IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF 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

MEMORANDUM OPINION

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

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' 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.

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:

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.

('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:

> 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;
>
> 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).

[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.

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

[2] The '949 and '509 patents do not include device claims.

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 '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.

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.

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.

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.

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."

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.