Control server allows Control Points to control each of these channels independently or as a whole.” Office Action, p. 28 (quoting UPnP Rendering Control, p. 41).

But contrary to the assertion on p. 28 of the Request for *Ex Parte* Reexamination, which was repeated on p. 28 of the Office Action, the cited portions of UPnP Rendering Control do not teach or suggest that “separate” devices can receive separate channels, and the channels can be controlled independently or as a whole.” (emphasis added); Wolfe Dec., ¶ 48. The diagram on p. 31 of the Request for *Ex Parte* Reexamination (reproduced below) on which the third-party requestor’s assertion is based shows a Media Server device sending content to two separate Media Renderer devices.



As mentioned above, the third-party requestor created this diagram; it is misleading and inaccurate. Wolfe Dec., ¶ 46-47. The diagram does not appear anywhere in the UPnP references, and the functionality that it suggests (as presented in the Request for *Ex Parte* Reexamination) is contrary to the express teachings of the UPnP references. Wolfe Dec., ¶ 47.

Instead, at best, UPnP Rendering Control discloses a single UPnP Media Renderer device that can play an audio stream having multiple channels (e.g., a right and left channel), and that a UPnP Control Point can individually control the volume of each of the multiple channels (e.g.,

the “right channel” volume and the “left channel” volume) and the master volume of the single UPnP Media Renderer device. UPnP Rendering Control, p. 6; Wolfe Dec., ¶ 49. In particular, UPnP Rendering Control states, “[t]he Rendering Control Service exposes a set of state variables that can be used to control the audio output of a device” -- not multiple devices. UPnP Rendering Control, pp. 6, 41 (emphasis added). Wolfe Dec., ¶ 50.

Neither UPnP Media Renderer nor the other UPnP references teach or suggest a scenario with a first UPnP Media Renderer device playing a right channel, a second UPnP Media Renderer device playing a left channel, and a UPnP Control Point that adjusts a “master volume” that controls the volume on both the first and second UPnP Media Renderer devices as suggested in the third-party requestor’s misleading and inaccurate diagram on p. 31 the Request for *Ex Parte* Reexamination, which is repeated on p. 34 of the Office Action. Wolfe Dec., ¶ 51. Nothing in the UPnP references describes jointly controlling the volume of multiple playback devices. Wolfe Dec., ¶ 51.

iii. The addition of UPnP Media Server does not overcome the deficiencies of UPnP Architecture, UPnP Media Renderer, MS UPnP, and UPnP Rendering Control

The Office Action cites a passage from the UPnP Media Server reference that describes “MediaServer devices [that] are used in conjunction with one or more MediaRenderer devices(s) to allow a Control Point to discover entertainment (AV) content (e.g., video, music, images, etc.) on the MediaServer and to render that content on any appropriate MediaRenderer within the home network.” Office Action, p. 29 (quoting UPnP Media Server, p. 7) (emphasis added).

But using a UPnP Control Point to discover content on UPnP Media Server devices for playback on UPnP Media Renderer devices does not amount to “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1

and 25 or “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Wolfe Dec., ¶ 52.

iv. The addition of UPnP AV does not overcome the deficiencies of UPnP Architecture, UPnP Media Renderer, MS UPnP, UPnP Rendering Control, and UPnP Media Server

The Office Action cites a passage from UPnP AV stating that “multiple (virtual) instances of the AVTransport service allow the MediaServer to support multiple Renderers at the same time.” Office Action, p. 29 (quoting UPnP AV, p. 7) (emphasis added). But while a Media Server device may transmit different content to multiple Renderer devices at the same time, UPnP AV never describes a Media Server device controlling the volume of any Media Renderer device. UPnP AV, p. 6 (“the Media Server and Media Renderer do not control each other via UPnP actions.”). Wolfe Dec., ¶ 53. As described in the UPnP references, only a Control Point can control a Media Renderer device’s volume via a UPnP action. UPnP AV, p. 6 (“the Control Point is also able to control the various rendering characteristics of the Renderer device such as... Volume...”). Wolfe Dec., ¶ 53.

Nevertheless, nothing in the cited passage of UPnP AV teaches or suggests a Control Point (or any other device) performing the specific features of “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38.

Indeed, “[t]he UPnP AV Architecture does not enable...[s]ynchronized playback to multiple rendering devices,” UPnP AV, p. 3 (emphasis added), so there is no reason for a UPnP Control Point to implement the group volume control features recited in the claims. Wolfe Dec.,

¶ 33, 44. Moreover, there is no evidence in the cited references that a person of skill in the art would have been motivated to “synchronously” adjust the volume of a group of UPnP Media Renderer devices that are each playing different content, even when the separate UPnP Media Renderer devices receive the content from the same UPnP Media Server. Wolfe Dec., ¶ 45.

B. Response to the § 103 Rejections in Ground 2

Claims 1, 8, 16, 18, 21, 25, and 38 are patentable over the eight-way combination of references in Ground 2 for at least the reason that Isley, UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and NexSys fail to teach or suggest: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25; and (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

i. UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and Isley fail to teach or suggest the group volume control features

The combination of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, and MS UPnP fails to teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38, for at least the reasons described above.

Additionally, the Office Action does not cite Isley for teaching “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1

and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Office Action, pp. 89-96, 107-112, 131-135, and 137-157. And Patentee’s review of Isley likewise found no teaching or suggestion of the group volume control features recited in claims 1, 16, 24, and 38.

ii. The addition of NexSys does not overcome the deficiencies of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and Isley

The addition of NexSys does not overcome the deficiencies of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, and Isley for at least the reasons that (i) NexSys also fails to teach or suggest all the elements recited in the claims and (ii) modifying the NexSys controller to perform the volume control functions recited in the claims would change the principle of operation of the NexSys controller.

a. NexSys does not teach or suggest an average volume controller

The NexSys software manual describes a user interface for controlling amplifiers.² NexSys, pp. 7.4, 9.3; Wolfe Dec., ¶ 54. However, to the extent the Office contends the group of amplifiers in NexSys amounts to a “zone group” or a “group of players” as recited in the claims, the group fader in the examples shown on pp. 7.4 and 9.3 is “a relative level to the amplifiers in the group,” where “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount,” NexSys, p. 9.3, rather than “a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1

² A NexSys-controlled amplifier does not amount to a “player” under the *Markman* Order issued on January 12, 2017, in *Sonos v. D&M Holdings et al.*, (D. Del., C.A. No. 14-1330-RGA). Also, NexSys does not teach or suggest “synchronizing all the players in the zone group.”

and 25 or a “volume meter[.]...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Wolfe Dec., ¶ 55-56.

The example on p. 7.4 of NexSys shows attenuation levels for amplifiers rather than volume levels for “players” as recited in the claims. Wolfe Dec., ¶ 57. The attenuation of the “Right Highs” amplifier is set to -20dB, the attenuation level of the “Right Lows” amplifier is set to -20dB, and the attenuation of the “Right Subs” amplifier is set to -20dB. Thus, the average value of the attenuation levels for the “Right Highs,” “Right Lows,” and “Right Subs” amplifier channels is about -20dB, but the attenuation level of the “Group” control appears to be about 0dB. NexSys, p. 7.4; Wolfe Dec., ¶ 58. Accordingly, the group fader controller shown on p. 7.4 of NexSys is not an averaged value of attenuation levels of the amplifiers in the group, much less “an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38. Wolfe Dec., ¶ 59.

The example on p. 9.3 of NexSys functions in the same manner as the example on p. 7.4 of NexSys. Wolfe Dec., ¶ 60. The example on p. 9.3 of NexSys shows a “Stage Right” fader that controls attenuation levels for a set of amplifier channels, where the “fader ranges from +83dB to -83dB” and is “a relative level to the amplifiers in its group.” NexSys, p. 9.3; Wolfe Dec., ¶ 61. NexSys explains that “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount.” NexSys, p. 9.3. “For instance, if the amp is set to -10, and the group level is raised +5, the amp level will increase by 5dB to a level of -5.” NexSys, p. 9.3. Wolfe Dec., ¶ 62. Thus, like the example on p. 7.4, the “Stage Right” fader on p. 9.3 is also not “an averaged value of audio volumes of the players in the group” as in claims 1, 16, 25, and 38. Wolfe Dec., ¶ 63.

The Office Action cites the third-party requestor's contention that "NexSys discloses a group volume control with a master volume control and independent channels, which represents an averaged value of audio volumes at least at startup, when all volumes are set to zero and any increase in the master volume would result in a synchronous increase in the average at all remote locations, as shown in the exemplary diagram...from page 7.4 of NexSys." Office Action, p. 94 (quoting Request for *Ex Parte* Reexamination, Appendix B, pp. 14-16). However, the NexSys disclosure does not support the hypothetical scenario proposed by the third-party requestor. Wolfe Dec., ¶ 64. NexSys explains that "[e]ach amplifier channel's attenuator operates within a range from no attenuation (0dB) to full attenuation (-83dB)." NexSys, p. 9.1. Wolfe Dec., ¶ 64. Thus, a person of ordinary skill in the art would understand that an individual amplifier's attenuation level in the NexSys system would be set to -83dB (minimum volume) at initial startup rather than "zero" (maximum volume) as in the third-party requestor's proposed hypothetical scenario. See, e.g., NexSys, p. 9.4 (figure showing all amplifiers at -83); p. 9.5 (showing "Group" volume control set to 0 and each amplifier's volume control set to -83). Wolfe Dec., ¶ 64.

Furthermore, the group fader in NexSys also does not represent "an averaged value of audio volumes of the players in the group" because a change to an individual amplifier's level does not result in a change to the group fader level. Wolfe Dec., ¶ 65. NexSys describes a "control hierarchy" where adjusting the level of the group fader changes the levels of each amplifier in the group, but changing an individual amplifier's level does not result in a change to the level of the group fader. NexSys, pp. 9.4-9.5. Wolfe Dec., ¶ 66. Arrows in the "Control Hierarchy Diagram" show one-way control from higher levels in the hierarchy to lower levels in the hierarchy. NexSys, pp. 9.4-9.5. Wolfe Dec., ¶ 67. Thus, the group fader in NexSys does not

represent “an averaged value of audio volumes of the players in the group” for at least this additional reason.

b. Modifying NexSys for average volume control would change the principle of operation of the NexSys system

Furthermore, modifying the NexSys controller to perform the functions of (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” or (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” would change the principle of operation of the NexSys system. MPEP 2143.01(VI) (“If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious.”).

As explained above, the group level in NexSys is “a relative level to the amplifiers in the group,” where “[p]ositive changes here will have the same magnitude increase for every amplifier channel in the group” and “[a] negative change here will decrease each amplifier channel level in the group by the same amount,” NexSys, p. 9.3, rather than “a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 or a “volume meter[...]for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38. Wolfe Dec., ¶ 56.

Modifying the group fader in NexSys to represent “an averaged value of audio volumes of the players in the group” would result in a control scheme where positive and negative changes to the group fader level in NexSys would cause different magnitude increases and decreases for the amplifier channels controlled by the group fader. Wolfe Dec., ¶ 68. In a system like NexSys where a sound engineer has set amplifier levels relative to each other, an average control scheme that does not maintain the relative levels between the amplifiers in the

group would undesirably change the balance that the audio engineer has set among the different amplifier channels (e.g., “Right Highs,” “Right Lows”, and “Right Subs,” shown on p. 7.4 of NexSys) when changing the overall attenuation level of the group of amplifier channels via the group fader. Wolfe Dec., ¶ 69.

Because modifying the controller in NexSys to perform the functions of (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” or (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” would change the principle of operation of the NexSys system, the teachings of NexSys are not sufficient to render claims 1, 8, 16, 18, 21, 25, and 38 obvious. MPEP 2143.01(VI).

C. Response to the § 103 Rejections in Ground 3

Claims 1, 8, 16, 18, 21, 25, and 38 are patentable over the ten-way combination of references in Ground 3 for at least the reason that Isley, UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, NexSys, Berezowski, and Tomassetti, individually or in combination, fail to teach or suggest: (i) “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group,” in combination with the other elements of claims 1 and 25; and (ii) “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” in combination with the other elements of claims 16 and 38.

i. UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, and NexSys fail to teach or suggest the group volume control features

The combination of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, and NexSys fails to teach or suggest

“adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38, for at least the reasons described above.

ii. The addition of Berezowski and Tomasseti does not overcome the deficiencies of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, and NexSys

The addition of Berezowski and Tomasseti fails to overcome the deficiencies of UPnP AV, UPnP Rendering Control, UPnP Media Server, UPnP Architecture, UPnP Media Renderer, MS UPnP, Isley, and NexSys for at least the reason that Berezowski and Tomasseti also fail to teach or suggest “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group” as in claims 1 and 25 and “adjusting one of the volume meters...for the group of players, represented by an averaged value of audio volumes of the players in the group” as in claims 16 and 38.

Indeed, the Office Action does not cite Berezowski or Tomasseti for teaching or suggesting the group volume control features, Office Action, pp. 158-166, 167-173, 175-181, and 181-191, and Patentee’s review of Berezowski and Tomasseti found no teaching or suggestion of the group volume control features recited in claims 1, 16, 25, and 38.

VI. Conclusions

In view of the foregoing, and without conceding the merits of any of the assertions in the Request for *Ex Parte* Reexamination or Office Action not explicitly addressed herein, Patentee respectfully submits that the claims are in condition for confirmation, and Patentee respectfully requests that the Office issue a reexamination certificate confirming the patentability of all the

claims. If further dialog would advance prosecution, the Office is invited to telephone the undersigned at 312-913-0001.

Respectfully submitted,
McDonnell Boehnen Hulbert & Berghoff LLP

Date: June 20, 2017

By: /Jeffrey P. Armstrong/
Jeffrey P. Armstrong
Reg. No. 54,967

CLAIMS

1. (Currently Amended) A method for controlling a plurality of players, the method comprising:

displaying on a screen a first list showing at least available players;

displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head;

forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group; and

synchronizing all players in the zone group;

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of [slayers] players synchronously in accordance with an adjustment made by a user.

2. (Original) The method of claim 1, wherein the first list becomes scrollable, when the available players do not fit in the screen.

3. (Original) The method of claim 1, wherein said synchronizing all players in the zone group comprises:

determining an audio source for the zone group;

making the audio source available to each of the players in the zone group; and

playing the audio source synchronously in all players in the zone group.

4. (Original) The method of claim 3, wherein said determining an audio source for the zone comprises selecting the audio source being played or ready to be played by the zone group head.

5. (Original) The method of claim 3, wherein said of determining an audio source for the zone comprises selecting the audio source being played or ready to be played by one of the players in the zone group.

6. (Original) The method of claim 3, wherein said making of the audio source available comprises:

determining whether the audio source is available locally; and

retrieving the audio source from a device on a network, if the audio source is not available locally.

7. (Original) The method of claim 6, wherein said making of the audio source available comprises:

determining the audio source from one of the players in the zone group; and

causing the audio source available to every other player in the zone group.

8. (Original) The method of claim 1, wherein said synchronizing of all players in the zone group comprises:

causing all players in the zone group to play an identical audio source; and

presenting the zone group in a manner that indicates a grouping.

9. (Original) The method of claim 8, wherein the manner includes one or more of highlighting, colors, explicit texts and graphs.

10. (Original) The method of claim 1, wherein the first list further shows at least one zone group.

11. (Original) The method of claim 10, wherein the zone group includes at least two players.

12. (Original) The method of claim 9, wherein a configuration of the zone group is stored in at least one of the players or a controller for remotely controlling one or more of the players, the configuration including information on how the two players are grouped.

13. (Original) The method of claim 8, further including:
selecting the zone group to be de-grouped from the first list;
displaying on the screen another list showing all the players within the zone group to be de-grouped;
selecting one or more players from the another list; and
disassociating the selected players from the zone group.

14. (Original) The method of claim 13, wherein said disassociating the selected players comprises making the selected players available for grouping with a zone group.

15. (Original) The method of claim 13, wherein the another list becomes scrollable, when all the players within the zone group to be de-grouped do not fit in the screen.

16. (Original) A method for controlling a plurality of players, the method comprising:

displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, when there is such a group; and

adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the players in the group, and said adjusting of the one of the volume meters includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

17. (Original) The method of claim 16, wherein said adjusting the one of the volume meters includes:

causing the audio volume to be adjusted in accordance with an adjustment to the volume meter; or

causing the audio volume to be off, when a mute button is activated while the audio volume is on; and

causing the audio volume to be on, when a mute button is activated while the audio volume is off.

18. (Original) The method of claim 16, further comprising adjusting the one of the volume meters for the group of players in a predetermined manner that appears that the group of players are being adjusted at the same time.

19. (Original) The method of claim 16, further comprising maintaining relative volume loudness difference among each of the players in the group.

20. (Original) The method of claim 16, further comprising playing an identical audio source in the group of players.

21. (Original) The method of claim 20, wherein the audio source is retrieved in form of audio data packets over the network.

22. (Original) The method of claim 21, wherein at least part of the audio source is retrieved or being streamed from one of the players.

23. (Original) The method of claim 16, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing an equal change to a volume of each of the players in the group.

24. (Original) The method of claim 16, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing a predetermined unit change in volume for every action by a user.

25. (Original) An apparatus for controlling a plurality of players, the apparatus comprising:

- a screen;
- a screen driver commanding the screen;
- an input interface;
- a network interface;
- a memory for storing code for an application module;

a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:

displaying on a screen a first list showing at least available players;

displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group, wherein any one of the players in the group serves as a zone group head;

synchronizing all players in the zone group in accordance with the zone group head; and

adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

26. (Original) The apparatus of claim 25, wherein the first list becomes scrollable, when the available players do not fit in the screen.

27. (Original) The apparatus of claim 25, wherein said synchronizing all players in the zone group comprises:

determining an audio source for the zone group;

making the audio source available to each of the players in the zone group; and

playing the audio source synchronously in all players in the zone group.

28. (Original) The apparatus of claim 27, wherein said determining an audio source for the zone comprises selecting the audio source being played or ready to be played by the zone group head.

29. (Original) The apparatus of claim 27, wherein said determining an audio source for the zone comprises selecting the audio source being played or ready to be played by one of the players in the zone group.

30. (Original) The apparatus of claim 27, wherein said making the audio source available comprises:

determining whether the audio source is available locally; and

retrieving the audio source from a device on a network, if the audio source is not available locally.

31. (Original) The apparatus of claim 27, wherein said making the audio source available comprises:

determining the audio source from one of the players in the zone group; and

causing the audio source available to every other player in the zone group.

32. (Original) The apparatus of claim 25, wherein said synchronizing all players in the zone group comprises:

causing all players in the zone group to play an identical audio source; and

presenting the zone group in a manner that indicates a grouping.

33. (Original) The apparatus of claim 32, wherein the manner includes one or more of highlighting, colors, explicit texts and graphs in the screen.

34. (Original) The apparatus of claim 25, wherein the first list further shows at least one zone group.

35. (Original) The apparatus of claim 25, wherein the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:

selecting the zone group to be de-grouped from the first list;

displaying on the screen an another list showing all the players within the zone group to be de-grouped;

selecting one or more players from the another list; and

disassociating the selected players from the zone group.

36. (Original) The apparatus of claim 35, wherein said disassociating the selected players comprises making the selected players available for grouping with a zone group.

37. (Original) The apparatus of claim 35, wherein the another list becomes scrollable, when all the players within the zone group to be de-grouped do not fit in the screen.

38. (Original) An apparatus for manipulating a plurality of players, the apparatus comprising:

a screen;

a screen driver commanding the screen;

an input interface;

a network interface;

a memory for storing code for an application module;

a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:

displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such a group; and

adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the players in the group, and said adjusting of the one of the volume meters includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

39. (Original) The apparatus of claim 38, wherein said adjusting the one of the volume meters includes:

causing the audio volume to be adjusted in accordance with an adjustment to the volume meter; or

causing the audio volume to be off, when a mute button is activated while the audio volume is on; and

causing the audio volume to be on, when a mute button is activated while the audio volume is off.

40. (Original) The apparatus of claim 38, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes:

changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.

41. (Original) The apparatus of claim 38, wherein the processor executing the code in the memory causes the application module and the screen driver to perform operations of adjusting the one of the volume meters for the group of players in a predetermined manner that appears that the group of players are being adjusted at the same time.

42. (Original) The apparatus of claim 38, wherein the processor executing the code in the memory causes the application module and the screen driver to perform operations of maintaining relative volume loudness difference among each of the players in the group.

43. (Original) The apparatus of claim 38, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing an equal change to a volume of each of the players in the group.

44. (Original) The apparatus of claim 38, wherein the one of the volume meters from the list selected is for the group of players, and wherein said adjusting the one of the volume meters includes causing a predetermined unit change in volume for every action by a user.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Case No.: 04-0601-REEXAM)

(MBHB No. 15-536-REX)

In the <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Pat. 7,571,014	)	Art Unit: 3992
	)	
Serial No.: 90/013,882	)	Examiner: Mary J. Steelman
	)	
Filed: December 27, 2016	)	Confirmation No. 8704
	)	
For: Method and apparatus for controlling	)	
multimedia players in a multi-zone	)	
system	)	

U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

**RESPONSE TO THE NON-FINAL OFFICE ACTION
MAILED APRIL 20, 2017**

Please consider the following Amendments and Remarks submitted in response to the Non-Final Office Action mailed on April 20, 2017, in the above-captioned reexamination.

AMENDMENTS TO THE CLAIMS begin on page 2.

REMARKS begin on page 12.

Patentee authorizes the Office to charge any underpayment or credit any overpayment of fees in connection with the above-captioned reexamination to Deposit Account 13-2490.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		90013882
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	First Named Inventor		
	Art Unit		3992
	Examiner Name		STEELMAN, Mary J.
	Attorney Docket Number		04-0601-REEXAM

1	'884+ Automatic Matrix Mixer Control System," Ivie Technologies, Inc., 2000, pp. 1-4
2	Advanced Driver Tab User Interface WaveLan GUI Guide, AVAGO0009, Agere Systems, February 2004, 4 pages.
3	Advisory Action mailed 02 February 2016, issued in connection with U.S. Patent Application No. 13/848921, filed on 22 March 2013, 8 pages
4	Advisory Action mailed 18 September 2008, issued in connection with U.S. Patent Application No. 10/816217, filed on 01 April 2004, 8 pages
5	Advisory Action mailed on 01 February 2016, issued in connection with U.S. Patent Application No. 13/864247, filed on 17 April 2013, 6 pages
6	Advisory Action mailed on 01 June 2015, issued in connection with U.S. Patent Application No. 14/516867, filed on 17 October 2014, 11 pages
7	Advisory Action mailed on 02 March 2015, issued in connection with U.S. Patent Application No. 13/848932, filed on 22 March 2013, 3 pages.
8	Advisory Action mailed on 05 January 2012, issued in connection with U.S. Patent Application No. 12/035112, filed on 21 February 2008, 3 pages.
9	Advisory Action mailed on 05 September 2014, issued in connection with U.S. Patent Application No. 13/907666, filed on 31 May 2013, 3 pages
10	Advisory Action mailed on 08 January 2015, issued in connection with U.S. Patent Application No. 13/705176, filed on 05 December 2012, 4 pages
11	Advisory Action mailed on 09 June 2016, issued in connection with U.S. Patent Application No. 13/871795, filed on 25 April 2013, 14 pages

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
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	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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16	Advisory Action mailed on 25 March 2015, issued in connection with U.S. Patent Application No. 13/533105, filed on 26 June 2012, 5 pages.
17	Advisory Action mailed on 26 February 2015, issued in connection with U.S. Patent Application No. 14/184528, filed on 19 February 2014, 3 pages.
18	Advisory Action mailed on 26 November 2014, issued in connection with U.S. Patent Application No. 14/186850, filed on 21 February 2014, 9 pages
19	Advisory Action mailed on 28 December 2016, issued in connection with U.S. Patent Application No. 13/705176, filed on 05 December 2012, 4 pages
20	Advisory Action mailed on 28 July 2015, issued in connection with U.S. Patent Application No. 14/184522, filed on 19 February 2014, 7 pages
21	Advisory Action mailed on 28 September 2009, issued in connection with U.S. Patent Application No. 10/816217, filed on 01 April 2004, 4 pages
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	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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	Art Unit		3992
	Examiner Name		STEELMAN, Mary J.
	Attorney Docket Number		04-0601-REEXAM

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Application Number:	90013882
International Application Number:	
Confirmation Number:	8704
Title of Invention:	Method and apparatus for controlling multimedia players in a multi-zone system
First Named Inventor/Applicant Name:	7571014
Customer Number:	107361
Filer:	John Gerrard Tolomei/Neilesh Patel
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Attorney Docket Number:	04-0601-REEXAM (15-536)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

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	Examiner Name		STEELMAN, Mary J.
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1	ROTHERMEL et al., "An Adaptive Stream Synchronization Protocol," 5th International Workshop on Network and Operating System Support for Digital Audio and Video, April 18-21, 1995, 12 pages	
2	ROTHERMEL et al., "Clock Hierarchies- An Abstraction for Grouping and Controlling Media Streams," University of Stuttgart Institute of Parallel and Distributed High-Performance Systems, January 1996, 23 pages	
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11	Sonos, Inc. v D&M Holdings, D&M Supp Opposition Brief including Exhibits, 17 March 2017, 23 pages	

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	12	Sonos, Inc. v. D&M Holdings, Expert Report of Jay P. Kesan including Appendices A-P, Feb. 20, 2017, 776 pages.	
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	18	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 226, Opinion Denying Inequitable Conduct Defenses, Feb. 6, 2017, updated, 5 pages.	
	19	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 242, US District Judge Andrews 101 Opinion, Mar. 13, 2017, 16 pages.	
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	22	Sonos, Inc. v. D&M Holdings Inc. et al., Complaint for Patent Infringement, filed October 21, 2014, 20 pages.	

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23	Sonos, Inc. v. D&M Holdings Inc. et al., Declaration of Steven C. Visser, executed September 9, 2016, 40 pages.
24	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 1: Defendants' Invalidity Contentions for U.S. Patent No. 7,571,014 filed September 16, 2016, 270 pages.
25	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 10: Defendants' Invalidity Contentions for U.S. Patent No. 9,219,959 filed September 27, 2016, 236 pages.
26	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 11: Defendants' Invalidity Contentions for U.S. Design Patent No. D559,197 filed September 27, 2016, 52 pages.
27	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 2: Defendants' Invalidity Contentions for U.S. Patent No. 8,588,949 filed September 27, 2016, 224 pages.
28	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 3: Defendants' Invalidity Contentions for U.S. Patent No. 8,843,224 filed September 27, 2016, 147 pages.
29	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 4: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,312 filed September 27, 2016, 229 pages.
30	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 5: Defendants' Invalidity Contentions for U.S. Patent No. 8,938,637 filed September 27, 2016, 213 pages.
31	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 6: Defendants' Invalidity Contentions for U.S. Patent No. 9,042,556 filed September 27, 2016, 162 pages.
32	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,195,258 filed September 27, 2016, 418 pages.
33	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions Exhibit 8: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed September 27, 2016, 331 pages.

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35	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Amended Invalidity Contentions, filed September 14, 2016, 100 pages.
36	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 1: Defendants' Invalidity Contentions for U.S. Patent No. 7,571,014 filed April 15, 2016, 161 pages.
37	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 10: Defendants' Invalidity Contentions for U.S. Patent No. 9,213,357 filed April 15, 2016, 244 pages.
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39	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 12: Defendants' Invalidity Contentions for U.S. Design Patent No. D559,197 filed April 15, 2016, 36 pages.
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44	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 6: Defendants' Invalidity Contentions for U.S. Patent No. 9,042,556 filed April 15, 2016, 86 pages.

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45	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 7: Defendants' Invalidity Contentions for U.S. Patent No. 9,130,771 filed April 15, 2016, 203 pages.
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47	Sonos, Inc. v. D&M Holdings Inc. et al., Defendant's Initial Invalidity Contentions Exhibit 9: Defendants' Invalidity Contentions for U.S. Patent No. 9,202,509 filed April 15, 2016, 163 pages.
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1	Sonos, Inc. v. D&M Holdings Inc. et al., Defendants' Amended Answer, Defenses, and Counterclaims for Patent Infringement, filed November 30, 2015, 47 pages
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11	Sonos, Inc. v. D&M Holdings Inc. et al., Joint Claim Construction Chart, Volume 1 of 3 with Exhibits A-O, filed August 17, 2016, 30 pages

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24	Sonos, Inc. v. D&M Holdings (No. 14-1330-RGA), DI 214, D&M Post-Markman Letter (Dec. 22, 2016) (13 pages)
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29	Sony: AIR-SA 50R Wireless Speaker, Copyright 2009, 2 pages
30	Sony: Altus Quick Setup Guide ALT-SA32PC, Copyright 2009, 2 pages
31	Sony: BD/DVD Home Theatre System Operating Instructions for BDV-E300, E301 and E801, Copyright 2009, 115 pages
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35	Sony: DVD Home Theatre System Operating Instructions for DAV-DZ870W, Copyright 2008, 128 pages
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38	Sony: HT-IS100, 5.1 Channel Audio System, last updated November 2009, 2 pages
39	Sony: Multi Channel AV Receiver Operating Instructions, 2007, 80 pages.
40	Sony: Multi Channel AV Receiver Operating Instructions for STR-DN1000, Copyright 2009, 136 pages
41	Sony: STR-DN1000, Audio Video Receiver, last updated August 2009, 2 pages
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45	Understanding Universal Plug and Play, Microsoft White Paper (June 2000) (D+M_0402074-118) (45 pages)
46	UNITED STATES PATENT AND TRADEMARK OFFICE, U.S. Provisional Application No. 60/490,768 filed on 28 July 2003, entitled "Method for synchronizing audio playback between multiple networked devices," 13 pages.
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48	Universal Plug and Play Device Architecture V. 1.0, (June 8, 2000) (54 pages)
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50	Universal Plug and Play ("UPnP") AV Architecture:1 For UPnP, Version 1.0, (June 25, 2002) (D+M_0298151-72) (22 pages)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	90013882
	Filing Date	2016-12-27
	First Named Inventor	
	Art Unit	3992
	Examiner Name	STEELMAN, Mary J.
	Attorney Docket Number	04-0601-REEXAM

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Neilesh R. Patel/	Date (YYYY-MM-DD)	2017-05-01
Name/Print	Neilesh R. Patel	Registration Number	50918

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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1	ZX135: Installation Manual, LA Audio, April 2003, 44 pages
2	"ZR-8630AV MultiZone Audio/Video Receiver, Installation and Operation Guide," Niles Audio Corporation, 2003, 86 pages

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	1	2014149533	WO	A2	2014-09-25	BOSE CORPORATION		
	2	2014004182	WO		2014-01-03	SONOS, INC.		
	3	2012050927	WO		2012-04-19	BEYOND OBLIVION INC		

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	4	2008114389	WO	A1	2008-09-25	PIONEER CORPORATION.		
	5	2008082350	WO	A1	2008-07-10	SCANIA CV ABP [SE], et al.		
	6	2007131555	WO		2007-11-22	SONY ERICSOON MOBILE COMMUNICATIONS AB.		
	7	2007127485	WO		2007-11-08	MICROSOFT CORPORATION.		
	8	2007023120	WO		2007-03-01	SONY ERICSSON MOBILE COMM AB [SE], et al.		
	9	2005013047	WO	A2	2005-02-10	SONOS, INC.		
	10	2003093950	WO	A2	2003-11-13	GOLDBERG, BENJAMIN, M. et al.		
	11	200153994	WO		2001-07-26	FRISKIT, INC.		
	12	199961985	WO		1999-12-02	THE DOW CHEMICAL COMPANY.		
	13	2007135581	WO	A2	2007-11-29	KONINKL PHILIPS ELECTRONICS NV [NL], et al.		
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	1	Universal Plug and Play Vendor's Implementation Guide (January 5, 2000) (7 pages)	
	2	UPnP AV Architecture:0.83 (June 12, 2002) (SONDM000115483-504) (22 pages)	
	3	UPnP Design by Example, A Software Developers Guide to Universal Plug and Play Michael Jeronimo and JackWeast, Intel Press (D+M_0401307-818) (April 2003) (511 pages)	
	4	WANCommonInterfaceConfig:1 Service Template Version 1.01 For UPnP, Ver. 1.0 (November 12, 2001) (D+M_0401820-43) (24 pages)	
	5	WANIPConnection:1 Service Template Version 1.01 For UPnP Ver. 1.0 (November 12, 2001) (D+M_0401844-917) (74 pages)	
	6	WANPPPPConnection:1 Service Template Version 1.01 For UPnP, Version 1.0 (November 12, 2001) (D+M_0401918-2006) (89 pages)	
	7	WaveLan High-Speed Multimode Chip Set, AVAGO0003, Agere Systems, February 2003, 4 pages	
	8	WaveLan High-Speed Multimode Chip Set, AVAGO0005, Agere Systems, February 2003, 4 pages	
	9	WaveLAN Wireless Integration Developer Kit (WI-DK) for Access Point Developers, AVAGO0054, Agere Systems, July 2003, 2 pages	
	10	WaveLAN Wireless Integration-Developer Kit (WI-DK) Hardware Control Function (HCF), AVAGO0052, Agere Systems, July 2003, 2 pages	

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11	"Welcome. You're watching Apple TV." Apple TV 1st Generation Setup Guide, 8 April 2008 Retrieved 10/14/14, 40 pages	
12	"Welcome. You're watching Apple TV." Apple TV 2nd Generation Setup Guide, 10 March 2011 Retrieved 10/16/14, 36 pages	
13	"Welcome. You're watching Apple TV." Apple TV 3rd Generation Setup Guide, 16 March 2012 Retrieved 10/16/14, 36 pages	
14	WI-DK Release 2 WaveLan Embedded Drivers for VxWorks and Linux, AVAGO0056, Agere Systems, July 2003, 2 pages	
15	WI-DK Release 2 WaveLan END Reference Driver for VxWorks, AVAGO0044, Agere Systems, July 2003, 4 pages	
16	WI-DK Release 2 WaveLan LKM Reference Drivers for Linux, AVAGO0048, Agere Systems, July 2003, 4 pages	
17	Windows Media Connect Device Compatibility Specification (April 12, 2004) (16 pages)	
18	WPA Reauthentication Rates, AVAGO0063, Agere Systems, February 2004, 3 pages	
19	Yamaha DME 32 manual: copyright 2001.	
20	Yamaha DME 64 Owner's Manual; copyright 2004, 80 pages	
21	Yamaha DME Designer 3.5 setup manual guide; copyright 2004, 16 pages	

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	22	Yamaha DME Designer 3.5 User Manual; Copyright 2004, 507 pages	
	23	Yamaha DME Designer software manual: Copyright 2004, 482 pages	
	24	"Systemline Modular Installation Guide, Multiroom System," Systemline, 2003, pp. 1-22	

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