IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SONOS, INC.,	)	
	)	
Plaintiff,	)	
	)	C.A. No. 24-131-JNR
v.	)	
	)	
LINKPLAY TECHNOLOGY INC.,	)	JURY TRIAL DEMANDED
LINKPLAY TECHNOLOGY, INC.,	)	
NANJING, ORIGIN ACOUSTICS, LLC	)	
	)	
Defendants.	)	

SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Sonos, Inc. ("Plaintiff" or "Sonos"), by its undersigned attorneys, for its Second Amended Complaint for Patent Infringement and Jury Demand hereby asserts the following claims for patent infringement of United States Patent Nos. 7,571,014, 9,164,532, 9,213,357, 10,146,498, 10,541,883, and 10,853,023 ("patents-in-suit"; attached hereto as Exhibits 1-5, 106) against Defendants (i) Linkplay Technology Inc. and Linkplay Technology, Inc., Nanjing (collectively, "Linkplay"), and (ii) Origin Acoustics, LLC ("Origin Acoustics"), and alleges as follows:

INTRODUCTION

1. Sonos is an American success story. It was founded in 2002 in Santa Barbara, California by a handful of engineers and entrepreneurs with a vision to invent the world's first networked, whole-home audio system. At the time, popular audio systems were dependent on a centralized receiver hard-wired to passive speakers throughout a home. Further, most homes with Internet access were limited to dial-up connections, the iPhone was still five years away, Netflix was mailing DVDs, and streaming music services like Spotify and Pandora did not exist. The technological barriers confronting Sonos were enormous.

2. To deliver on its vision, Sonos completely reimagined the in-home audio system as

a decentralized network of smart playback devices, and it developed a platform that could seamlessly and wirelessly distribute audio room by room or throughout the entire home at the user's discretion. Sonos created a "choose what to play, where to play it, and how loud" audio system that could not only perform without lag (*e.g.*, buffering or network interruptions) but that was also so simple and intuitive that customers would make it part of their daily lives.

3. In this respect, Sonos reinvented home audio, as acknowledged by the media. *See, e.g.*, Ex. 6 (2005 *PC Magazine*: describing one of Sonos's first products as "the iPod of digital audio" for the home and contrasting Sonos with conventional home audio systems that required "dedicated wiring"); Ex. 7 (2013 *NBC News*: "If you're not familiar with Sonos, this company revolutionized the home audio world a decade ago …."); Ex. 8 (2014 *Consumer Reports*: "Sonos not only helped to invent the wireless speaker category, the company also set the bar for performance, ease of use, and flexibility."); Ex. 9 (2015 *Men's Journal*: "Sonos almost singlehandedly established the stand-alone wireless home speaker system category ….").

4. Commercial success did not come easy for Sonos as its vision was in many ways ahead of its time. But year by year, consumers – and the entire industry – came to appreciate that multi-room audio systems could not only work but could become an essential part of the listening experience. Success required staying true to Sonos's disruptive vision, continuing to innovate while adjacent industries caught up and customers became more and more enamored with the idea of Sonos as they had the chance to encounter and use its products. Once Sonos had taken all the risks and placed enormous bets on research and development, the "first followers" began to copy Sonos's innovations.

5. To this day, Sonos remains focused on innovations that further enhance the listening experience. Sonos invests heavily in research and development and, as a result, frequently

invents new systems with new technologies, enhanced functionality, improved sound quality, and an enriched user experience.

6. As a result, Sonos has become one of the world's leading providers of innovative audio products. In recognition of its wide-ranging innovations, the U.S. Patent & Trademark Office has granted or allowed Sonos more than 1,500 U.S. patents, including the patents-in-suit, with thousands more in other countries. The innovations captured by these patents cover many important aspects of multi-room audio systems, including, for example, how to easily setup a playback device onto a data network, how to provision, manage, and control groups of playback devices, how to coordinate amongst playback devices over a data network for synchronous playback, and how a playback device intelligently switches between audio sources for playback.

7. The industry has recognized the importance of Sonos's patents. For example, Sonos earned a spot on the IPO list of "Top 300 Organizations Granted U.S. Patents" and the IEEE recognized Sonos as having one of "[t]he technology world's most valuable patent portfolios." *See* Exs. 10 and 11.

8. Sonos launched its first commercial products in 2005, and has since released a wide variety of critically-acclaimed, patented, networked multi-room audio products, including, for example, the Play:1, Play:3, Play:5 (Gen 1 and Gen 2), One (Gen 1 and Gen 2), One SL, Move, Move 2, Roam, Roam SL, Era 100, Era 300, Playbar, Playbase, Beam (Gen 1 and Gen 2), Ray, Sub (Gen 1, Gen 2, and Gen 3), Connect, Port, Connect:Amp, Amp, Five, and Arc. *See, e.g.*, Ex. 12. Sonos's products can be set up and controlled by the Sonos app. *Id.*

9. Sonos's efforts have made it incredibly popular with its customers. Sonos estimates that as of fiscal year 2022, Sonos's customers listened to 12.8 billion hours of audio content using its products. Ex. 13. And, as of fiscal year 2023, Sonos had a total of nearly 46.6 million products

registered in approximately 15.3 million households globally. Ex. 14.

10. Sonos's record of innovation has made it the undisputed leader in what has come to be called the "multiroom audio" field. *See, e.g.*, Ex. 15 (2018 Digital Trends: "Sonos is the king of multiroom audio ... a category it single-handedly created 16 years ago."); Ex. 16 (2019 What Hi-Fi: "[N]o multi-room offering is as complete or as pleasurable to live with as Sonos.").

11. Piggybacking off of Sonos's success, Linkplay attempted to launch its own networked multi-room audio system called "Muzo" sometime around 2015. *See, e.g.*, Ex. 89. Linkplay's Muzo product offering included a single networked multi-room audio product called "Cobblestone," which could be controlled by at least the Muzo app for iOS and Android. *See, e.g.*, *id.* Herein, "Muzo System" refers to one or more Cobblestone players and/or the Muzo app. The Cobblestone was intended to compete with Sonos's Connect product of the time. *See, e.g.*, Ex. 90. However, Muzo ultimately failed and was discontinued in the United States sometime around 2019.

12. Following the failure of Muzo, Linkplay launched another networked multi-room audio system, called "WiiM," sometime around 2021— nearly 20 years after Sonos was founded[1] — but this time with more ambitious plans to compete directly with Sonos. Linkplay's WiiM product offering is a line of networked multi-room audio products that includes, *inter alia*, the WiiM Amp, WiiM Amp Pro, WiiM Pro, WiiM Pro Plus, WiiM Ultra, WiiM Mini, and WiiM Wake-up Light ("WiiM players"), all of which can be controlled by at least the WiiM Home app for iOS, Android, MacOS, and Windows. *See, e.g.,* Exs. 17-18. Herein, "WiiM System" refers to

[1] Linkplay also has sold and continues to sell various "modules" advertised as enabling "multi-room" functionality including, *inter alia*, the A28, A31, A76D, A88, A97 series, A98 series, A108, and A118 modules. *See, e.g.*, Exs. 87-88. Herein, "Linkplay module" refers to any such module sold by Defendant.

one or more WiiM players and/or the WiiM Home app.

13. Since its launch, Linkplay's WiiM System has competed directly with Sonos for the sale of networked multi-room audio products. As observed by *Digital Trends*:

> Wiim — a relatively new brand from a company called LinkPlay — has just launched its second product, the $149 Wiim Pro. It's a ***direct competitor*** to the $449 Sonos Port. Both devices are designed to give your existing, non-wireless audio system a smart upgrade, so you can still enjoy the sound system you love while giving it access to the full range of features and streaming sources that a wireless speaker offers.
>
> While plenty of companies have copied Sonos, like Denon, Bose, and Bluesound, ***none*** have managed to do so ***at a significantly lower price*** or been able to develop ***a truly competitive app-based experience. The Wiim Pro does both.*** And if it's a sign of LinkPlay's ultimate ambitions in the whole-home wireless audio space, ***Sonos has every reason to be worried***.

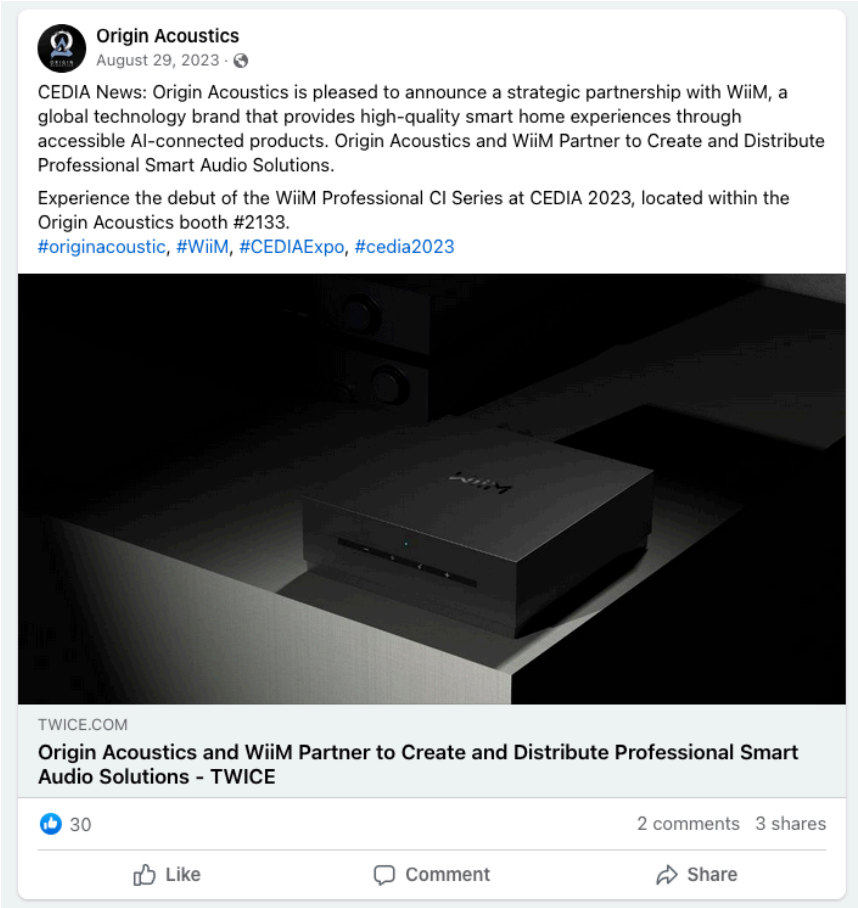
Ex. 19 (emphasis added); *see also* Ex. 20 (WiiM employee encouraging customers to "[c]heck out this article from Digital Trends"). Indeed, Linkplay charges $299 for the WiiM Amp, $149 for the WiiM Pro and $219 for the WiiM Pro Plus, whereas Sonos charges $449 for the Sonos Port and $699 for the Sonos Amp.

14. Linkplay's own employees have publicly alluded to Linkplay's intentions to capture market share away from Sonos:

Ex. 21.

15. Indeed, to capture market share away from Sonos, Linkplay partnered with third party distributors to offer for sell, sell, and/or import Linkplay modules and WiiM players. For instance, Linkplay partnered with Origin Acoustics at least as early as August 2023 to import

WiiM players into the United States and offer for sale and sell them to customers (including audio dealers, resellers, and/or integrators) across North America. Exs. 107-108. Origin Acoustics publicly characterized this partnership with Linkplay as a "strategic" one to "[c]reate and [d]istribute [p]rofessional [s]mart [a]udio [s]olutions":



Ex. 109.

16. As part of this "strategic" partnership with Linkplay, Origin Acoustics avidly promoted and sold the WiiM System throughout the United States to distributors and resellers in the custom installer and retail markets.

17. For example, in September 2023, Origin Acoustics showcased several WiiM

players at CEDIA Expo 2023, which is a well-known expo for smart home technology professionals that typically takes place in Denver, Colorado. Ex. 110. At CEDIA Expo 2023, employees of Origin Acoustics promoted the WiiM System, including the ability to group devices via the WiiM Home App. Ex. 111.

18. As another example, Origin Acoustics promoted the WiiM System on its own website as late as February 2024. Ex. 112. For instance, Origin Acoustics' website at that time touted that "you can create a more flexible multiroom sound system with multiple WiiM Pros, WiiM Minis, or Linkplay-powered devices." *Id.*

19. As another example, Origin Acoustics has promoted and sold the WiiM players throughout the United States, including by selling WiiM players to a swath of third-party custom installers around the country and to third-party distributors, such as World Wide Stereo, Inc., who in turn, supplies WiiM players to national retailers like Walmart and Target. Accordingly, and on information and belief, Origin Acoustics is Linkplay's largest distributor and strategic partner in the United States and thus, has been and is engaging in substantial infringement of Sonos's patents.

20. To obtain documents and information concerning Origin Acoustics' partnership with Linkplay, Sonos served a third-party subpoena to Origin Acoustics in May 2024. *See* D.I. 34. However, sometime after Sonos served the subpoena, Origin Acoustics surreptitiously removed any mention of Linkplay or WiiM from its website. *See* Ex. 113. On information and belief, Origin Acoustics proactively took such action to make its importation and sales activities involving the WiiM players less visible to Sonos and/or downplay its involvement with Linkplay.

21. Despite removing any mention of Linkplay and WiiM from its website, Origin Acoustics continues to offer for sale, sell, and/or import WiiM players and continues to promote the WiiM System, including its infringing functionalities.

22. For instance, as late as September 2024, Origin Acoustics showcased several WiiM players at CEDIA Expo 2024. Ex. 114. There, employees of Origin Acoustics promoted the WiiM System and even demonstrated how to use the WiiM Home app, including how to group multiple WiiM players for synchronized playback. Exs. 115-116. Origin Acoustics also showcased new WiiM players that were expected to ship in October 2024, including the WiiM CI MOD S and the WiiM CI MOD A80. Ex. 114. According to *AudioXpress*, "[t]hese solutions underscore Origin Acoustics' pivotal role as a key distribution partner for WiiM's Home and Custom Installed product lines across the United States and Canada." *Id.*

23. Instead of innovating to compete fairly with Sonos, Linkplay resorted to shamelessly copying Sonos. For example, with respect to the WiiM Pro, *Digital Trends* observed that it is practically a "carbon copy" of the Sonos Port:

1. Wiim Pro with accessories
2. Wiim Pro (left) and Sonos Port

Physically, ***the Wiim Pro isn't just similar to the Sonos Port — it's practically a carbon copy***, right down to the fact that ***both "WIIM" and "SONOS" are ambigrams*** (they look the same right-side up, or upside down). They're both made from black plastic, their dimensions are within a millimeter or two of each other, and ***even their circle-in-a-square bottom panels bear a strong resemblance to one another.*** Both devices come with a power adapter and a set of RCA cables for analog connections, but the Wiim goes a step further with an included optical cable.

Wiim Pro (left) and Sonos Port | Simon Cohen / Digital Trends

Ex. 19 (emphasis added); *see also* Ex. 20 (WiiM employee encouraging customers to "[c]heck out this article from Digital Trends").

24. In line with the observations from *Digital Trends*, the "circle-in-a-square bottom panel[ ]" of the Wiim Pro (Ex. 19) bears a strong resemblance to the "bottom plan view" of the "ornamental design" claimed in Sonos Design Patent No. D959,405, which was filed by Sonos on December 15, 2020 and claims a priority date of August 19, 2019:

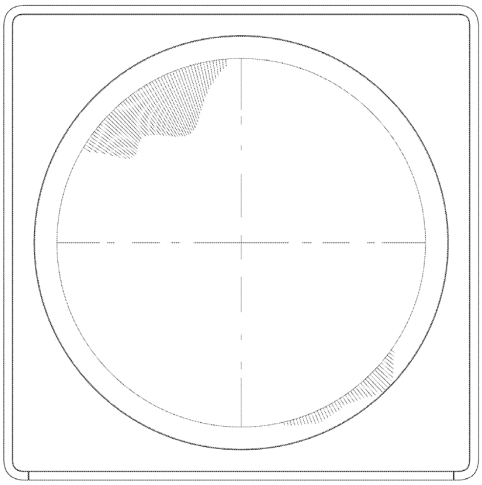
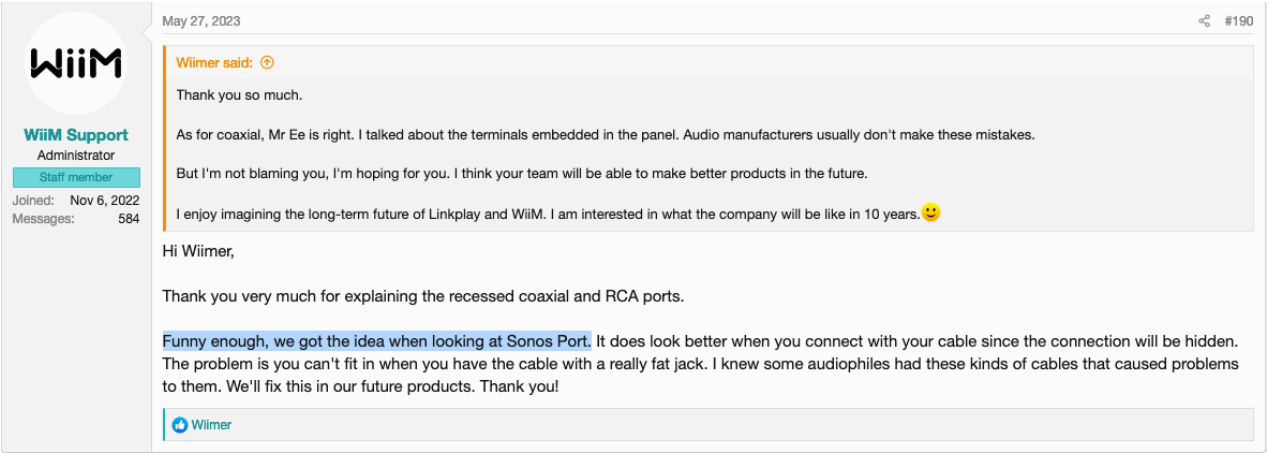


FIG. 14

Ex. 80.

25. Linkplay does not even attempt to conceal its practice of copying Sonos. To the contrary, Linkplay publicly extolls this practice to its customers:



Ex. 22.

26. Linkplay's shameless copying of Sonos does not stop there. With respect to the WiiM Amp, *Digital Trends* observed that it "mimics the Sonos Amp" and further observed that "the Wiim Amp, is an amplified wireless network music player that bears a ***strong resemblance to the Sonos Amp, both in function and form***." Ex. 23 (emphasis added).

27. As further observed by *Digital Trends*, even Linkplay's WiiM Home app mimics the Sonos app:

> The Wiim Amp joins the Wiim Mini, Wiim Pro, and Wiim Pro Plus network music streamers. Each can be used on its own or as part of a multiroom audio system via ***the Wiim app, which also features many of the same functions as Sonos' software***.

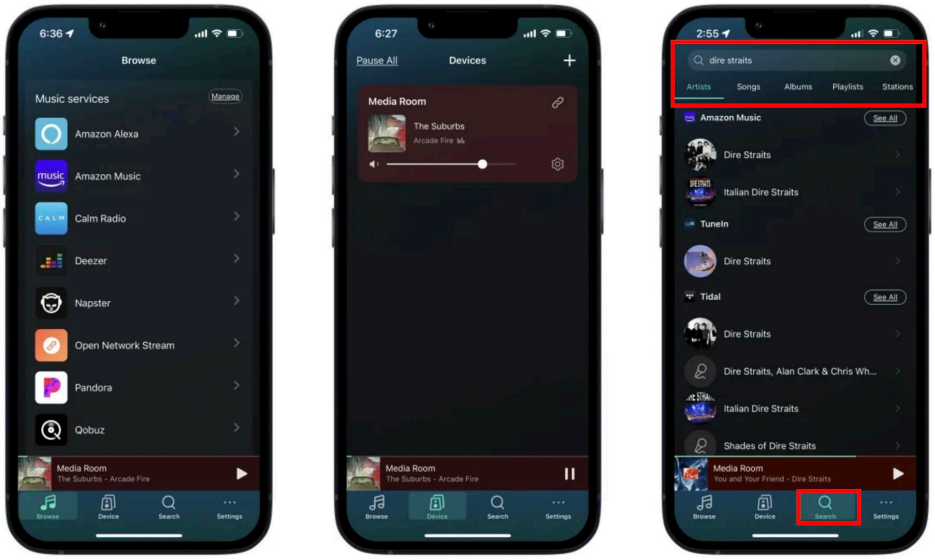
Id. (emphasis added).

> Once you're up and running, ***the [WiiM Home] app interface will be immediately familiar to Sonos users***, and it's simple to navigate even if you've never used a wireless music system before.

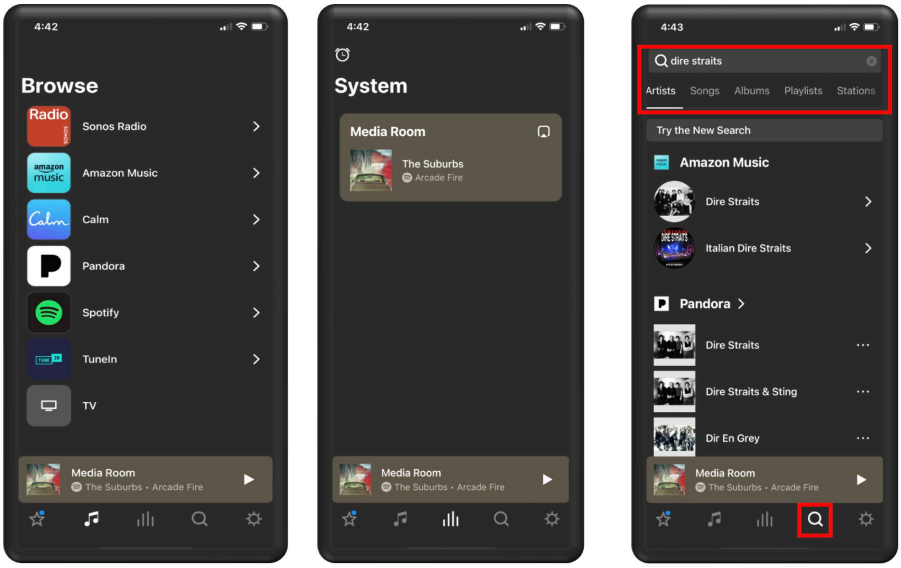
Ex. 19 (emphasis added).

28. To illustrate, some example comparisons of the WiiM Home app and the Sonos app are shown below:

WiiM Home app



Sonos app



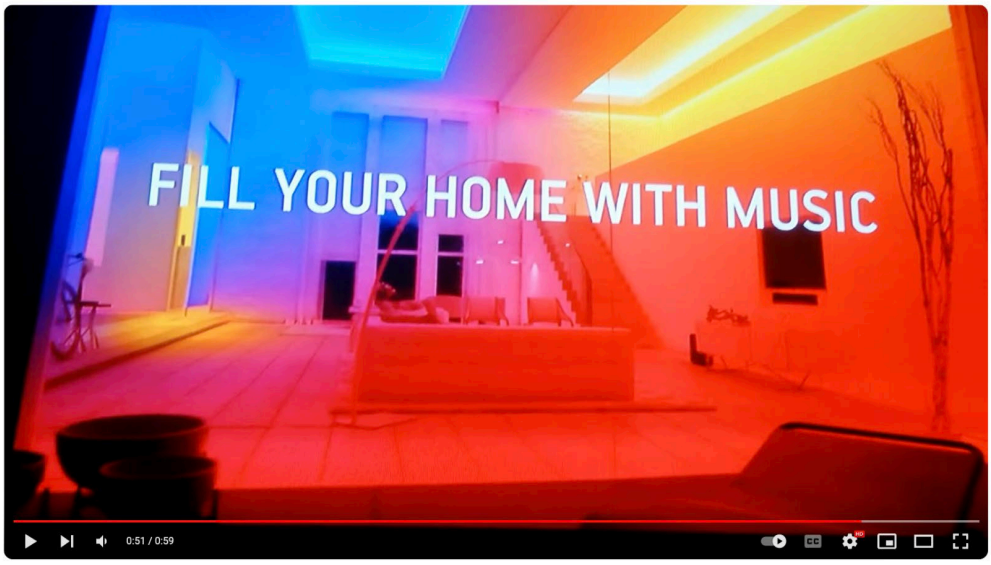
29. Linkplay also unabashedly copied Sonos's tagline — "FILL YOUR HOME WITH MUSIC" — which is reflected in Linkplay's user guides:

3 Fill your home with music

Stream your go-to tunes or radio stations to any type of speaker-be it floor-standing, architectural, or bookshelf. With multiple WiiM Amp units, you can fill your entire home with streaming music. Want more? Connect a stereo component like a turntable, computer, or TV, and broadcast your audio to multiple devices simultaneously.

Ex. 24.

30. Sonos's "FILL YOUR HOME WITH MUSIC" tagline was widely-used during Sonos's marketing campaign that started around 2013 and was prominently featured in a Super Bowl commercial in 2014. *See, e.g.*, Ex. 82; Ex. 83:



Sonos Speakers 2014 Super Bowl Commercial

31. On information and belief, Linkplay's copying of Sonos extends beyond the surface and includes the incorporation of Sonos's patented innovations into the WiiM System, Muzo System, and/or Linkplay modules. It is Linkplay misappropriating Sonos's patented innovations

that forms the basis for the present patent infringement claims, as set forth below.

32. Linkplay and Origin Acoustics have had actual and/or constructive knowledge of Sonos's patents, including the patents-in-suit, well before the filing of this action. In particular, Linkplay had actual or constructive knowledge of the patents-in-suit at least as early as the launch dates for the Cobblestone player, each of the WiiM players, and/or each of the Linkplay modules, if not as early as the issue date for each of the patents-in-suit. And Origin Acoustics had actual or constructive knowledge of Sonos's patent portfolio, including the patents-in-suit, at least as early as the issue dates for each of the patents-in-suit as a result of Origin Acoustics' awareness of Sonos's position in the market, its status as a leading innovator in the field of wireless multi-room audio, and Origin Acoustics' distribution of WiiM players, which Origin Acoustics knew competed with Sonos and including technology that Sonos accused of infringing Sonos's patents.

33. Despite its constructive knowledge and the fact that Origin Acoustics should have been aware of Sonos's extensive patent portfolio much earlier, Origin Acoustics had actual knowledge of the '014, '532, '357, '883, and '023 Patents at least as early as May 2024 as a result of the fact that Sonos served a third-party subpoena on Origin Acoustics in May 2024, which among other things, identified the '014, '532, '357, '883, and '023 Patents, and referenced this lawsuit. As such, at least by May 2024, Origin Acoustics knew that Sonos had accused Linkplay of infringing the '014, '532, '357, '883, and '023 Patents in this lawsuit, knew that it was promoting, selling, offering for sale, and importing infringing WiiM players, and thus, knew that it too was infringing at least the '014, '532, '357, '883, and '023 Patents by engaging and continuing to engage in these activities.

34. For instance, Linkplay and Origin Acoustics have been aware (or should have been aware) of Sonos's extensive patent portfolio in view of Sonos's leading position in the multi-room

audio industry since its first commercial launch in 2005. Indeed, as outlined above, Sonos launched its first commercial product in 2005, which garnered significant industry attention and praise. Sonos has continuously innovated and refined its product line ever since.

35. Additionally, Sonos prominently displays its patents on Sonos's website (*see, e.g.*, Ex. 31), and Sonos includes a notice of its patents in Sonos's product inserts/manuals and the Sonos app (*see, e.g.*, Ex. 81). Linkplay's testing of Sonos's products, Linkplay's direct competition with Sonos since launching the Muzo and WiiM Systems, and Linkplay's deliberate copying of Sonos products, evince that Linkplay was aware (or should have been aware) of Sonos's patent portfolio, including the patents-in-suit at least as early as the launch dates for the Cobblestone player, each of the WiiM players, and/or each of the Linkplay modules, if not as early as the issue date for each of the patents-in-suit.

36. Linkplay and Origin Acoustics have also been aware (or should have been aware) of Sonos's patents in view of Sonos's previously-filed patent litigation against D&M (another direct competitor of Sonos and Linkplay) and its infringing Denon HEOS system – *Sonos Inc. v. D&M Holdings, Inc.*, C.A. No. 14-1330-RGA (D. Del.). *See* Ex. 27. This prior litigation lasted over three years, garnered media attention across the industry, and resulted in a jury verdict for Sonos on all counts, including, *inter alia*, willful infringement of one of the patents-in-suit asserted here against Linkplay (namely, United States Patent No. 7,571,014). *See*, *e.g.*, Ex. 28 (2014 *VentureBeat* article entitled "Sonos sues Denon, alleging wireless speaker patent infringement"); Ex. 29 (2014 *CNET* article entitled "Sonos sues Denon for 'copying' its wireless products"); Ex. 30 (Sonos v D&M jury Verdict Form finding for Sonos on all counts, including the '014 Patent).

37. Further, Linkplay and Origin Acoustics have also been aware (or should have been aware) of Sonos's patents in view of Sonos's complaint in January 2020 asking the United States

International Trade Commission ("ITC") to institute an investigation into the unlawful importation into and sale in the United States of infringing products by Google (another direct competitor of Sonos and Linkplay) – *In re Certain Audio Players and Controllers, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-1191. *See* Ex. 84. This ITC investigation resulted in an exclusion order prohibiting unlicensed entry into the United States of Google products infringing five Sonos patents, some of which are related to the patents-in-suit asserted here against Linkplay. *See* Ex. 85. The ITC exclusion order garnered national media attention. *See*, *e.g.*, Ex. 86 (Jan. 2022 *New York Times* article entitled "Google Infringed on Sonos Speaker Technology, Trade Court Rules").

38. Linkplay has also been aware (or should have been aware) of Sonos's patents, including the patents-in-suit, as evidenced by Linkplay's employees studying Sonos's products and product literature. *See, e.g.,* Ex. 32 (WiiM employee encouraging customer to "try setting latency to 0 on each WiiM device," and informing customer "[t]his should mirror your prior Sonos setup, given that the Sonos Connect doesn't account for downstream audio latency."); Ex. 33 (WiiM employee sharing "Sonos product's power consumption numbers" to customers). Studying Sonos's products and product literature and deliberately designing the WiiM players to mimic the functionality of Sonos's products evince that Linkplay was aware (or should have been aware) of Sonos's patents, including the patents-in-suit, at least as early as the launch dates for each of the WiiM players, if not as early as the issue date for each of the patents-in-suit.

THE PARTIES' PRE-LITIGATION COMMUNICATIONS

39. Prior to Sonos initiating this suit, the parties had several in-person and electronic communications. The purpose of such communications was to identify a remedy for Linkplay's copying of Sonos's products and its infringement of Sonos's IP. Sonos met with Linkplay in good

faith and earnestly sought a business solution to address Linkplay's rampant infringement. However, Linkplay offered no assurances that it would cease its infringement and offered no feasible business solution either. Sonos's pre-litigation communications ultimately culminated in a formal notice letter sent to Linkplay on December 11, 2023 identifying 148 Sonos patents, including each of the patents-in-suit, and alleging that Linkplay infringed each identified patent. Linkplay ignored this letter, confirming that their choice was to continue willfully infringing Sonos's IP. This action forced Sonos to turn to the court to seek a remedy.

40. More specifically, the parties first met on or around January 6, 2023 at the Consumer Electronics Show in Las Vegas, Nevada. Through this meeting, Sonos desired to try and work together to remedy Linkplay's infringement of Sonos's IP. At this meeting, Sonos articulated its belief that Linkplay was infringing Sonos's patents. However, Linkplay offered no solution to its infringement and would not agree to stop infringing.

41. The parties next met via conference call on or around February 15, 2023. At this meeting, rather than offer a meaningful business solution or other remedy for Linkplay's past and ongoing infringement, Linkplay suggested that Sonos provide Linkplay with Sonos's proprietary technology so that Linkplay could freely incorporate even more Sonos IP into Linkplay's products. In essence, Linkplay sought a partnership to use Sonos's IP to bring to market a product that would connect to "legacy speakers" (i.e., passive, unpowered speakers). However, Sonos explained that Linkplay's implied partnership was a non-starter because Sonos already offered a commercial solution to this via the Sonos Amp product. As such, this was not a good faith suggestion by Linkplay to remedy its infringement. As an alternative, Sonos proposed a partnership where the parties would bring to market a product that would connect to Sonos's prior generation players (i.e., Sonos players that operated using the "S1" operating system). However, no solution was

reached.

42. The parties met once again on or around September 25, 2023 in San Francisco, California. At this meeting, the parties again explored a commercial solution, namely, the feasibility of Sonos making an investment with Linkplay. More particularly, Sonos inquired as to whether the parties could collaborate on new products that would replace the infringing products. However, again, no solution was reached. And Linkplay offered no assurances that its continued infringement would otherwise cease.

43. The parties then exchanged emails and phone calls in and around November and December 2023. In these exchanges, Sonos again brought up a mutually-beneficial option to either collaborate on developing a new product or agree to an IP license that would remedy Linkplay's infringement. Linkplay did not agree. Instead, Linkplay lamented not being able to afford an IP license due to Linkplay's profit margin being relatively small. But this was the very problem that Sonos was trying to address. Linkplay prices its infringing products much lower than Sonos's products in order to undercut Sonos and unfairly compete with Sonos using the technology and IP that Sonos developed over the last 20 years. *See, e.g., supra*, ¶ 13. Sonos specifically explained to Linkplay that misappropriating Sonos's IP and copying Sonos's features, functionality, and aesthetic design was enabling Linkplay to unfairly compete in the marketplace. Sonos explained that in the context of recognizing the value of Sonos's IP and obtaining a license to use Sonos's technology, which Linkplay was currently using for free, would likely result in Linkplay having to raise its prices.

44. Once again, Linkplay failed to agree to stop infringing or obtain a license to use Sonos's technology. Linkplay chose the opposite - to continue to willfully infringe Sonos's IP. In fact, during the parties' discussions seeking to address Linkplay's infringement, Linkplay

increased its infringement by releasing a new infringing product, the WiiM Amp. By doing so, Linkplay cemented its position that it had no intention to stop infringing or to secure a license to continue using Sonos's IP to compete with Sonos.

45. At no point during these meetings did Sonos express that it consented to or would not otherwise address Linkplay's infringement, including past infringement. In fact, at these meetings Sonos sought to address Linkplay's infringement. Several times during these meetings, Sonos expressly noted that (i) its counsel was investigating the breadth of Linkplay's infringement, (ii) Linkplay had no permission to use Sonos's IP, and (iii) Sonos needed to address, would address, and was addressing this infringement.

46. At no point during these meetings did Sonos seek Linkplay's technical assistance with Sonos's products or otherwise solicit Linkplay to improve Sonos's products. Instead, Sonos sought a mutually-beneficial business or IP license solution that would address Linkplay's willful infringement. The parties came to no solution.

47. After months of good-faith attempts to remedy Linkplay's infringement without any progress toward a commercially-feasible solution, Sonos, on December 11, 2023, sent Linkplay a letter providing notice of infringement of 148 Sonos patents, including each of the patents-in-suit. *See* Ex. 26. For example, the letter identified the patents-in-suit by number, identified each WiiM player and Linkplay module by name, and accused Linkplay of infringing the patents-in-suit by, inter alia, using, manufacturing, offering for sale, selling and/or importing the WiiM players and/or Linkplay modules in or into the United States.

48. Linkplay did not respond to this letter, but instead chose to continue to willfully infringe Sonos's patents, including the patents-in-suit, with knowledge of the patents and knowledge that it was infringing.

49. Linkplay's infringement has been willful since the time Linkplay became aware of (or should have become aware of) the patents-in-suit. Based on the foregoing, Linkplay became aware of (or should have become aware of) the patents-in-suit and had knowledge that they were infringing these patents-in-suit at least as early as (i) the issue date for each of the patents-in-suit, (ii) the launch dates for each of the WiiM players, Linkplay modules, and/or the Cobblestone player, (iii) January 2023, when the parties first met to discuss Linkplay's infringement, or (iv) December 11, 2023 when Sonos sent a letter to Linkplay accusing it of infringing the patents-in-suit.

50. On information and belief, Linkplay is unwilling to stop infringing because its infringement of Sonos's patented inventions has paved the way for Linkplay to sell its products "at a significantly lower price" than Sonos. Ex. 19; *see also* Ex. 20 (WiiM employee encouraging customers to "[c]heck out this article from Digital Trends").

51. On information and belief, Origin Acoustics is also unwilling to stop infringing and continues to offer for sale, sells, and/or imports WiiM players because its strategic partnership with Linkplay has paved the way for Origin Acoustics to sell WiiM players at lucrative profit margins.

THE PARTIES

52. Plaintiff Sonos, Inc. is a Delaware corporation with its principal place of business at 614 Chapala Street, Santa Barbara, California 93101. Sonos is the owner of the patents-in-suit.

53. Defendant Linkplay Technology Inc. is a Delaware corporation with an established place of business at 8000 Jarvis Ave, Suite 130, Newark, CA 94560.

54. Defendant Linkplay Technology, Inc., Nanjing is a Chinese corporation with an established place of business at 8F-8036, Qianren Building, No.7, Yingcui Road, Jiangning District,

Nanjing, China.

55. Defendant Origin Acoustics, LLC is a Delaware corporation with an established place of business at 6975 S Decatur Blvd, Suite 140, Las Vegas, NV 89118.

56. Linkplay directly and/or indirectly develops, designs, manufactures, distributes, markets, offers for sale, sells, and/or imports the WiiM System and/or Linkplay modules in/into the United States, including in the District of Delaware, and otherwise purposefully directs infringing activities to this District in connection with the WiiM System and/or Linkplay modules.

57. Origin Acoustics directly and/or indirectly distributes, markets, offers for sale, sells, and/or imports the WiiM System in/into the United States, including in the District of Delaware, and otherwise purposefully directs infringing activities to this District in connection with the WiiM System.

JURISDICTION AND VENUE

58. This is a civil action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. This Court has jurisdiction under 35 U.S.C. §§ 271, *et seq*., and 28 U.S.C. §§ 1331 and 1338.

59. This Court has personal jurisdiction over Defendants.

60. More specifically, this Court has personal jurisdiction over Defendants because, on information and belief, Defendants – namely, (a) Linkplay Technology, Inc., Nanjing acting in concert with its wholly-owned U.S. subsidiary, Linkplay Technology Inc., and (b) Origin Acoustics– have (1) availed themselves of the rights and benefits of the laws of the State of Delaware, (2) transacted, conducted, and/or solicited business and engaged in a persistent course of conduct in the District of Delaware, (3) derived substantial revenue from the sales and/or use of products, such as the Muzo System, WiiM System, and/or Linkplay modules, in this District, (4)

purposefully directed activities (directly and/or through intermediaries), such as shipping, distributing, offering for sale, selling, and/or advertising their infringing products, at residents in this District, via, for instance, the WiiM Home storefront on Amazon.com, where residents of this District and the United States generally can purchase the WiiM System and have it delivered to their residences, (5) delivered their infringing products into the stream of commerce with the expectation that the products will be used and/or purchased by consumers in this District, and (6) committed acts of patent infringement in this District.[2]

61. This Court also has personal jurisdiction over Defendants because, Linkplay Technology Inc. and Origin Acoustics are both incorporated in Delaware, and, on information and belief, Linkplay Technology, Inc., Nanjing intentionally registered Linkplay Technology Inc. to do business with the State of Delaware Division of Corporations and has directed and does direct the foregoing activities at residents in this District (and the United States generally). In this way, Linkplay Technology Inc. is a business division of Linkplay Technology, Inc., Nanjing. Together, they operate as a single business entity with Linkplay Technology, Inc. acting as an agent and the alter ego of Linkplay Technology, Inc., Nanjing, who directs and controls the actions of its wholly-owned subsidiary, Linkplay Technology, Inc.

62. Illustrating that Linkplay Technology Inc. is the alter ego of Linkplay Technology, Inc., Nanjing – and that these entities operate together as a single business entity – is the fact that

[2] In fact, Linkplay's CEO boasted to the Chinese media in 2016 that Linkplay was selling hundreds of thousands of smart speakers every month with 80% to 90% sold in the United States (including this District) and Europe. Ex. 91. Linkplay Technology Inc., Nanjing also represents on its website that it "currently powers over hundreds of brands and smart products in multiple regions around the world, in[cluding] the United States …," and has a "Sales Team" in "US/North America" and "US Distribution" channel (which includes this District) for its products and services, including Linkplay modules. *See, e.g.,* Exs. 92-93.

Linkplay Technology Inc. and Linkplay Technology, Inc., Nanjing share corporate officers and share business addresses and offices. In particular, Linkplay Technology Inc. and Linkplay Technology, Inc. Nanjing both identify Lifeng Zhao as their CEO, both identify the same "US Headquarters," and both identify the same office in China as a business address. *See, e.g.,* Exs. 93-96. On information and belief, Linkplay Technology Inc., Nanjing has been aware that Linkplay Technology Inc. purposefully directed activities at residents in this District, and/or has been aware that the infringing products, such as the Muzo System, WiiM System, and/or Linkplay modules, have and do reach residents in this District. Linkplay Technology Inc., Nanjing purposefully intends for this to happen and/or directs its alter ego Linkplay Technology Inc. to carry this out.

63. This Court has personal jurisdiction over Linkplay Technology, Inc., Nanjing because it has carried out acts of infringement in this judicial district and in the United States generally. In particular, Linkplay Technology, Inc., Nanjing (acting alone or in concert with Linkplay Technology, Inc.) makes, uses, sells, offers to sell or imports one or more of the accused products, namely the Cobblestone player, the WiiM players, and/or the Linkplay modules. On information and belief, Linkplay Technology, Inc., Nanjing (acting alone or in concert with Linkplay Technology, Inc.) sells at least the Linkplay modules to third parties who are located in the United States and/or to third parties who take delivery of the Linkplay modules outside of the United States but nevertheless install them into third-party players, and then make, use, sell, and/or offer to sell such players to customers located in the United States and in this judicial district. *See* Ex. 105.

64. On information and belief, Linkplay Technology, Inc., Nanjing (acting alone or in concert with Linkplay Technology, Inc.) knows and intends for such Linkplay modules to be

installed into third party players that are made, used, sold, offered for sale in, and imported into the United States.

65. On information and belief, Linkplay Technology, Inc., Nanjing (acting alone or in concert with Linkplay Technology, Inc.) also collaborates with such third parties to provide technical assistance with the incorporation of the Linkplay modules into the third-party players and encourages and assists these third parties in their making, using, selling, offering to sell, and importing into the United States these third-party players.

66. In this way, Linkplay Technology, Inc., Nanjing (acting alone or in concert with Linkplay Technology, Inc.) commits acts of infringement in the United States generally and this judicial district specifically, namely direct infringement under § 271(a) and indirect infringement under § 271(b).

67. This Court also has personal jurisdiction over Defendants because they engage (and have engaged) in several additional activities that target residents in this District. For instance, Linkplay Technology, Inc., Nanjing has targeted residents in this District by making various "companion apps" available for download to residents in this District and the United States generally. *See, e.g.,* Ex. 97. For example, Linkplay Technology, Inc., Nanjing (alone or acting in concert with Linkplay Technology Inc. and/or third parties that offer for sale, sell, and/or advertise products in this District) has made and continues to make several companion apps available for download to residents in this District, including, *inter alia*, the Muzo, iLuv, Fabriq, Edge, and GGMM-E series apps. *See, e.g.,* Ex. 98 at p. 2 ("[P]lease make sure you have uninstalled any other Linkplay Apps, including but not limited to MUZO, iLuv, Fabriq, MUZO, Edge, GGMM etc."); Exs. 89, 99-101.

68. As another example, Linkplay Technology, Inc., Nanjing (acting alone or in concert

with Linkplay Technology Inc.) targets residents in this District by making the WiiM Home app available for download to residents in this District and providing automatic software updates for the infringing products, such as the WiiM System, in this District (and the United States generally). *See, e.g.,* Exs. 61-63, 73-74, 102-103.

69. The foregoing is sufficient to establish that personal jurisdiction over Linkplay lies for at least the additional reason that this Court denied Linkplay Technology, Inc. Nanjing's motion to dismiss this action for lack of personal jurisdiction, finding that the foregoing facts, among others, establishes that this Court has personal jurisdiction over Linkplay Technology, Inc. Nanjing. D.I. 111.

70. Further, this Court has personal jurisdiction over Origin Acoustics because it has also carried out acts of infringement in this judicial district specifically and in the United States generally. In particular, Origin Acoustics at least sells, offers to sell, or imports one or more of the WiiM players. For instance, on information and belief, Origin Acoustics sells one or more of the WiiM players to third-party audio dealers, resellers, custom installers, and/or integrators, such as RAC Enterprises, Inc. d/b/a World Wide Stereo. In turn, such third parties, such as World Wide Stereo, offer for sale and/or sell one or more of the WiiM players to customers located in this judicial district and the United States through various distribution channels, including its physical store in the Philadelphia area located within 50 miles of this judicial district, its own website, eBay.com, and big-box retailer websites, including but not limited to, Walmart.com and Target.com. *See, e.g.,* Exs. 117-125. World Wide Stereo was ranked third in last year's CE Pro 100 among custom retailers/e-tailers with over $50 million in revenue in 2023. Ex. 126. Accordingly, Origin Acoustics knows and intends that by importing, promoting, offering for sale, and selling WiiM players to at least these third-party audio dealers, resellers, custom installers,

and/or integrators, that these WiiM players are, in fact, offered for sale and/or sold to customers in this judicial district and throughout the United States.

71. Venue is proper in this District under the provisions of 28 U.S.C. §§ 1391(b) and (c) and 28 U.S.C. § 1400(b).

PATENTS-IN-SUIT

Background

72. Sonos was founded to solve various shortcomings in existing conventional audio technology. At the time, a "conventional multi-zone audio system" was based on a "centralized" device that was "hard-wired" to "audio players" in different rooms with dedicated speaker wire. *See, e.g.*, '014 Patent at 1:34-40, 1:50-53. These "audio players" were basic "speakers" that passively received and outputted audio signals but lacked processing capabilities. *See, e.g.*, *id*. at 1:34-53.

73. In this conventional "hard-wired" configuration, each audio player relied on a "centralized" device that managed and controlled the multi-zone audio system. Under this approach, audio sources were either hard-wired to the "centralized" device, which made playing different audio sources at different audio players difficult (if not impossible), or hard-wired locally at a given audio player, which "[made] source sharing difficult." *See, e.g.*, *id*. at 1:38-49. For example, before an audio player could play audio from a source, a user had to configure the centralized device to route audio to the audio player from the common source. *See, e.g., id*. at 1:43-49.

74. In these conventional "hard-wired" systems, it was difficult or impossible to play different audio sources on different audio players, "group" and control audio players, access and play network-based audio sources (*e.g.*, Internet radio), and install and configure the system in the

first instance, which required physically connecting every device to the "centralized" device. *See, e.g.*, *id*. at 1:34-2:4.

75. As recognized in 2005 when Sonos released its first products, Sonos developed a series of new technologies to solve the many shortcomings of conventional hard-wired audio systems, thereby revolutionizing the field. In turn, Sonos's own introduction of paradigm-shifting technology created new technological opportunities and/or challenges that Sonos further solved.

76. For starters, Sonos provided an unconventional system architecture comprising "zone players" (also referred to as "playback devices") on a data network that were controlled by physical "controller" devices. *See, e.g.*, '014 Patent at FIG. 1; '883 Patent at FIG. 1; '023 Patent at FIG. 1. The following figure illustrates a simplified diagram of an exemplary Sonos audio system in accordance with this new system architecture, which comprises "zone players" 102, 104, and 106 and "controllers" 140 and 142 coupled to one another by a local data network 108 and two local audio sources 110 and 112 along with a connection to the Internet:

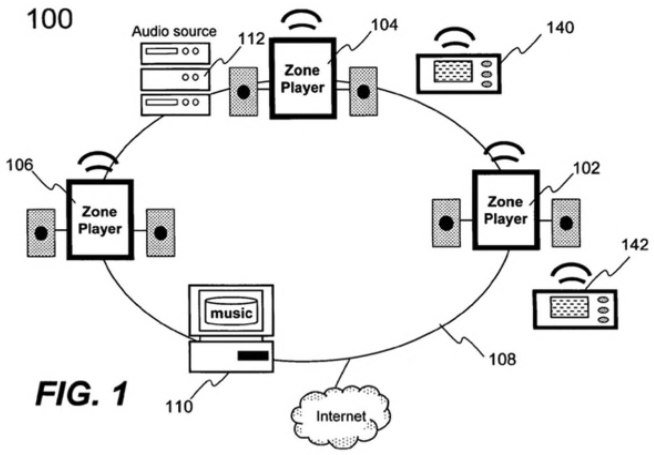


FIG. 1

'014 Patent at FIG. 1; *see also, e.g.*, '883 Patent at FIG. 1; '023 Patent at FIG. 1.

77. Unlike audio players in conventional "centralized," "hard-wired" multi-zone audio systems, each of Sonos's "zone players" was an "independent playback device" with a data

network interface and processing intelligence enabling it to independently access and play back any audio source available on a local data network or another data network coupled thereto (*e.g.*, the Internet) without reliance on a centralized device. *See, e.g.*, '014 Patent at 4:64-67, 5:5-38; '357 Patent at 1:25-35; '532 Patent at 2:29-41.

78. The new, unconventional nature of Sonos's "zone players" introduced additional technological challenges to Sonos's system, which required Sonos's "zone players" to have new intelligence enabling the "zone players" to "share information" with one another so that they could "reproduce audio information synchronously," among other unconventional capabilities. *See, e.g.*, '357 Patent at 31:30-44; '532 Patent at 31:21-35. Thus, Sonos's new system featured "zone players" that could simultaneously play different audio from different sources or be "grouped" together to play the same audio source in a synchronized manner. *See, e.g.*, '357 Patent at FIG. 1, 3:41-53, 4:15-44, 5:4-6:58, Claims 1, 8, 9; '532 Patent at FIG. 1, 3:38-50, 4:11-39, 4:66-6:54, Claims 1, 10, 22, 34; '014 Patent at 2:24-40.

79. Further, unlike the "pre-configured and pre-programmed controller[s]" used to control conventional "centralized," "hard-wired" audio systems, Sonos's "controller" devices were capable of remotely controlling any "zone player" in a Sonos audio system from anywhere in a user's house or the like via a data network. *See, e.g.*, '014 Patent at 7:23-42; *see also, e.g.*, '357 Patent at 5:20-23, 5:32-34, 6:31-35; '532 Patent at 5:15-18, 5:27-29, 6:27-31. Building on the intelligence of Sonos's new "zone players," Sonos's "controllers" had new capabilities, including dynamically "grouping the zone players" and "control[ling] the volume of each of the zone players in a zone group individually or together." '014 Patent at 7:38-43; *see also, e.g.*, '357 Patent at FIG. 1, 3:41-53, 4:15-44, 5:4-6:58, Claims 1, 8, 9; '532 Patent at FIG. 1, 3:38-50, 4:11-39, 4:66-6:54, Claims 1, 10, 22, 34.

80. Thus, Sonos's audio system comprising networked "zone players" controlled by physical "controllers" over a data network provided an entirely new paradigm in home audio that overcame the technological deficiencies of conventional audio systems. Moreover, Sonos's unconventional system architecture created new technological challenges that needed to be solved and provided a new platform for further innovation. As discussed in further detail below, the Sonos patents-in-suit are directed to overcoming these technological challenges and building on this new platform.

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

81. Sonos is the owner of U.S. Patent No. 7,571,014 (the "'014 Patent"), entitled "Method and Apparatus for Controller Multimedia Players in a Multi-Zone System," which was duly and legally issued by the United States Patent and Trademark Office ("USPTO") on August 4, 2009. A Reexamination Certificate for the '014 Patent was duly and legally issued by the USPTO on March 19, 2013. A copy of the '014 Patent, including the Reexamination Certificate, is attached hereto as Exhibit 1.

82. The '014 Patent relates generally to devices, computer-readable media, and methods for controlling a plurality of playback devices on a local area network.

83. The '014 Patent recognized problems with conventional multi-zone audio systems. For instance, the '014 Patent recognized that "conventional multi-zone audio system[s]" were undesirably based on a "centralized" device that was "hard-wired" to "audio players" in different rooms with dedicated speaker wire. *See, e.g.*, '014 Patent at 1:34-40, 1:50-53. Moreover, because these "conventional multi-zone audio system[s]" were "either hard-wired or controlled by a pre-configured and pre-programmed controller," it was "difficult for [a conventional] system to accommodate the requirement of dynamically managing the ad hoc creation and deletion of

groups," among other disadvantages of conventional multi-zone audio systems. *See, e.g.*, *id.* at 1:50-2:4.

84. In this regard, the '014 Patent recognized a need for solutions that addressed "the control of [ ] audio players as a group …." *See, e.g.*, *id.* at 2:5-10. In particular, the '014 Patent 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" *See, e.g.*, *id.* at 2:11-13. The claimed inventions of the '014 Patent are directed to technology that provides a solution to such needs. *See, e.g.*, *id.* at 2:28-3:34.

The Inventions Claimed in U.S. Patent No. 7,571,014 Improved Technology & Were Not Well-Understood, Routine, or Conventional

85. Given the state of the art at the time of the inventions of the '014 Patent, including the deficiencies in "centralized," "hard-wired" multi-zone audio systems of the time, the inventive concepts of the '014 Patent are not conventional, well-understood, or routine. *See, e.g.*, '014 Patent at 1:34-2:10. The '014 Patent provides an unconventional solution to problems that arose in the context of "centralized," "hard-wired" multi-zone audio systems – namely, that such systems made it difficult (or impossible) to dynamically group audio players for synchronous playback and dynamically control such grouped audio players. *See, e.g.*, *id*.

86. At the core of the '014 Patent are aspects of Sonos's unconventional system architecture – a "controller" and a plurality of "players" (*e.g.*, "zone players") communicating over a "local area network" (LAN). Further, unlike the "pre-configured and pre-programmed controller[s]" used to control conventional "centralized," "hard-wired" multi-zone audio systems, the '014 Patent's "controller" devices were unconventionally capable of controlling any "zone player" in the system from anywhere in a user's house or business via the LAN, such as by dynamically "grouping the zone players" and "control[ling] the volume of each of the zone players

in a zone group individually or together." *See, e.g.*, *id*. at 7:25-43.

87. In this respect, it was not well-understood, routine, or conventional at the time of the inventions of the '014 Patent to have a "controller" configured to (i) form a "zone group" that includes a plurality of "players," where one of the players serves as a "zone group head," and (ii) "synchroniz[e] all players in the zone group in accordance with the zone group head." *See, e.g.*, *id*. at Claims 1, 25; *see also, e.g.*, Ex. 6 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music … on the fly.").

88. Furthermore, it was not well-understood, routine, or conventional at the time of the inventions of the '014 Patent to have a "controller" configured to (i) display 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," and (ii) adjust one of the volume meters "for the group of players" that is "represented by an averaged value of audio volumes of the players in the group," which involves "changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user." '014 Patent at Claims 1, 25, 38; *see also, e.g.*, Ex. 6 (*2005 PC Mag:* "Press the volume-down button, then slide the scroll wheel to select each room and set the volume for it. Once you're back to using the master volume control, the volume rises or falls relative to each room's existing setting. These are [] brilliant touches ….").

89. These are just exemplary reasons why the inventions claimed in the '014 Patent were not well-understood, routine, or conventional at the time of their invention.

90. The unconventional nature of the '014 Patent has also been confirmed by wide-

spread industry praise for the patented technology of the '014 Patent as an advancement in the field of home audio, as set forth below.

91. Notably, this District held that the claimed inventions of the '014 Patent are "patent-eligible subject matter under § 101." *See* Ex. 34 at p. 13. In particular, this District recognized that the claimed inventions of the '014 Patent "represent[] a substantial improvement over the existing technology" that "provides for capabilities far beyond what a traditional hardwired system offers." *Id.* at p. 12.

92. This District also recognized that the '014 Patent's solutions cannot be performed solely by a human. *See, e.g.*, *id.* at p. 11 ("Defendants do not explain how a human could manually accomplish this feat. Nor could they."). Indeed, the '014 Patent's claimed solutions are not merely drawn to longstanding human activities at least because they address problems rooted in multi-zone audio systems. *See, e.g.*, *id.* at p. 12 ("This is not simply a 'more efficient' method of doing something already done by humans.").

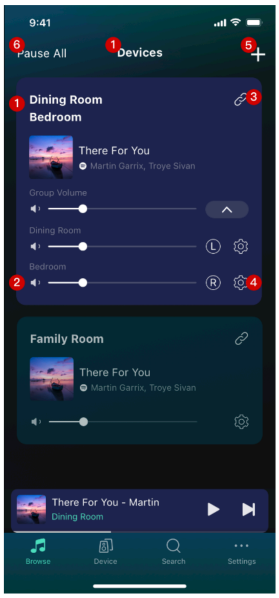
93. Moreover, the innovative and unconventional nature of the '014 Patent was confirmed by the validity findings in the D&M Litigation (*see* Ex. 30) and the '014 Patent reexamination proceeding (*see* Ex. 1).

The Inventions Claimed in U.S. Patent No. 7,571,014 Provide Important Advantages to Multi-Room Audio Systems

94. The group volume control technology of the '014 Patent provides significant advantages that are important to multi-room audio systems. The advantages of Sonos's group volume control technology are reflected in the recognition and praise it has received from the press. For example, shortly after Sonos launched its first commercial product in 2005, *PC Magazine* exclaimed: "[Sonos] is the first digital audio hub we can recommend without reservation …. Once you're back to using the master volume control, the volume rises or falls relative to each room's

existing setting. These are the brilliant touches ….” *See* Ex. 6. As another example, in 2005, *Playlist* lauded Sonos’s “Controller” for its “stand[] out” interface that enables dynamic grouping of Sonos players and volume control. *See* Ex. 35. Likewise, in 2008, *Gizmodo* praised Sonos for the ability to “[c]hange the volume in a single room, or in all your rooms at once, all from the Sonos Controller.” *See* Ex. 36. A few years later, in 2012, *Pocket-lint* touted Sonos’s patented group volume technology as “simple but clever.” *See* Ex. 37.

95. Recognizing the advantages of Sonos’s patented group volume control technology, competitors in the industry, including Linkplay, have incorporated Sonos’s technology into their products and marketed to their customers the features that the technology enables. For example, Linkplay’s “WiiM Home App User Guide” explains that users can “[c]ontrol the [WiiM] devices as a group on the Devices page” shown below:



DEVICES PAGE

See all your devices and control volume and grouping.

1. Device name - Customize or use preset device name
2. Volume control - Control volume for speakers connected to WiiM
3. Group devices together (see more below in 2A)
4. Device Settings (see more below in 2B)
5. Setup another WiiM device with your WiiM Home app
6. Play All - Play all the devices on the Devices page
7. Mini navigation bar - Displays the active device and song/station played

Ex. 38 at p. 9.

U.S. Patent No. 9,164,532

96. Sonos is the owner U.S. Patent No. 9,164,532 (the “‘532 Patent”), entitled “Method

and Apparatus for Displaying Zones in a Multi-Zone System," which was duly and legally issued by the USPTO on October 20, 2015. A copy of the '532 Patent is attached hereto as Exhibit 2.

97. The '532 Patent relates generally to devices, systems, and methods for synchronizing audio playback among a group of "zone players."

98. As discussed above, Sonos recognized problems with conventional multi-zone audio systems and introduced a paradigm-shifting system architecture comprising "zone players" that communicated over a data network. The unconventional nature of Sonos's "zone players" introduced additional technological challenges to Sonos's system. *See, e.g.*, '532 Patent at 1:44-2:25.

99. For instance, the '532 Patent recognized the technological challenge of "ensur[ing] that, if two or more audio playback devices are contemporaneously attempting to play back the same audio program, they do so simultaneously." *Id*. at 2:6-25. In this respect, the '532 Patent recognized that "audio playback devices that are being developed have independent clocks, and, if they are not clocking at precisely the same rate, the audio playback provided by the various [playback] devices can get out of synchronization." *Id.* at 2:21-25. Moreover, the '532 Patent recognized that "differences in the audio playback devices' start times and/or playback speeds" "can arise . . . for a number of reasons, including delays in the transfer of audio information over the network," and that "[s]uch delays can differ as among the various audio playback devices for a variety of reasons, including where they are connected into the network, message traffic, and other reasons …." *Id.* at 2:9-17. Consequently, the '532 Patent recognized that "[s]mall differences in the audio playback devices' start times and/or playback speeds can be perceived by a listener as an echo effect, and larger differences can be very annoying." *Id*. at 2:9-11.

100. In this regard, the '532 Patent recognized a need for "a new and improved system

and method for synchronizing operations among a number of digital data processing devices that are regulated by independent clocking devices." *See, e.g.*, *id*. at 2:29-32. The claimed inventions of the '532 Patent are directed to technology that provides a solution to such needs. *See, e.g.*, *id.*

The Inventions Claimed in U.S. Patent No. 9,164,532 Improved Technology & Were Not Well-Understood, Routine, or Conventional

101. Given the state of the art at the time of the inventions of the '532 Patent, including the deficiencies in centralized, hard-wired multi-zone audio systems of the time, the inventive concepts of the '532 Patent are not conventional, well-understood, or routine. *See, e.g.*, '532 Patent at 1:44-2:25. The '532 Patent provides an unconventional solution to problems that arose in Sonos's unconventional system architecture comprising "zone players" that communicated over a data network – namely, that such "zone players" have "independent clocks" which makes ensuring synchronized audio playback difficult. *See, e.g.*, *id.* at 2:6-25.

102. At the core of the '532 Patent are aspects of Sonos's unconventional system architecture – "zone players" and at least one "controller" communicating over a "local area network." Each "zone player" was unconventionally equipped with a data network interface and intelligence enabling the "zone player" to independently access and play back audio from a variety of network-accessible audio sources and dynamically enter a "group" with one or more other "zone players" for synchronized audio playback based on an instruction from a "controller." *See, e.g.*, *id.* at FIG. 1, 3:38-50, 4:11-39, 4:66-6:54, Claims 1, 10, 22, 34. While "grouped," the "zone players" were unconventionally capable of sharing particular information over a data network to facilitate "reproduc[ing] audio information synchronously" despite the fact that the "zone players operate with independent clocks" and exchange packets over a data network with "differing delays." *Id*. at 31:21-28.

103. In this respect, it was not well-understood, routine, or conventional at the time of

the invention of the '532 Patent to have a "controller" configured to interface with a LAN and facilitate the formation of a synchrony group comprising a plurality of "zone players." *See, e.g.*, *id*. at Claims 1, 10, 22, 34; *see also, e.g.*, Ex. 6 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music . . . on the fly.").

104. Moreover, it was not well-understood, routine, or conventional at the time of the inventions of the '532 Patent to have a "controller" facilitate the formation of a synchrony group comprising a plurality of "zone players" in which the "zone players" are configured to playback audio in synchrony based at least on (i) "audio content," (ii) "playback timing for the audio content," and (iii) "device clock information" for one of the "zone players." *See, e.g.*, *id*. at Claims 1, 10, 22, 34; *see also, e.g.*, Ex. 7 (*2013 NBC News*: "[Sonos] revolutionized the home audio world a decade ago …. If you wanted the same song in every room, no problem, the tracks would be perfectly in sync …. At the time, this was mind blowing. Never before could you get music in every room without drilling a bunch of holes for wires ….").

105. These are just exemplary reasons why the inventions claimed in the '532 Patent were not well-understood, routine, or conventional at the time of their invention.

106. The unconventional nature of the '532 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '532 Patent as an advancement in the field of home audio, as set forth below.

107. Notably, the Patent Trial and Appeal Board ("PTAB") found that inventions claimed in the '357 Patent – which cover similar subject matter as the inventions claimed in the '532 Patent – would not have been obvious at the time of their invention. *See* Ex. 39 at pp. 6-7.

This confirms that the '532 Patent is directed not just to unconventional implementations but to truly innovative audio technology.

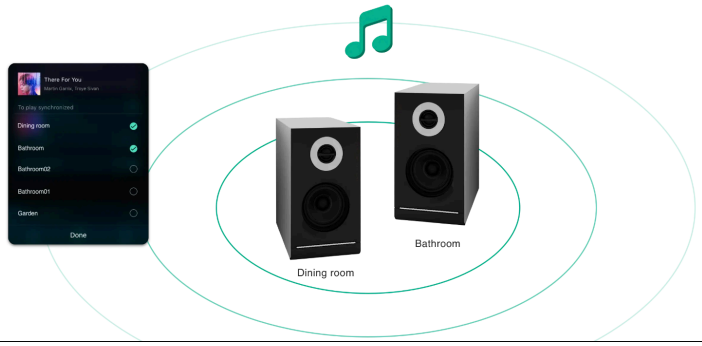
The Inventions Claimed in U.S. Patent No. 9,164,532 Provide Important Advantages to Multi-Room Audio Systems

108. The grouping and synchronization technology of the '532 Patent provides significant advantages that are important to multi-room audio systems. The advantages of Sonos's patented grouping and synchronization technology are reflected in the recognition and praise it has received from the press. For example, in 2005, shortly after Sonos released its first commercial products, *PC Magazine* touted the Sonos system for its ability to "play the same music throughout the house, perfectly synchronized." *See* Ex. 6. Similarly, in 2005, *The Wall Street Journal* praised Sonos's system for the ability to "play . . . the same songs, in each room simultaneously." *See* Ex. 37. As another example, in 2013, *Macworld* exclaimed: "Sonos is the gold standard when it comes to multi-room audio . . . you can drive the system from any computer or handheld device, playing music in sync throughout the house …." *See* Ex. 40. Likewise, in 2013, *NBC News* praised Sonos's patented synchronization technology as "mind blowing." *See* Ex. 7 ("If you're not familiar with Sonos, this company revolutionized the home audio world a decade ago when it launched the first (rather expensive) Sonos kits …. If you wanted the same song in every room, no problem, the tracks would be perfectly in sync . . . . At the time, this was mind blowing. Never before could you get music in every room without drilling a bunch of holes for wires ….").

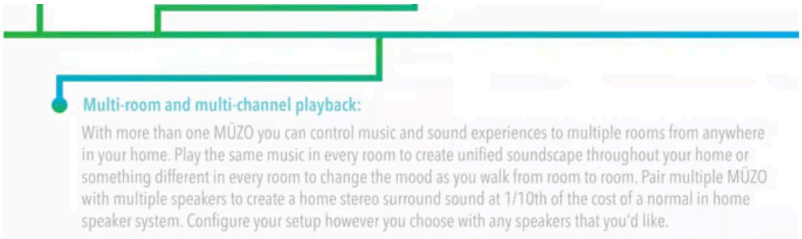
109. Recognizing the advantages of Sonos's patented grouping and synchronization technology, other competitors in the industry, including Linkplay, have incorporated Sonos's patented technology into their products and marketed the features that the technology enables to their customers. For example, in its marketing materials, Linkplay advertises that the WiiM System can "[s]ynchronize audio with multi-room audio ….":

Synchronize audio with multi-room audio or stereo pairing

Want a whole-house sound system without any wires? No problem.
Connect your device to our WiiM devices and create **a synchronized audio experience**



Ex. 18. As another example, Linkplay advertised that the Muzo System "supports synchronized multi-room play" enabling a user to "[p]lay the same music in every room to create unified soundscape throughout your home ….":



Ex. 89.

U.S. Patent No. 9,213,357

110. Sonos is the owner of U.S. Patent No. 9,213,357, entitled "Obtaining Content from Remote Source for Playback," which was duly and legally issued by the USPTO on December 15, 2015. A Reexamination Certificate for the '357 Patent was duly and legally issued by the USPTO on October 4, 2019. A copy of the '357 Patent, including the Reexamination Certificate, is attached hereto as Exhibit 3.

111. The '357 Patent and '532 Patent share a common specification and ultimate priority

claim.

112. The '357 Patent is directed to devices, methods, and computer-readable media for synchronizing audio playback.

113. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 96-109 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 9,213,357 Improved Technology & Were Not Well-Understood, Routine, or Conventional

114. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 96-109 of this Second Amended Complaint as if fully set forth herein.

115. Like the inventions claimed in the '532 Patent, the inventions claimed in the '357 Patent improved technology and were not well-understood, routine, or conventional.

116. Indeed, it was not well-understood, routine, or conventional at the time of the invention of the '357 Patent to have a "playback device" (i.e., "zone player") that functions to (i) transmit, to one or more other "playback device[s]" in a synchrony group over a local area network (LAN), "audio information, playback timing information associated with the audio information, and device clock information," and (ii) play back the audio information in synchrony with the one or more other "playback device[s]" in the synchrony group using the playback timing information and device clock information. *See, e.g.*, '953 Patent at Claims 1, 9; *see also, e.g.*, Ex. 6 (*2005 PC Mag:* "[Sonos's ZonePlayers] can play the same music throughout the house, perfectly synchronized. Even though that may seem drop-dead simple, other hubs don't do it. And you can join multiple rooms to play the same music … on the fly."); Ex. 7 (*2013 NBC News*: "[Sonos] revolutionized the home audio world a decade ago.… If you wanted the same song in every room, no problem, the tracks would be perfectly in sync.… At the time, this was mind blowing. Never before could you get music in every room without drilling a bunch of holes for wires ….").

117. These are just exemplary reasons why the inventions claimed in the '357 Patent were not well-understood, routine, or conventional at the time of their invention.

118. As with the '532 Patent, the unconventional nature of the '357 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '357 Patent as an advancement in the field of home audio.

The Inventions Claimed in U.S. Patent No. 9,213,357 Provide Important Advantages to Multi-Room Audio Systems

119. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 96-109 of this Second Amended Complaint as if fully set forth herein.

120. As with the '532 Patent, the synchronization technology of the '357 Patent provides significant advantages that are important to multi-room audio systems, as reflected in the recognition and praise it has received from the press/media and competitors in the industry.

U.S. Patent No. 10,541,883

121. Sonos is the owner of U.S. Patent No. 10,541,883, entitled "Playback Device Connection," which was duly and legally issued by the USPTO on January 21, 2020. A copy of the '883 Patent is attached hereto as Exhibit 4.

122. The '883 Patent relates generally to devices, methods, and computer-readable media for connecting a "zone player" (or "playback device") to a secure wireless local area network (WLAN), thereby setting up the zone player for use in a networked audio system.

123. The '883 Patent recognized problems with conventional device-setup technology for connecting "consumer electronic devices" (*e.g.*, "home entertainment products") to a network. *See, e.g.*, '883 Patent at 1:37-67. For instance, the '883 Patent recognized that "[c]onsumer electronic devices that operate using wireless or wired Ethernet standards are often subject to the same complicated set-up process as a wireless computer network." *Id*. at 1:37-39.

124. Indeed, a conventional setup process typically required "the person who sets up the wireless network [to] have at least some knowledge about IP (Internet Protocol) networking and Ethernet (*e.g.*, 802.3, 802.11), such as addressing, security, broadcast, unicast, etc." *Id*. at 1:40-43. At the time of the inventions of the '883 Patent, typically only "IT professionals" possessed such knowledge. *Id*. at 1:43-46. In this respect, to connect a computer to a wireless network, "the user [had] to know what type of network the computer [was] going to be connected to," which was a "difficult question [for] the average consumers" to answer. *Id*. at 1:57-63. Moreover, there were additional "questions or options related to [] security settings [] which evidently require[d] some good understanding about the network security over the wireless network." *Id*. at 1:63-67. Thus, the '883 Patent recognized that it was "impractical to require average consumers to have such knowledge to hook up consumer electronic devices, such as home entertainment products that use wireless/wired Ethernet connectivity." *Id*. at 1:46-49.

125. The '883 Patent also recognized that a device that has yet to be setup on a network has "limited networking capability" and is not addressable by other devices, which presents technical challenges as to how that device can receive information that facilitates the device's setup to operate on the network. *See, e.g.*, *id*. at 11:4-14.

126. Consequently, the '883 Patent recognized that there was "a clear need to create simple methods of setting up and maintaining a secure wireless/wired in-home network with minimum human interventions." *Id*. at 2:1-4. The claimed inventions of the '883 Patent are directed to technology that provides a solution to such needs.

<u>The Inventions Claimed in U.S. Patent No. 10,541,883 Improved Technology & Were Not Well-Understood, Routine, or Conventional</u>

127. Given the state of the art at the time of the inventions of the '883 Patent, including the deficiencies in conventional device-setup technology of the time, the inventive concepts of the

'883 Patent are not conventional, well-understood, or routine. *See, e.g.*, '883 Patent at 1:37-2:4. The '883 Patent provides an unconventional solution to problems arising in the context of connecting "consumer electronic devices" (*e.g.*, "home entertainment products") to a network – namely, that such devices, prior to being setup, had limited networking capabilities and were not network addressable by other devices and typically operated "using wireless or wired Ethernet standards [that were] often subject to the same complicated set-up process as a wireless computer network." *Id*. at 1:37-2:4, 11:4-14.

128. In this respect, the '883 Patent provided a technological solution that addressed the limited-networking-capability and addressability problems with existing setup technologies. *See, e.g.*, *id*. at 11:4-36. Moreover, unlike conventional device-setup technology whose complexity made it "impractical" for "average consumers to . . . hook up consumer electronic devices" to a requisite data network, the '883 Patent provided a technological solution that made it easier for consumers to connect a consumer electronic device to a data network. *See, e.g.*, *id.* at 1:37-67.

129. In this regard, it was not well-understood, routine, or conventional at the time of the invention of the '883 Patent to have a "playback device" to enter a setup mode and exchange messages with a "computing device" that facilitates setting up the "playback device" to operate on a secure wireless local area network (WLAN). *See, e.g.*, *id.* at Claims 1, 14, 20.

130. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '883 Patent to have a "playback device" configured to (i) receive a response to a first message that facilitates establishing with a "computing device" an "initial communication path" that does not traverse an access point defining a secure WLAN, (ii) receive "network configuration parameters" for the secure WLAN from the "computing device" via the "initial communication path," and (iii) transition from communicating with the "computing device" via

the "initial communication path" to communicating with the "computing device" via the secure WLAN. *See, e.g.*, *id.* at Claims 1, 14, 20; *see also, e.g.*, *id.* at 11:4-37.

131. These are just exemplary reasons why the inventions claimed in the '883 Patent were not well-understood, routine, or conventional at the time of their invention.

132. The unconventional nature of the '883 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '883 Patent as an advancement in the field of home audio, as set forth below.

133. Moreover, the '883 Patent's solutions are naturally rooted in consumer device-setup technology and cannot be performed solely by a human. Indeed, the '883 Patent's claimed solutions provide a device-setup process comprising functions not previously performed by humans and therefore, are not merely drawn to longstanding human activities.

The Inventions Claimed in U.S. Patent No. 10,541,883 Provide Important Advantages to Multi-Room Audio Systems

134. The playback-device-setup technology of the '883 Patent provides significant advantages that are important to multi-room audio systems. The advantages of Sonos's patented playback-device-setup technology are reflected in the recognition and praise it has received from the press. For example, in 2015, *Ars Technica* explained:

> There was no convoluted wireless setup, syncing issues, or complex software to decipher: I simply downloaded the Sonos app on the Google Play Store, pushed the sync button on the back of the speaker, and it did the rest. When you can describe the entire setup procedure in a single sentence, that's special.

Ex. 41. Likewise, *Gizmodo* touted Sonos's patented playback-device-setup technology as "so easy that anybody can do it." Ex. 42. And *Consumer Reports* explained that Sonos's technology makes playback-device-setup "pretty simple." Ex. 43.

135. Recognizing the advantages of Sonos's patented playback-device-setup

technology, competitors in the industry, including Linkplay, have incorporated Sonos's patented technology into their products and marketed the features that the technology enables to their customers. For example, in marketing the WiiM System, Linkplay explains that its WiiM players are "[s]uper easy [to] setup." Exs. 25, 44.

U.S. Patent No. 10,853,023

136. Sonos is the owner of U.S. Patent No. 10,853,023 (the "'023 Patent"), entitled "Networked Playback Device," which was duly and legally issued by the USPTO on December 1, 2020. A copy of the '023 Patent is attached hereto as Exhibit 5.

137. The '023 Patent is directed to devices, methods, and computer-readable media for smart line-in processing.

138. The '023 Patent recognized problems with existing technology for switching between sources of media content. In this regard, the '023 Patent recognized that existing multi-source media systems at the time of the inventions of the '023 Patent lacked intelligent source-switching technology and therefore, were cumbersome to use from a user's perspective. *See, e.g.,* '023 Patent at 2:37-56, 6:41-50, 7:13-29.

139. For instance, in order for an existing audio system to switch from playing audio from a first source to playing audio from a second source connected to the audio system by a line-in connector, a user would first instruct the second source to begin playing audio and then instruct the audio system to switch its input to the second source. *See, e.g.*, *id.* at 2:13-24, 6:41-50, 7:13-29. Moreover, in order for an existing audio system to then switch from playing audio from the second source provided to the audio system through the line-in connector to another source, a user would first need to instruct the second source to stop providing the audio system with audio through the line-in connector. *See, e.g., id.* at 2:62-3:6, 7:25-29.

140. The claimed inventions of the '023 Patent are directed to technology that improved upon these deficiencies of existing multi-source media systems.

The Inventions Claimed in U.S. Patent No. 10,853,023 Improved Technology & Were Not Well-Understood, Routine, or Conventional

141. Given the state of the art at the time of the inventions of the '023 Patent, including the deficiencies in existing technology for switching between sources of media content, the inventive concepts of the '023 Patent are not conventional, well-understood, or routine. *See, e.g.*, '023 Patent at 2:37-58, 7:13-29. Indeed, the '023 Patent provides an unconventional solution to problems that arose in multi-source media systems of the time – namely, that such systems were reliant on a user to perform specific sequences of operations in order for such systems to switch from playing one media source to another. *See, e.g., id*. at 2:38-52, 6:41-50, 7:13-24.

142. In this respect, the '023 Patent improved the technological capabilities of multi-source media systems by providing a solution for multi-source "playback devices" to intelligently switch between media sources based on specific criteria, thereby changing how multi-source media systems of the time previously operated to switch between media sources. *See, e.g., id*. at 2:42-56, 6:41-53, 7:13-24. For instance, instead of a media system relying on a user to first instruct a given source to begin playing audio and then receiving an instruction to switch the media system's input source to the given source, the claimed inventions of the '023 Patent allow a user to merely instruct a given line-in connected source to begin playing audio and the claimed "playback device" is equipped with technological capabilities to intelligently switch to that given source for playback. *See, e.g., id*; *see also, e.g.,* Claims 1, 8, 14.

143. In this regard, it was not well-understood, routine, or conventional at the time of the inventions of the '023 Patent to have a "playback device" configured to determine that it is receiving a first type of media content while playing a second type of media content. *See, e.g.*,

'023 Patent at Claim 1.

144. Likewise, it was not well-understood, routine, or conventional at the time of the inventions of the '023 Patent to have a "playback device" configured to, in response to determining that it is receiving a first type of media content via a line-in connector, (i) cease playback of a second type of media content being played by the "playback device" that is not present at the line-in connector and (ii) cause the "playback device" to play the first type of media content. *See, e.g.*, '023 Patent at Claim 1.

145. Further, it was not well-understood, routine, or conventional at the time of the inventions of the '023 Patent to have a "playback device" configured to, in response to determining that it is receiving a first type of media content via a line-in connector, (i) cease playback of a second type of media content being played by the "playback device" that is not present at the line-in connector and (ii) cause the "playback device" to play the first type of media content. *See, e.g.*, '023 Patent at Claim 1.

146. Further still, it was not well-understood, routine, or conventional at the time of the inventions of the '023 Patent to have a "playback device" configured to (i) determine that it is no longer receiving the first type of media content via the line-in connector, and (ii) in response, rearm itself such that a subsequent presence of the first type of media content via the line-in connector causes the "playback device" to play the first type of media content (and thereby preempts playback of the second type of media content). *See, e.g.*, *id.*

147. These are just exemplary reasons why the inventions claimed in the '023 Patent were not well-understood, routine, or conventional at the time of their invention.

148. The unconventional nature of the '023 Patent has also been confirmed by wide-spread industry praise for the patented technology of the '023 Patent as an advancement in the

field of home audio, as set forth below.

The Inventions Claimed in U.S. Patent No. 10,853,023 Provide Important Advantages to Multi-Room Audio Systems

149. The smart line-in processing technology of the '023 Patent provides significant advantages that are important to multi-room audio systems. The advantages of Sonos's patented smart line-in processing technology are reflected in the recognition and praise it has received from the press. For example, in 2013, shortly after Sonos released its Playbar soundbar, *Mac Observer* praised Sonos's patented smart line-in processing technology as "automated magic" and explained that unlike the reviewer's "home theater system [that] would require [the reviewer] to power it on and then select the appropriate input," the Sonos Playbar "just works automatically, turning itself on and off when needed …." *See* Ex. 45. Likewise, in 2013, *Big Picture Big Sound* explained that the Sonos Playbar "keep[s] things as simple as possible" so that "if you're streaming music from Rhapsody, but then flip on the TV to watch a movie, the PlayBar automatically switches over to the TV input so you can enjoy sound that matches the picture." *See* Ex. 46. More recently, in 2017, *Pocket-lint* praised Sonos's patented smart line-in processing technology as "handy because it means you don't get that frustrating moment of 'Why isn't there any sound?'"; the reviewer went on to explain that "[i]n the time we've been using the PlayBar, the [automatic] handshake has worked perfectly every time." *See* Ex. 47.

150. Recognizing the advantages of Sonos's patented smart line-in processing technology, competitors in the industry, including Linkplay, have incorporated Sonos's patented technology into their products and marketed the features that the technology enables to their customers. For example, Linkplay's website explains that its "[a]uto-sensing" feature enables a WiiM player to "automatically play audio from the connected input as soon as a signal is detected, regardless of the device's current state or standby mode." Ex. 48; *see also, e.g.,* Exs. 49-50.

U.S. Patent No. 10,146,498

151. Sonos is the owner of U.S. Patent No. 10,146,498 (the "'498 Patent"), entitled "Disengaging and Engaging Zone Players," which was duly and legally issued by the USPTO on December 4, 2018. A copy of the '498 Patent is attached hereto as Exhibit 106.

152. The '498 Patent and '357 and '532 Patents share a common specification and ultimate priority claim.

153. The '498 Patent relates generally to systems for disengaging a zone player from one synchrony group and engaging the zone player with another synchrony group.

154. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 96-120 of this Second Amended Complaint as if fully set forth herein.

The Inventions Claimed in U.S. Patent No. 10,146,498 Improved Technology & Were Not Well-Understood, Routine, or Conventional

155. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 96-120 of this Second Amended Complaint as if fully set forth herein.

156. Like the inventions claimed in the '532 and '357 Patents, the inventions claimed in the '498 Patent improved technology and were not well-understood, routine, or conventional. In this respect, the '498 Patent provides an unconventional solution to problems that arose in Sonos's unconventional system architecture comprising "zone players" – namely, how to allow for a "zone player" to not be fixed to a single, particular synchrony group. *See, e.g.*, '498 Patent at 6:19-41, 32:16-18.

157. Indeed, it was not well-understood, routine, or conventional at the time of the invention of the '498 Patent to have a first "zone player" that functions to (i) join a first synchrony group including itself and a second "zone player" and (ii) provide device clock timing information to the second "zone player" while the first "zone player" is in the first synchrony group. *See, e.g.*,

'498 Patent at Claims 1, 8, 15.

158. Further, it was not well-understood, routine, or conventional at the time of the invention of the '498 Patent to have a first "zone player" that functions to play audio information in synchrony with a second "zone player" while the first "zone player" is in the first synchrony group, where all "zone players" in the first synchrony group playback the audio information using device clock timing information for the first "zone player." *See, e.g.*, '498 Patent at Claims 1, 8, 15.

159. Furthermore, it was not well-understood, routine, or conventional at the time of the invention of the '498 Patent to have a first "zone player" that functions to receive from a controller device over a data network control information that includes an identification of a third "zone player" and that directs the first "zone player" to (i) disengage from the first synchrony group, (ii) join a second synchrony group with the third "zone player," and (iii) receive audio information from the third "zone player" for playback in synchrony with that other "zone player." *See, e.g.*, '498 Patent at Claims 1, 8, 15.

160. Furthermore, it was not well-understood, routine, or conventional at the time of the invention of the '498 Patent to have a first "zone player" that functions to, after receiving the aforementioned control information, (i) disengage from the first synchrony group, (ii) join the second synchrony group, (iii) receive audio information from the third "zone player," and (iv) play the received audio information in synchrony with the third "zone player." *See, e.g.*, '498 Patent at Claims 1, 8, 15.

161. These are just exemplary reasons why the inventions claimed in the '498 Patent were not well-understood, routine, or conventional at the time of their invention.

162. As with the '532 and '357 Patents, the unconventional nature of the '498 Patent has

also been confirmed by wide-spread industry praise for the patented technology of the '498 Patent as an advancement in the field of home audio.

The Inventions Claimed in U.S. Patent No. 10,146,498 Provide Important Advantages to Multi-Room Audio Systems

163. Sonos incorporates by reference and re-alleges the foregoing paragraph numbers 96-120 of this Second Amended Complaint as if fully set forth herein.

164. As with the '532 and '357 Patents, the patented technology of the '498 Patent provides significant advantages that are important to multi-room audio systems, as reflected in the recognition and praise it has received from the press/media and competitors in the industry.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,571,014

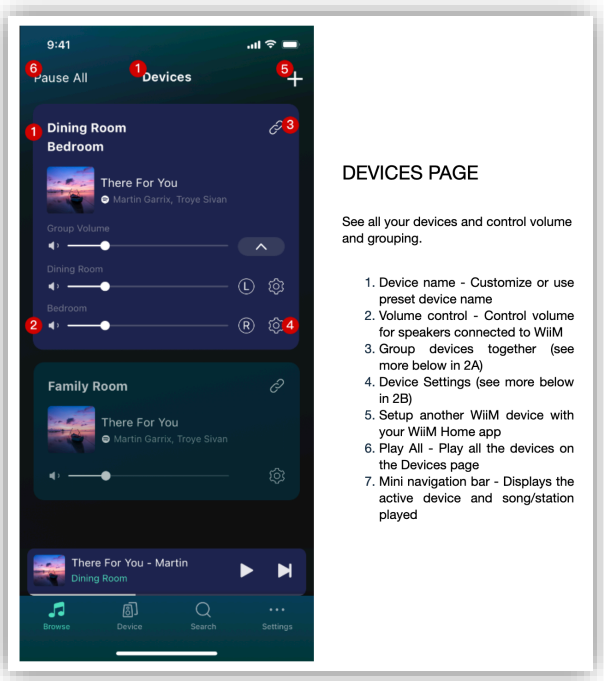
165. Sonos incorporates by reference and re-alleges paragraphs 1-164 of this Second Amended Complaint as if fully set forth herein.

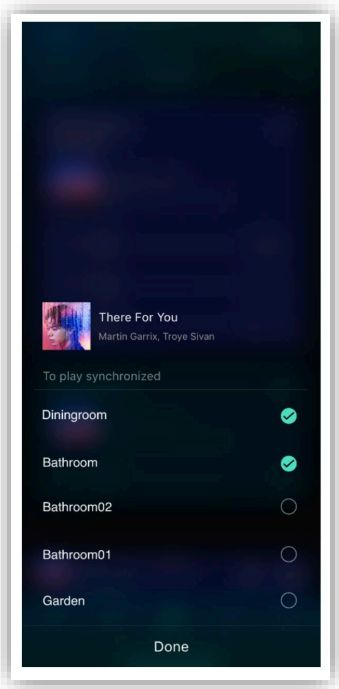
166. Linkplay, Origin Acoustics, and/or users of the WiiM System and/or devices provisioned with a Linkplay module have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '014 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the WiiM System and/or devices provisioned with a Linkplay module within the United States and/or importing the WiiM System and/or devices provisioned with a Linkplay module into the United States without authority or license.

167. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 25 of the '014 Patent in connection with the WiiM System and/or Linkplay modules. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the WiiM System and/or Linkplay modules that it obtains during discovery. Sonos also incorporates by reference its

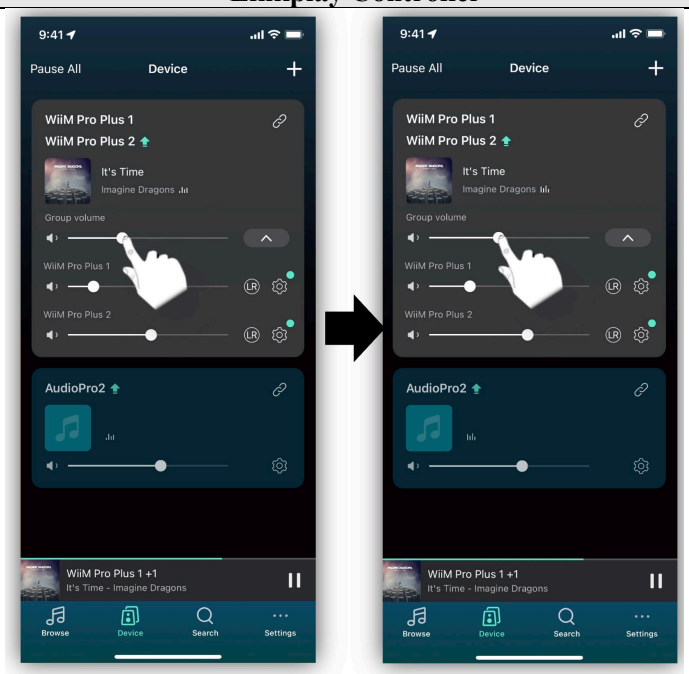
Infringement Contentions and Identification of Accused Products and Asserted Patents.

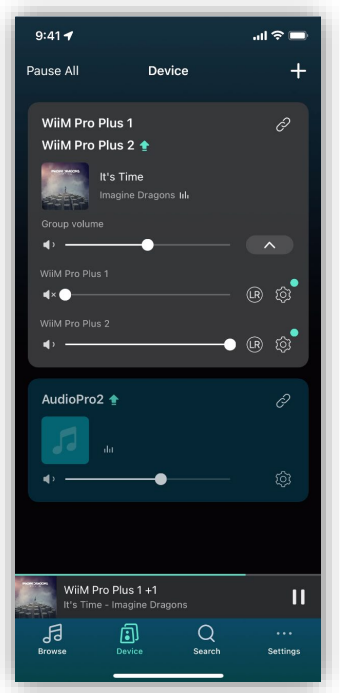
Claim 25	Linkplay Controller
[25.0] An apparatus for controlling a plurality of players, the apparatus comprising:	Linkplay offers a wide range of audio playback devices, including at least the WiiM product line comprised of a number of WiiM players, including the WiiM Amp, WiiM Pro, WiiM Pro Plus, WiiM Wake-up Light, and WiiM Mini. *See, e.g.*, Exs. 25, 44, 51-52. On information and belief, each device provisioned with a Linkplay module contains the same (or substantially similar) relevant functionality as the aforementioned WiiM players. For purposes of this chart, the foregoing devices will be referred to as "Linkplay players." Linkplay also offers apps that can be installed onto user devices, such as smartphones, tablets, and other computers, and utilized to control at least Linkplay players. *See, e.g.*, Ex. 18. For example, Linkplay offers the WiiM Home app, which can be installed onto user devices and utilized to control at least the WiiM players. *See, e.g., id.* As another example, Linkplay provides a "companion app" that "includes streaming content integration, custom controls, and user interface" that third parties can customize for purposes of controlling at least Linkplay players. *See, e.g.*, Exs. 97, 104. For purposes of this chart, each user device installed with the WiiM Home app and/or app derived from Linkplay's "companion app" for controlling a Linkplay player will be referred to as a "Linkplay controller." As described in further detail below, each Linkplay controller is an "apparatus for controlling a plurality of players," as recited in claim 25, and each Linkplay player is a "player," as recited in claim 25.
[25.1] a screen;	Each Linkplay controller comprises a screen. *See, e.g.,* Exs. 18, 53-59.
[25.2] a screen driver commanding the screen;	Each Linkplay controller comprises a screen driver commanding the screen. *See, e.g.,* Exs. 18, 53-59.
[25.3] an input interface;	Each Linkplay controller comprises an input interface, such as a touch screen, volume buttons, etc. *See, e.g.,* Exs. 18, 53-59.
[25.4] a network interface;	Each Linkplay controller comprises a network interface, such as a WiFi interface. *See, e.g.,* Exs. 18, 53-59.
[25.5] a memory for storing code for an application module;	Each Linkplay controller comprises a memory for storing code for an application module. *See, e.g.,* Exs. 18, 53-59.
[25.6] a processor coupled to the memory, the input interface, the	Each Linkplay controller comprises a processor coupled to the memory, the input interface, the screen driver and the

Claim 25	Linkplay Controller
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:	network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform the operations identified below. *See, e.g.,* Exs. 18, 53-59.
[25.7] displaying on a screen a first list showing at least available players;	Each Linkplay controller includes code in memory to cause the application module and the screen driver to display on a screen a first list showing at least available Linkplay players. *See, e.g.,* Ex. 18; Ex. 38 at pp. 9-10: 

Claim 25	Linkplay Controller
	
[25.8] 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;	Each Linkplay controller includes code in memory to cause the application module and the screen driver to display a zone group including Linkplay players from the available Linkplay players when at least two of the available Linkplay players are selected to form the zone group, wherein any one of the Linkplay players in the group serves as a zone group head. For instance, each Linkplay player is programmed such that the Linkplay player can be selected to form a "group" of two or more Linkplay players that are configured to play back audio in synchrony. *See, e.g.*, Exs. 18, 38. In such a group, one of the Linkplay players will be designated to serve as the "master" of the group and every other Linkplay player in the group will be designated to serve as a "slave" of the group. *See, e.g.,* Exs. 60-62. In turn, each Linkplay controller is programmed such that, after two or more Linkplay players have been selected to form a group, the Linkplay controller functions to display a visual representation of the group at various times – including in response to a user request to access a UI view that includes a listing of groups (e.g., the "Devices Page")

Claim 25	Linkplay Controller
	or a UI view that provides information about the particular group. *See, e.g.,* Exs. 18, 38. An example of this functionality is illustrated above. *See* limitation 25.7.
[25.9] synchronizing all players in the zone group in accordance with the zone group head; and	Each Linkplay controller includes code in memory to cause the application module and the screen driver to synchronize all Linkplay players in a zone group in accordance with the zone group head. For instance, each Linkplay controller is programmed with the capability to cause Linkplay players in a group to engage in synchronous playback of audio content in accordance with the "master" of the group, which transmits information to each "slave" Linkplay player in the group that facilitates the synchronous playback of the audio content. *See, e.g.*, Exs. 18, 38, 60-62
[25.10] 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.	Each Linkplay controller includes code in memory to cause the application module and the screen driver to adjust a volume meter represented by an averaged value of audio volumes of Linkplay players in a group, wherein said adjusting of the volume meter includes changing a volume of each of the group of Linkplay players synchronously in accordance with an adjustment made by a user. For instance, each Linkplay controller is programmed with the capability to display a volume meter representing a "group volume" for the Linkplay players in the group. This volume meter is represented by an averaged value of the individual volumes for the Linkplay players in the group. *See, e.g.,* Exs. 18, 38; *see also, e.g.,* screenshots below. In response to user input, each Linkplay controller is programmed with the capability to adjust the "group volume" for the Linkplay players in the group, which causes the individual volume for each Linkplay player in the group to be changed synchronously in accordance with the user input. An example of this functionality is illustrated in the following screenshots from a Linkplay controller:

Claim 25	Linkplay Controller
	 As further illustrated below, the "group volume" for the Linkplay players in the group is represented by an averaged value of the individual volumes for the Linkplay players in the group.

Claim 25	Linkplay Controller
	

168. Additionally and/or alternatively, Defendants have indirectly infringed and continue to indirectly infringe one or more of the claims of the '014 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the WiiM System and/or devices provisioned with a Linkplay module to directly infringe the one or more claims of the '014 Patent. For example, (a) Defendants had actual knowledge of the '014 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '014 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '014 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) Defendants intentionally cause, urge, or encourage users of the WiiM System to directly infringe one or more claims of the '014 Patent by

promoting, advertising, and instructing customers and potential customers about the WiiM System and uses of the system, including infringing uses (*see* Exs. 18, 38), and (c) Defendants know (or should know) that their actions will induce users of the WiiM System to directly infringe one or more claims the '014 Patent, and (d) users of the WiiM System directly infringe one or more claims of the '014 Patent. For instance, at a minimum, Defendants have supplied and continue to supply WiiM players to customers that require installation and use of the WiiM Home app to setup and control the WiiM players, while knowing that installation and use of the WiiM Home app on a user device will infringe one or more claims of the '014 Patent, and that Defendants' customers then directly infringe one or more claims of the '014 Patent by installing and using the WiiM Home app on a user device in accordance with Defendants' product literature about the WiiM System.

169. Additionally and/or alternatively, Linkplay has indirectly infringed and continues to indirectly infringe one or more of the claims of the '014 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the WiiM System and/or Linkplay modules that contribute to the direct infringement of the '014 Patent by users. For example, (a) Linkplay had actual knowledge of the '014 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), (b) Linkplay offers for sale, sell, and/or imports, in connection with the WiiM System, one or more material components of the invention of the '014 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Linkplay knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '014 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '014 Patent. For instance, at a minimum, Linkplay offers for sale, sells, and/or imports

software modules enabling group volume control via the WiiM Home app for installation on WiiM controllers that meet one or more claims of the '014 Patent. *See, e.g.*, Ex. 18. Such software modules are material components of the WiiM controllers that meet the one or more claims of the '014 Patent. Further, Linkplay especially made and/or adapted such software modules for use in the WiiM controllers that meet the one or more claims of the '014 Patent, and such software modules are not staple articles of commerce suitable for substantial noninfringing use. Indeed, there is no use for such software modules other than to, once installed onto WiiM controllers via the WiiM Home app, engage in group volume control functionality in a manner that infringes one or more claims of the '014 Patent. Linkplay's customers then directly infringe the one or more claims of the '014 Patent by installing and using the WiiM Home app, with the aforementioned software modules, on the WiiM controllers.

170. Defendants' infringement of the '014 Patent is also willful, as outlined above, because Defendants (a) had actual knowledge of the '014 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '014 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above)), (b) engaged in the aforementioned activity despite an objectively high likelihood that Defendants' actions constituted infringement of the '014 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Defendants.

171. Additional allegations regarding Defendants' pre-suit knowledge of the '014 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

172. Sonos is in compliance with any applicable marking and/or notice provisions of 35

U.S.C. § 287 with respect to the '014 Patent.

173. Sonos is entitled to recover from Defendants all damages that Sonos has sustained as a result of Defendants' infringement of the '014 Patent, including, without limitation, a reasonable royalty and lost profits.

174. Defendants' infringement of the '014 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

175. Defendants' infringement of the '014 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

176. Defendants' infringement of the '014 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 9,164,532

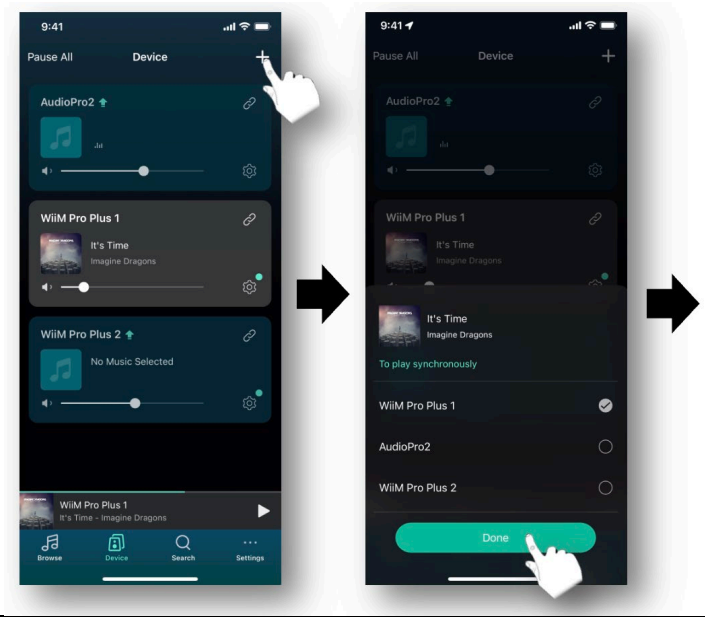
177. Sonos incorporates by reference and re-alleges paragraphs 1-176 of this Second Amended Complaint as if fully set forth herein.

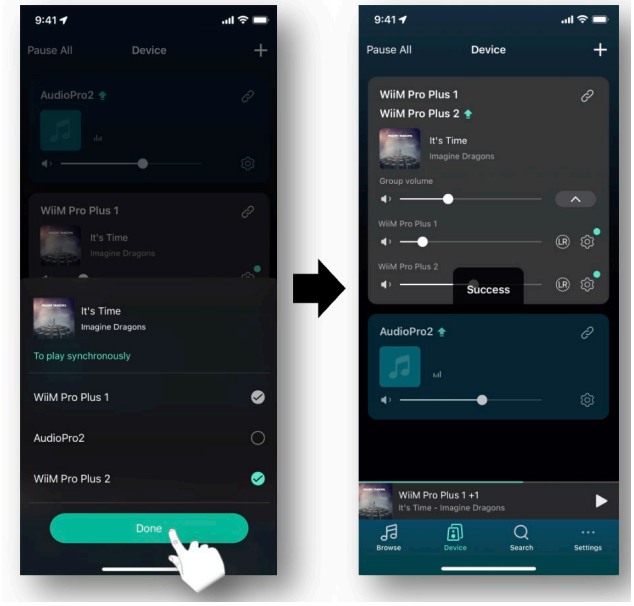
178. Linkplay, Origin Acoustics, and/or users of the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '532 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module within the United States and/or importing the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module into the United States without authority or license.

179. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 34 of the '532 Patent in connection with the Muzo System, the WiiM System, and/or Linkplay modules. This claim chart is based on publicly available information. Sonos

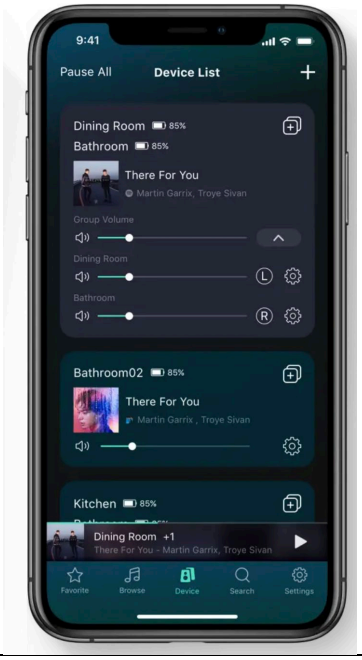
reserves the right to modify this claim chart, including, for example, on the basis of information about the Muzo System, the WiiM System, and/or Linkplay modules that it obtains during discovery. Sonos also incorporates by reference its Infringement Contentions and Identification of Accused Products and Asserted Patents.

Claim 34	Linkplay Controller
[34.0] A controller device comprising:	Linkplay offers a wide range of audio playback devices, including at least the WiiM product line comprised of a number of WiiM players, including the WiiM Amp, WiiM Pro, WiiM Pro Plus, WiiM Wake-up Light, and WiiM Mini. *See, e.g.*, Exs. 25, 44, 51-52. Linkplay also offered the Muzo Cobblestone player that, on information and belief, contained the same (or substantially similar) relevant functionality as the aforementioned WiiM players. *See, e.g.*, Ex. 89. On information and belief, each device provisioned with a Linkplay module contains the same (or substantially similar) relevant functionality as the aforementioned WiiM players. For purposes of this chart, the foregoing devices will be referred to as "Linkplay players." Linkplay also offers apps that can be installed onto user devices, such as smartphones, tablets, and other computers, and utilized to control at least the Linkplay players. *See, e.g.*, Ex. 18. For example, Linkplay offers the WiiM Home app, which can be installed onto user devices and utilized to control at least the WiiM players, and offered the Muzo app, which could be installed onto user devices and utilized to control at least the Cobblestone player. *See, e.g., id.*, Ex. 89. As another example, Linkplay provides a "companion app" that "includes streaming content integration, custom controls, and user interface" that third parties can customize for purposes of controlling at least Linkplay players. *See, e.g.*, Exs. 97, 104. For purposes of this chart, each user device installed with the WiiM Home app, Muzo app, and/or app derived from Linkplay's "companion app" for controlling a Linkplay player will be referred to as a "Linkplay controller." As described in further detail below, each Linkplay controller is a "controller," as recited in claim 34, and each Linkplay player is a "zone player," as recited in claim 34.

Claim 34	Linkplay Controller
[34.1] one or more processors; and	Each Linkplay controller includes one or more processors. *See*, *e.g.*, Exs. 18, 53-59.
[34.2] tangible, non-transitory, computer-readable memory comprising instructions that, when executed by the one or more processors, cause the controller device to perform a method comprising:	Each Linkplay controller includes tangible, non-transitory computer-readable memory comprising executable program instructions that enable the Linkplay controller to perform the functions identified below. *See*, *e.g.*, Exs. 18, 53-59.
[34.3] receiving a command at the controller device to form a synchrony group comprising a first zone player and a second zone player;	Each Linkplay controller comprises program instructions that, when executed by the Linkplay controller's one or more processors, cause that Linkplay controller to receive a command to form a synchrony group comprising a first Linkplay player and a second Linkplay player. For instance, each Linkplay controller is programmed with the capability to receive user input instructing the Linkplay controller to form a "group" of two or more Linkplay players that are configured to play back audio content in synchrony with one another. *See, e.g.*, Ex. 18; Ex. 38 at pp. 9-10. An example of this functionality is illustrated in the following screenshots: 

Claim 34	Linkplay Controller
	
[34.4] in response to receiving the command to form the synchrony group, configuring the synchrony group, wherein configuring the synchrony group comprises configuring, over a Local Area Network (LAN), the first zone player to (a) transmit audio content, playback timing for the audio content, and device clock information to the second zone player and (b) play back the audio content in synchrony with the second zone player according to the playback timing and the device clock information, wherein the first and second zone players remain independently clocked while playing the audio content in synchrony, and wherein the controller device is not a member of the synchrony group; and	Each Linkplay controller comprises program instructions that, when executed by the Linkplay controller's one or more processors, cause that Linkplay controller to, in response to receiving the command to form the synchrony group, configure the synchrony group, where configuring the synchrony group comprises configuring, over a LAN, the first Linkplay player to (a) transmit audio content, playback timing for the audio content, and device clock information to the second Linkplay player and (b) play back the audio content in synchrony with the second Linkplay player according to the playback timing and the device clock information, where the first and second Linkplay players remain independently clocked while playing the audio content in synchrony, and where the Linkplay controller is not a member of the synchrony group. For instance, each Linkplay controller is programmed such that, in response to receiving user input instructing the Linkplay controller to form a group of two or more Linkplay players that are configured to play back audio content in synchrony with one another, the Linkplay controller communicates with the first and/or second Linkplay player over a Wi-Fi network (which is a LAN) to cause the group to be configured. *See e.g.*, Ex. 18; Ex. 38. In such a group, one of the Linkplay players will be designated to serve as the "master" of the group, every other

Claim 34	Linkplay Controller
	Linkplay player will be designated to serve as a "slave" of the group, and the Linkplay controller will not be a member of the group. *See, e.g.,* Exs. 60-62. As part of configuring the group, the "master" Linkplay player begins operating in a mode in which it is configured to (i) transmit audio content, playback timing for the audio content, and device clock information of the "master" Linkplay player to each "slave" Linkplay player in the group via various types of data packets – including but not limited to 62-byte STUN packets and/or various encrypted TCP packets, and (ii) play back the audio content in synchrony each "slave" WiiM player in the group according to the playback timing and the device clock information. Further, while playing back in synchrony, each Linkplay player in the group continues to operate in accordance with its own respective clock. *See, e.g.*, Ex. 63 (WiiM employee discussing "compensat[ion] for the clock discrepancy between the sender and receiver, specifically allowing the receiver to align with the sender's clock."); Ex. 64 (WiiM employee informing users that "require[ing] both devices to have identical clocks," is "rare in practice."); Ex. 65 (WiiM employee discussing "managing clock skew"); Ex. 66 (WiiM employee informing user "[e]ach receiver synchronizes its own clock to the master sender").
[34.5] after the controller device has configured the synchrony group, the controller device receiving status information over the LAN from at least one of the first or second zone players indicating that the first and second zone players in the synchrony group are configured to playback audio in synchrony with each other.	Each Linkplay controller comprises program instructions that, when executed by the Linkplay controller's one or more processors, cause that Linkplay controller to, after the Linkplay controller has configured the synchrony group, receive status information over the LAN from at least one of the first or second Linkplay players indicating that the first and second Linkplay players in the synchrony group are configured to playback audio in synchrony with each other. For instance, each Linkplay controller is programmed with the capability to receive status messages over the LAN from at least one of the first or second Linkplay players that provide an indication that the first and second players audio players in the group are configured to playback audio in synchrony with each other, including but not limited to status information that provides an identification of a name of the group, an identification of the "master" Linkplay player of the group, and/or an identification of any "slave" Linkplay players of the group. *See, e.g.,* Ex. 60; *see also, e.g.,* Ex. 18:

Claim 34	Linkplay Controller
	

180. Additionally and/or alternatively, Defendants have indirectly infringed and continue to indirectly infringe one or more of the claims of the '532 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module to directly infringe the one or more claims of the '532 Patent. For example, (a) Defendants had actual knowledge of the '532 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '532 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '532 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) Defendants intentionally cause, urge, or encourage users of the WiiM System to directly infringe one or more claims of the '532 Patent by promoting, advertising, and instructing customers and potential

customers about the WiiM System and uses of the system, including infringing uses (*see* Exs. 18, 38), and (c) Defendants know (or should know) that their actions will induce users of the WiiM System to directly infringe one or more claims the '532 Patent, and (d) users of the WiiM System directly infringe one or more claims of the '532 Patent. For instance, at a minimum, Defendants have supplied and continue to supply WiiM players to customers that require installation and use of the WiiM Home app to setup and control the WiiM players, while knowing that installation and use of the WiiM Home app on a user device will infringe one or more claims of the '532 Patent, and that Defendants' customers then directly infringe one or more claims of the '532 Patent by installing and using the WiiM Home app on a user device in accordance with Defendants' product literature about the WiiM System.

181. Additionally and/or alternatively, Linkplay has indirectly infringed and continues to indirectly infringe one or more of the claims of the '532 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the Muzo System, the WiiM System, and/or Linkplay modules that contribute to the direct infringement of the '532 Patent by users. For example, (a) Linkplay had actual knowledge of the '532 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), (b) Linkplay offers for sale, sells, and/or imports, in connection with the WiiM System, one or more material components of the invention of the '532 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Linkplay knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '532 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '532 Patent. For instance, at a minimum, Linkplay offers for sale, sells,

and/or imports software modules enabling the configuration of synchrony groups via the WiiM Home app for installation on WiiM controllers that meet one or more claims of the '532 Patent. *See, e.g.*, Ex. 18. Such software modules are material components of the WiiM controllers that meet the one or more claims of the '532 Patent. Further, Linkplay especially made and/or adapted such software modules for use in the WiiM controllers that meet the one or more claims of the '532 Patent, and such software modules are not a staple articles of commerce suitable for substantial noninfringing use. Indeed, there is no use for such software modules other than to, once installed onto WiiM controllers via the WiiM Home app, engage in the configuration of synchrony groups in a manner that infringes one or more claims of the '532 Patent. Linkplay's customers then directly infringe the one or more claims of the '532 Patent by installing and using the WiiM Home app, with the aforementioned software modules, on the WiiM controllers.

182. Defendants' infringement of the '532 Patent is also willful because Defendants (a) had actual knowledge of the '532 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '532 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '532 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) engaged in the aforementioned activity despite an objectively high likelihood that Defendants' actions constituted infringement of the '532 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Defendants.

183. Additional allegations regarding Defendants' pre-suit knowledge of the '532 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for

discovery.

184. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '532 Patent.

185. Sonos is entitled to recover from Defendants all damages that Sonos has sustained as a result of Defendants' infringement of the '532 Patent, including, without limitation, a reasonable royalty and lost profits.

186. Defendants' infringement of the ''532 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

187. Defendants' infringement of the '532 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

188. Defendants' infringement of the '532 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 9,213,357

189. Sonos incorporates by reference and re-alleges paragraphs 1-188 of this Second Amended Complaint as if fully set forth herein.

190. Linkplay, Origin Acoustics, users of the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module, and/or third-party product developers have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '357 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module within the United States and/or importing the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module into the United States without authority or license.

191. As just one non-limiting example, set forth below is an infringement claim chart of exemplary claim 9 of the '357 Patent in connection with the Muzo System, the WiiM System, and/or Linkplay modules. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the Muzo System, the WiiM System, and/or Linkplay modules that it obtains during discovery. Sonos also incorporates by reference its Infringement Contentions and Identification of Accused Products and Asserted Patents.

Claim 9	Linkplay Player
[9.0] A first playback device comprising:	Linkplay offers a wide range of audio playback devices, including at least the WiiM product line comprised of a number of WiiM players, including the WiiM Amp, WiiM Pro, WiiM Pro Plus, WiiM Wake-up Light, and WiiM Mini. *See, e.g.*, Exs. 25, 44, 51-52. Linkplay also offered the Muzo Cobblestone player that, on information and belief, contained the same (or substantially similar) relevant functionality as the aforementioned WiiM players. *See, e.g.*, Ex. 89. On information and belief, each device provisioned with a Linkplay module contains the same (or substantially similar) relevant functionality as the aforementioned WiiM players. For purposes of this chart, the foregoing devices will be referred to as "Linkplay players." Linkplay also offers apps that can be installed onto user devices, such as smartphones, tablets, and other computers, and utilized to control at least the WiiM players. *See, e.g.*, Ex. 18. For example, Linkplay offers the WiiM Home app, which can be installed onto user devices and utilized to control at least the WiiM players, and offered the Muzo app, which could be installed onto user devices and utilized to control at least the Cobblestone player. *See, e.g., id.*, Ex. 89. As another example, Linkplay provides a "companion app" that "includes streaming content integration, custom controls, and user interface" that third parties can customize for purposes of controlling at least Linkplay players. *See, e.g.*, Exs. 97, 104. For purposes of this chart, each user device installed with the WiiM Home app, Muzo app, and/or app derived from Linkplay's "companion app" for

Claim 9	Linkplay Player
	controlling a Linkplay player will be referred to as a "Linkplay controller." As described in further detail below, each Linkplay player is a "playback device," as recited in claim 9, and each Linkplay controller is a "network device," as recited in claim 9.
[9.1] one or more processors;	Each Linkplay player includes one or more processors. *See, e.g.*, Exs. 67-70.
[9.2] a network interface; and	Each Linkplay player includes a network interface, such as a WiFi interface. *See, e.g.*, Exs. 67-70.
[9.3] tangible, non-transitory computer-readable memory comprising program instructions that, when executed by the one or more processors, cause the first playback device to:	Each Linkplay player includes tangible, non-transitory computer-readable memory comprising executable program instructions that enable the Linkplay to perform the functions identified below. *See, e.g.*, Exs. 67-70.
[9.4] receive, via the network interface 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 network location of audio information available at an audio information source, wherein the audio information source is outside of the LAN; and	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to receive, via its network interface from a Linkplay controller communicatively coupled to the Linkplay player over a LAN, control information comprising an address identifying a network location of audio information available at an audio information source, where the audio information source is outside of the LAN. For instance, each Linkplay player is programmed with the capability to receive, from a Linkplay controller over a Wi-Fi network (which is a LAN), control information that includes a network address (e.g., a uniform resource locator (URL)) for audio information available at an online music source that is accessible via the Internet, such as Spotify, TuneIn, Pandora, Amazon Music, TIDAL, etc. *See, e.g.*, Ex. 18; Ex. 60 at p. 9 (describing "Play audio URL" command); Ex. 71.
[9.5] after receiving the control information, (i) obtain, via the network interface from the audio information source outside of the LAN, the audio information; (ii) transmit, via the network interface of the first playback device to a second playback device, the audio information,	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to, after receiving the control information, (i) obtain, via the network interface from the audio information source outside of the LAN, the audio information; (ii) transmit, via the network interface of the Linkplay player to a second Linkplay player, the audio information, playback timing information associated with the audio information, and device clock information of the

Claim 9	Linkplay Player
playback timing information associated with the audio information, and device clock information of the first playback device; and (iii) play back 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.	Linkplay player; and (iii) play back the audio information in synchrony with the second Linkplay player by using the playback timing information associated with the audio information and the device clock information of the Linkplay player to play back the audio information, where the Linkplay players remain independently clocked during synchronous playback of the audio information. For instance, each Linkplay player is programmed with the capability to enter into a "group" of two or more Linkplay players that are configured to play back audio in synchrony. *See, e.g.*, Ex. 18; Ex. 38, Ex. 72. In such a group, one of the Linkplay players will be designated to serve as the "master" of the group and every other Linkplay player will be designated to serve as a "slave" of the group. *See, e.g.,* Exs. 60-62. When a Linkplay player receives a command to access audio information from an identified Internet-based music service (e.g., Spotify, TuneIn, Pandora, Amazon Music, TIDAL, etc.) while operating as a "master" of a group, the Linkplay player functions to (i) obtain audio information from the identified Internet-based music service, (ii) send the obtained audio information, playback timing information associated with the audio information, and clock information of the "master" Linkplay player to each "slave" Linkplay player in the group via various types of data packets – including but not limited to 62-byte STUN packets and/or various encrypted TCP packets, and (iii) play back the obtained audio information in synchrony with the one or more "slave" Linkplay players using the playback timing information and the "master" Linkplay player's clock information. Further, while playing back the audio information in synchrony, each Linkplay player in the group continues to operate in accordance with its own respective clock. *See, e.g.*, Ex. 63 (WiiM employee discussing "compensat[ion] for the clock discrepancy between the sender and receiver, specifically allowing the receiver to align with the sender's clock."); Ex. 64 (WiiM employee informing users that "require[ing] both devices to have identical clocks," is "rare in practice."); Ex. 65 (WiiM employee discussing "managing clock skew"); Ex. 66 (WiiM employee informing user "[e]ach receiver synchronizes its own clock to the master sender").

192. Additionally and/or alternatively, Defendants have indirectly infringed and continue to indirectly infringe one or more of the claims of the '357 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Muzo System, the WiiM System, and/or devices provisioned with a Linkplay module and/or third-party product developers to directly infringe the one or more claims of the '357 Patent. For example, (a) Defendants had actual knowledge of the '357 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '357 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '357 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) Defendants intentionally cause, urge, or encourage users of the WiiM System to directly infringe one or more claims of the '357 Patent by promoting, advertising, and instructing customers and potential customers about the WiiM System and uses of the system, including infringing uses, and (c) Defendants know (or should know) that their actions will induce users of the WiiM System to directly infringe one or more claims the '357 Patent, and (d) users of the WiiM System directly infringe one or more claims of the '357 Patent. For instance, at a minimum, Defendants have supplied and continue to supply WiiM players to customers while knowing that use of these products will infringe one or more claims of the '357 Patent, and Defendants' customers then directly infringe one or more claims of the '357 Patent by using these WiiM players in accordance with Defendants' product literature about the WiiM System.

193. Additionally and/or alternatively, Linkplay has indirectly infringed and continues to indirectly infringe one or more of the claims of the '357 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United

States, components in connection with the Muzo System, the WiiM System, and/or Linkplay modules that contribute to the direct infringement of the '357 Patent by users and/or third-party product developers. For example, (a) Linkplay had actual knowledge of the '357 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), (b) Linkplay offers for sale, sells, and/or imports, in connection with the WiiM System, one or more material components of the invention of the '357 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Linkplay knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '357 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '357 Patent. For instance, at a minimum, Linkplay offers for sale, sells, and/or imports software updates containing software modules enabling synchronous playback of WiiM players that meet one or more claims of the '357 patent. *See, e.g.*, Exs. 61-62, 73-74. These software updates containing such software modules are material components of the WiiM players that meet the one or more claims of the '357 Patent. Further, Linkplay especially made and/or adapted these software updates containing such software modules for use in the WiiM players that meet the one or more claims of the '357 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Indeed, there is no use for such software updates containing such software modules other than to, once installed onto WiiM players, engage in synchronous playback in a manner that infringes one or more claims of the '357 Patent. Linkplay's customers then directly infringe the one or more claims of the '357 Patent by installing and using such software updates on the WiiM players.

194. Defendants' infringement of the '357 Patent is also willful because Defendants (a) had actual knowledge of the '357 Patent or were willfully blind to its existence prior to the filing

of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '357 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '357 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) engaged in the aforementioned activity despite an objectively high likelihood that Defendants' actions constituted infringement of the '357 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Defendants.

195. Additional allegations regarding Defendants' pre-suit knowledge of the '357 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

196. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '357 Patent.

197. Sonos is entitled to recover from Defendants all damages that Sonos has sustained as a result of Defendants' infringement of the '357 Patent, including, without limitation, a reasonable royalty and lost profits.

198. Defendants' infringement of the '357 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

199. Defendants' infringement of the '357 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 10,541,883

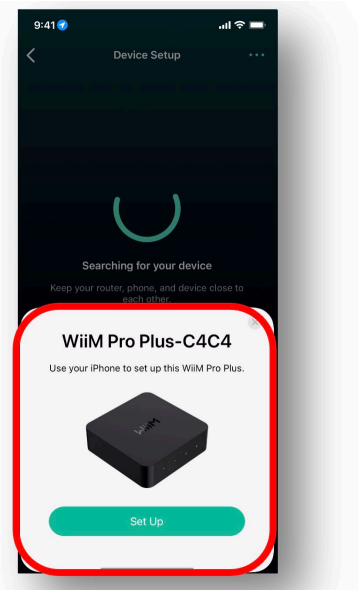
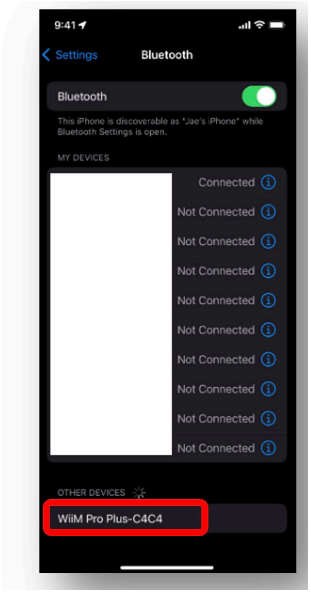
200. Sonos incorporates by reference and re-alleges paragraphs 1-199 of this Second Amended Complaint as if fully set forth herein.

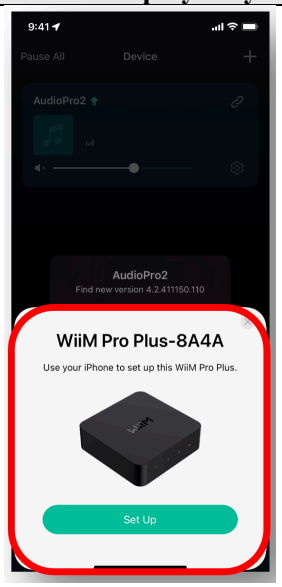
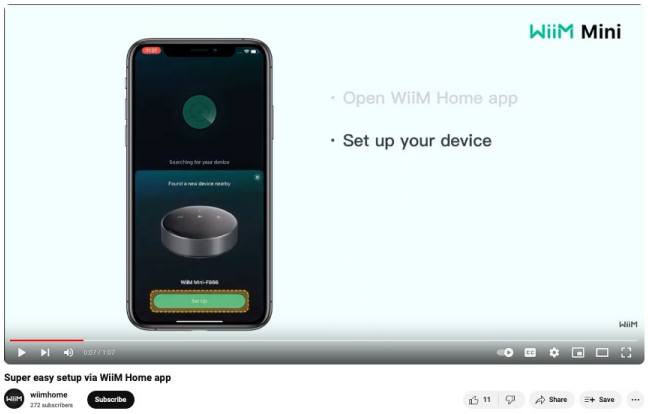
201. Linkplay, Origin Acoustics, users of the WiiM System and/or devices provisioned with a Linkplay module, and/or third-party product developers have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '883 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the WiiM System and/or devices provisioned with a Linkplay module within the United States and/or importing the WiiM System and/or devices provisioned with a Linkplay module into the United States without authority or license.

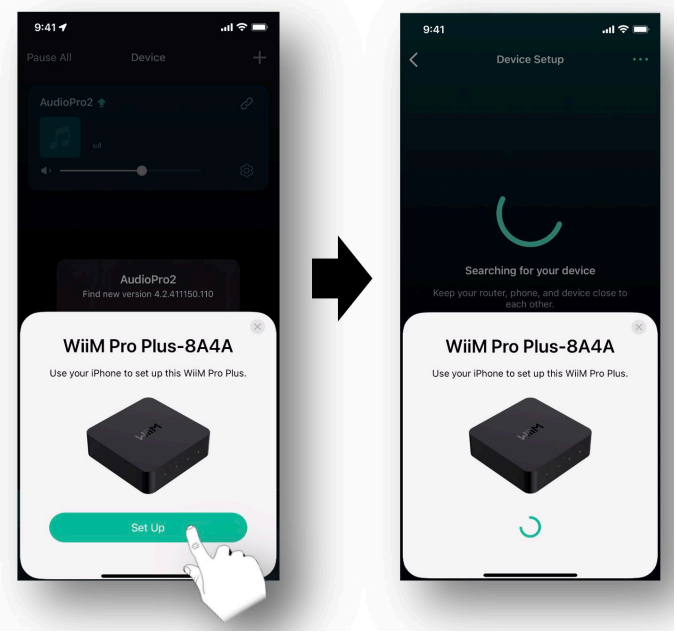
202. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 1 of the '883 Patent in connection with the WiiM System and/or Linkplay modules. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the WiiM System and/or Linkplay modules that it obtains during discovery. Sonos also incorporates by reference its Infringement Contentions and Identification of Accused Products and Asserted Patents.

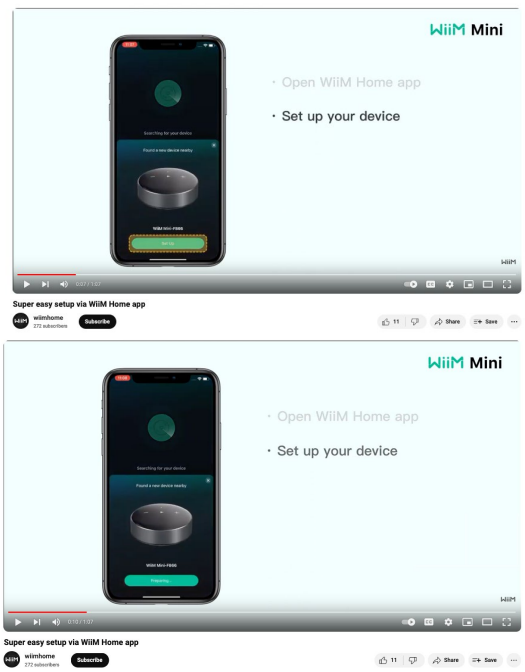
Claim: 1	Linkplay Player
[1.0] A playback device comprising:	Linkplay offers a wide range of audio playback devices, including at least the WiiM product line comprised of a number of WiiM players, including the WiiM Amp, WiiM Pro, WiiM Pro Plus, WiiM Wake-up Light, and WiiM Mini. *See, e.g.*, Exs. 25, 44, 51-52. On information and belief, each device provisioned with a Linkplay module contains the same (or substantially similar) relevant functionality as the aforementioned WiiM players. For purposes of this chart, the foregoing devices will be referred to as "Linkplay players." Linkplay also offers apps that can be installed onto user devices, such as smartphones, tablets, and other computers, and utilized to control at least the WiiM players. *See, e.g.*, Ex. 18. For example, Linkplay offers the WiiM Home app, which can be installed onto user devices and utilized to control at least the WiiM players. *See, e.g., id.* As another example, Linkplay offers the WiiM Light app, which can be installed onto user

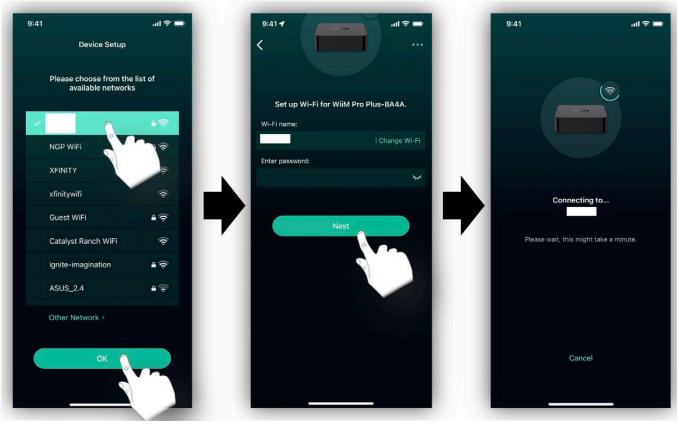
Claim: 1	Linkplay Player
	devices and utilized to control at least the WiiM Wake-up Light. As yet another example, Linkplay provides a "companion app" that "includes streaming content integration, custom controls, and user interface" that third parties can customize for purposes of controlling at least Linkplay players. *See, e.g.*, Exs. 97, 104. For purposes of this chart, each user device installed with the WiiM Home app, the WiiM Light app, and/or app derived from Linkplay's "companion app" for controlling a Linkplay player will be referred to as a "Linkplay controller." As described in more detail below, each Linkplay controller is a "computing device," as recited in claim 1, and each Linkplay player is a "playback device," as recited in claim 1.
[1.1] a network interface that is configured to provide an interconnection with at least one data network;	Each Linkplay player includes a network interface that is configured to provide an interconnection with at least one data network, such as a Wi-Fi interface. *See, e.g.*, Exs. 67-70.
[1.2] at least one processor;	Each Linkplay player includes at least one processor. *See, e.g.*, Exs. 67-70.
[1.3] a non-transitory computer-readable medium; and	Each Linkplay player includes a non-transitory computer-readable medium. *See, e.g.*, Exs. 67-70.
[1.4] program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the playback device to perform functions comprising:	Each Linkplay player includes program instructions that enable a Linkplay player to perform the functions identified below. *See, e.g.*, Exs. 67-70.
[1.5] detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup;	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's at least one processor, cause that Linkplay player to detect a triggering event that causes the Linkplay player to enter a setup mode in which Linkplay player transmits at least a first message indicating that the Linkplay player is available for setup. For instance, each Linkplay player is programmed with the capability to detect a triggering event that causes the Linkplay player to enter a setup mode, such as powering on the Linkplay player by plugging it into a wall socket. *See, e.g.*, Ex. 75 ("Connect your digital-to-analog converter (DAC), audio receiver, or powered speaker to your WiiM Pro or Pro Plus device, then connect them to

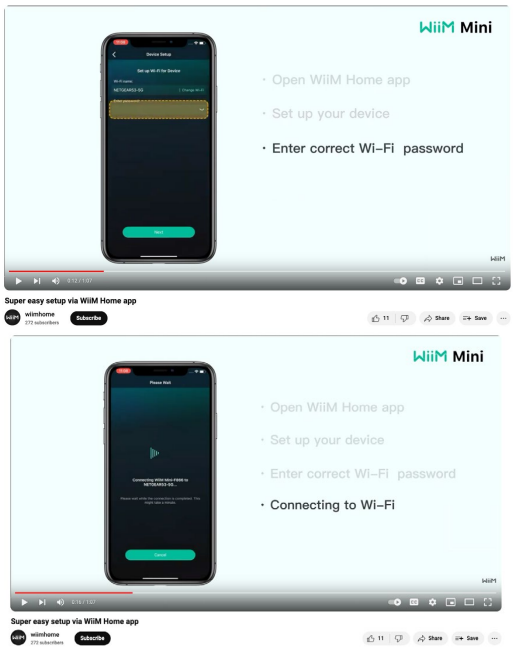
Claim: 1	Linkplay Player
	a power source."); Ex. 76 ("Connect the WiiM Amp to a power source using the provided power cable."); Ex. 77 ("Plug in one audio receiver or speaker on your device and connect it to power."). Each Linkplay player is programmed such that, after entering into the setup mode, the Linkplay player functions to transmit a message indicating that the Linkplay player is available for setup. For example, in response to a WiiM player being powered on for the first time out of the box or factory reset, the WiiM player enters a setup mode in which the WiiM player broadcasts messages (e.g., Bluetooth messages and/or in the case of the WiiM Wake-up Light, hotspot messages for the WiiM Wake-up Light's hotspot) indicating that the WiiM player is available for setup. Examples of this functionality are illustrated in the following screenshots:  

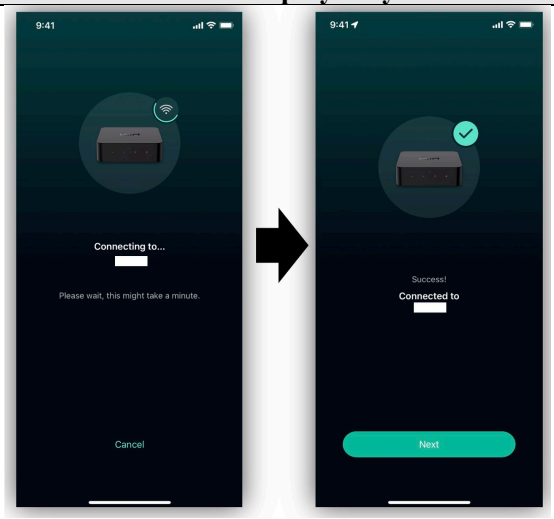
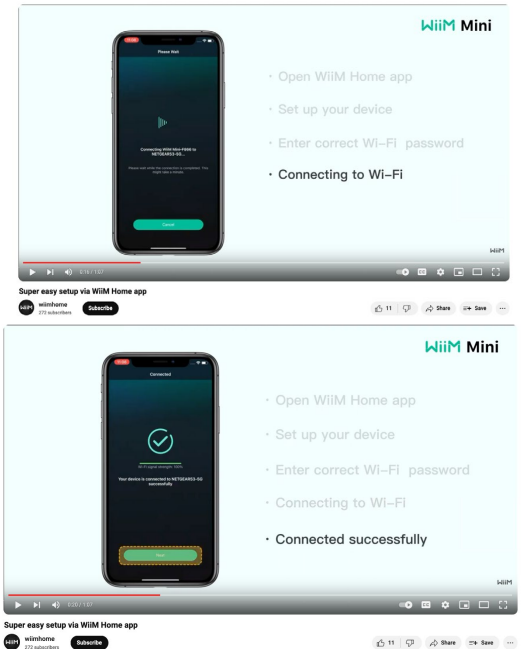
Claim: 1	Linkplay Player
	 *See also*, *e.g.*, https://www.youtube.com/watch?v=kzvgasy-a-E: 
[1.6] while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device, wherein the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point, wherein the initial communication path with the	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's at least one processor, cause that Linkplay player to, while in the setup mode, receive a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the Linkplay player, where the computing device is operating on a secure WLAN that is defined by an access point and where the initial communication path with the computing device does not traverse the access point.

Claim: 1	Linkplay Player
computing device does not traverse the access point;	For instance, each Linkplay player is programmed such that, while in the setup mode, the Linkplay player is capable of receiving, from a Linkplay controller that is operating on a secure local Wi-Fi network (which is a WLAN) that is defined by an access point, a response to the first message that facilitates establishing an initial communication path (e.g., via Bluetooth and/or in the case of the WiiM Wake-up Light, via the WiiM Wake-up Light's hotspot) with the Linkplay controller to set up the WiiM player on the secure local Wi-Fi network, where the initial communication path is established directly between the Linkplay player and the Linkplay controller, as opposed to traversing the access point for the secure local Wi-Fi network. *See, e.g.*, Exs. 75-77; Ex. 78 ("Bluetooth access is required for WiiM App to detect your nearby speakers and setup WiiM devices during the setup process."). Examples of this functionality are illustrated in the screenshots below from a Linkplay controller:  *See also*, *e.g.*, https://www.youtube.com/watch?v=kzvgasy-a-E:

Claim: 1	Linkplay Player
	
[1.7] receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's at least one processor, cause that Linkplay player to receive, from the Linkplay controller via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, where the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN. For instance, each Linkplay player is programmed such that, after establishing an initial communication path with a Linkplay controller, the Linkplay player functions to receive, via the initial communication path, at least one message containing network configuration parameters for a secure local Wi-Fi network from the Linkplay controller that includes an identifier of the secure local Wi-Fi network and a security key for the local Wi-Fi network. As one particular example, after the initial communication path is established, the Linkplay controller prompts the user (e.g., via the WiiM Home app), to select/enter configuration parameters for the user's local Wi-Fi network, including the SSID and

Claim: 1	Linkplay Player
	password of the local Wi-Fi network, and then sends to the Linkplay player at least one message that includes those network configuration parameters. *See, e.g.,* Ex. 76 ("Choos[e] your Wi-Fi network and entering the password. [ ]Wait[ ] for the device to connect to your network."). An example of this functionality is illustrated in the screenshots below from a Linkplay controller:  *See also*, *e.g.*, https://www.youtube.com/watch?v=kzvgasy-a-E:

Claim: 1	Linkplay Player
	
[1.8] using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's at least one processor, cause that Linkplay player to use the network configuration parameters to connect to the secure WLAN that is defined by the access point. For instance, each Linkplay player is programmed such that, after receiving a message comprising network configuration parameters for a secure local Wi-Fi network that is defined by an access point, the Linkplay player functions to use the network configuration parameters to connect to that secure local Wi-Fi network. *See, e.g.,* Ex. 76 ("Choos[e] your Wi-Fi network and entering the password. [ ]Wait[ ] for the device to connect to your network."). An example of this functionality is illustrated in the screenshots below:

Claim: 1	Linkplay Player
	 *See also*, *e.g.*, https://www.youtube.com/watch?v=kzvgasy-a-E: 
[1.9] transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure	Each Linkplay player comprises program instructions that, when executed by the Linkplay player's at least one processor, cause that Linkplay player to transition from communicating with the Linkplay controller via the initial communication path to communicating with the

Claim: 1	Linkplay Player
WLAN that is defined by the access point.	Linkplay controller via the secure WLAN that is defined by the access point. For instance, each Linkplay player is programmed such that, after using network configuration parameters provided by a Linkplay controller to connect to a secure local Wi-Fi network that is defined by an access point, the Linkplay player transitions from communicating with the Linkplay controller via an initial communication path that does not traverse the access point to communicating with the Linkplay controller via the secure local Wi-Fi network. *See, e.g.*, Ex. 76 ("You can now stream music using the WiiM Home app, or through compatible streaming services integrated with the WiiM Amp (like Spotify, Amazon Music, Tidal, Deezer, Qobuz, etc.)").

203. Additionally and/or alternatively, Defendants have indirectly infringed and continue to indirectly infringe one or more of the claims of the '883 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the WiiM System and/or devices provisioned with a Linkplay module and/or third-party product developers to directly infringe the one or more claims of the '883 Patent. For example, (a) Defendants had actual knowledge of the '883 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '883 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '883 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) Defendants intentionally cause, urge, or encourages user of the WiiM System to directly infringe one or more claims of the '883 Patent by promoting, advertising, and instructing customers and potential customers about the WiiM System and uses of the system, including infringing uses, and (c) Defendants know (or should know) that their actions will induce users of the WiiM System to directly infringe one or more claims the '883 Patent, and (d) users of the WiiM System directly

infringe one or more claims of the '883 Patent. For instance, at a minimum, Defendants have supplied and continue to supply WiiM players to customers while knowing that use of these products will infringe one or more claims of the '883 Patent, and that Defendants' customers then directly infringe one or more claims of the '883 Patent by using these WiiM players in accordance with Defendants' product literature about the WiiM System.

204. Additionally and/or alternatively, Linkplay has indirectly infringed and continues to indirectly infringe one or more of the claims of the '883 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the WiiM System and/or Linkplay modules that contribute to the direct infringement of the '883 Patent by users and/or third-party product developers. For example, (a) Linkplay had actual knowledge of the '883 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), (b) Linkplay offers for sale, sells, and/or imports, in connection with the WiiM System, one or more material components of the invention of the '883 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Linkplay knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '883 Patent, and (d) users of devices that comprise such material component(s) directly infringe one or more claims of the '883 Patent. For instance, at a minimum, Linkplay offers for sale, sells, and/or imports software updates containing software modules enabling setup of WiiM players that meet one or more claims of the '883 Patent. *See, e.g.*, Exs. 61-62, 73-74. These software updates containing such software modules are material components of the WiiM players that meet the one or more claims of the '883 Patent. Further, Linkplay especially made and/or adapted these software updates containing such software modules for use in the WiiM

players that meet the one or more claims of the '883 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Indeed, there is no use for such software updates containing such software modules other than to, once installed onto WiiM players, engage in setup of players in a manner that infringes one or more claims of the '883 Patent. Linkplay's customers then directly infringe the one or more claims of the '883 Patent by installing and using such software updates on the WiiM players.

205. Defendants' infringement of the '883 Patent is also willful because Defendants (a) had actual knowledge of the '883 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '883 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '883 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) engaged in the aforementioned activity despite an objectively high likelihood that Defendants' actions constituted infringement of the '883 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Defendants.

206. Additional allegations regarding Defendants' pre-suit knowledge of the '883 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

207. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '883 Patent.

208. Sonos is entitled to recover from Defendants all damages that Sonos has sustained as a result of Linkplay's infringement of the '883 Patent, including, without limitation, a

reasonable royalty and lost profits.

209. Defendants' infringement of the '883 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

210. Defendants' infringement of the '883 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

211. Defendants' infringement of the '883 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT V: INFRINGEMENT OF U.S. PATENT NO. 10,853,023

212. Sonos incorporates by reference and re-alleges paragraphs 1-211 of this Second Amended Complaint as if fully set forth herein.

213. Linkplay, Origin Acoustics, users of the WiiM System and/or devices provisioned with a Linkplay module, and/or third-party product developers have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '023 Patent, in violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling the WiiM System and/or devices provisioned with a Linkplay module within the United States and/or importing the WiiM System and/or devices provisioned with a Linkplay module into the United States without authority or license.

214. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 1 of the '023 Patent in connection with the WiiM System and/or Linkplay modules. This claim chart is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about the WiiM System and/or Linkplay modules that it obtains during discovery. Sonos also incorporates by reference its Infringement Contentions and Identification of Accused Products and Asserted Patents.

Claim 1	WiiM Linkplay
[1.0] A playback device comprising:	Linkplay offers a wide range of audio playback devices, including at least the WiiM product line comprised of a number of WiiM players, including the WiiM Amp, WiiM Pro, WiiM Pro Plus, and WiiM Mini. *See, e.g.*, Exs. 25, 44, 51. On information and belief, each device provisioned with a Linkplay module contains the same (or substantially similar) relevant functionality as the aforementioned WiiM players. For purposes of this chart, the foregoing devices will be referred to as "Linkplay players." Linkplay also offers apps that can be installed onto user devices, such as smartphones, tablets, and other computers, and utilized to control at least the WiiM players. *See, e.g.*, Ex. 18. For example, Linkplay offers the WiiM Home app, which can be installed onto user devices and utilized to control at least the WiiM players. *See, e.g., id.* As another example, Linkplay provides a "companion app" that "includes streaming content integration, custom controls, and user interface" that third parties can customize for purposes of controlling at least Linkplay players. *See, e.g.*, Exs. 97, 104. For purposes of this chart, each user device installed with the WiiM Home app and/or app derived from Linkplay's "companion app" for controlling a Linkplay player will be referred to as a "Linkplay controller." As described in more detail below, each Linkplay player is a "playback device," as recited in claim 1.
[1.1] one or more processors; and	Each Linkplay player includes one or more processors. *See, e.g.*, Exs. 67-70.
[1.2] tangible, non-transitory computer readable memory comprising instructions stored therein, wherein the instructions, when executed, cause the playback device to perform a method comprising:	Each Linkplay player includes a non-transitory computer readable memory having stored therein executable instructions that enable the Linkplay player to perform the functions identified below. *See, e.g.,* Exs. 67-70.
[1.3] arming the playback device so that receipt of a first type of media content preempts playback of a second type of media content;	Each Linkplay player comprises instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to arm the Linkplay player so that receipt of a first type of media content preempts playback of a second type of media content. For instance, each Linkplay player is programmed with the capability to arm itself so that receipt of a first type of media content at the Linkplay player's line-in connector

Claim 1	WiiM Linkplay
	that is equipped with "auto-sensing" functionality preempts playback of a second type of media content that is not present at the Linkplay player's line-in connector (e.g., audio from an Internet-based music service). *See, e.g.*, Ex. 48 ("Auto-sensing allows the WiiM Amp to automatically play audio from the connected input as soon as a signal is detected, regardless of the device's current state or standby mode. … By enabling Auto-sensing, your WiiM Amp will seamlessly transition to input audio, enhancing your listening experience with convenience."); Ex. 49 ("Enable Auto-sensing to have WiiM Pro play input audio automatically as soon as it detects an incoming signal through the audio input port. This function activates no matter whether the device or group has or has no ongoing playback and goes into standby mode."); Ex. 50.
[1.4] after arming the playback device, playing the second type of media content;	Each Linkplay player comprises instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to, after arming the Linkplay player, play the second type of media content. For instance, each Linkplay player is programmed such that, after arming the Linkplay player, the Linkplay player functions to play the second type of media content that is not present at the Linkplay player's line-in connector (e.g., playing audio from an Internet-based music service as a result of a user's voice request). *See, e.g.*, Ex. 18; Ex. 71; Ex. 79.
[1.5] while playing the second type of media content, determining that the playback device is receiving the first type of media content via a line-in connector;	Each Linkplay player comprises instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to, while playing the second type of media content, determine that the Linkplay player is receiving the first type of media content via a line-in connector. For instance, each Linkplay player is programmed such that, while playing the second type of media content that is not present at the Linkplay player's line-in connector (e.g., audio from an Internet-based music service initiated as a result of a user's voice request), the Linkplay player functions to determine that it is receiving the first type of media content via the line-in connector that is equipped with "auto-sensing" functionality. *See, e.g.*, Ex. 48 ("Auto-sensing allows the WiiM Amp to automatically play audio from the connected input as soon as a signal is detected, regardless of the device's current state or standby mode. …

Claim 1	WiiM Linkplay
	By enabling Auto-sensing, your WiiM Amp will seamlessly transition to input audio, enhancing your listening experience with convenience."); Ex. 49 ("Enable Auto-sensing to have WiiM Pro play input audio automatically as soon as it detects an incoming signal through the audio input port. This function activates no matter whether the device or group has or has no ongoing playback and goes into standby mode."); Ex. 50.
[1.6] in response to determining that playback device is receiving the first type of media content, ceasing playback of the second type of media content and playing the first type of media content;	Each Linkplay players comprises instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to, in response to determining that the Linkplay player is receiving the first type of media content, cease playback of the second type of media content and play the first type of media content. For instance, each Linkplay player is programmed such that, in response to determining that the Linkplay player is receiving the first type of media content via the line-in connector that is equipped with "auto-sensing" functionality, the Linkplay player functions to cease playback of the second type of media content that is not present at the Linkplay player's line-in connector (e.g., audio from an Internet-based music service initiated as a result of a user's voice request) and play the first type of media content that is present at the Linkplay player's line-in connector. *See, e.g.*, Ex. 48 ("Auto-sensing allows the WiiM Amp to automatically play audio from the connected input as soon as a signal is detected, regardless of the device's current state or standby mode. … By enabling Auto-sensing, your WiiM Amp will seamlessly transition to input audio, enhancing your listening experience with convenience."); Ex. 49 ("Enable Auto-sensing to have WiiM Pro play input audio automatically as soon as it detects an incoming signal through the audio input port. This function activates no matter whether the device or group has or has no ongoing playback and goes into standby mode."); Ex. 50.
[1.7] determining that the playback device is no longer receiving the first type of media content; and	Each Linkplay player comprises instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to determine that the Linkplay player is no longer receiving the first type of media content. For instance, as discussed before, each Linkplay player is programmed with the capability to determine whether the Linkplay player is no longer receiving the first type of

Claim 1	WiiM Linkplay
	media content, which includes the capability to determine that the first type of media content that was previously present at a line-in connector is no longer present. *See, e.g.*, Exs. 48-50.
[1.8] in response to determining that the playback device is no longer receiving the first type of media content, ceasing playback of the first type of media content and rearming the playback device so that subsequent receipt of the first type of media content preempts playback of the second type of media content.	Each Linkplay player comprises instructions that, when executed by the Linkplay player's one or more processors, cause that Linkplay player to, in response to determining that the Linkplay player is no longer receiving the first type of media content, cease playback of the first type of media content and rearm the Linkplay player so that subsequent receipt of the first type of media content preempts playback of the second type of media content. For instance, each Linkplay player is programmed such that, in response to determining that the Linkplay player is no longer receiving the first type of media content at the Linkplay player's line-in connector that is equipped with "auto-sensing" functionality, the Linkplay player functions to cease playback of the first type of media content and rearm itself so that subsequent receipt of the first type of media content at the Linkplay player's line-in connector that is equipped with "auto-sensing" functionality preempts playback of the second type of media content and causes the Linkplay player to playback the first type of media content at the Linkplay player's line-in connector that is equipped with "auto-sensing" functionality. *See, e.g.*, Exs. 48-50.

215. Additionally and/or alternatively, Defendants have indirectly infringed and continue to indirectly infringe one or more of the claims of the '023 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the WiiM System and/or devices provisioned with a Linkplay module and/or third-party product developers to directly infringe the one or more claims of the '023 Patent. For example, (a) Defendants had actual knowledge of the '023 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '023 Patent or was willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '023 Patent or was willfully blind to its

existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) Defendants intentionally cause, urge, or encourage users of the WiiM System to directly infringe one or more claims of the '023 Patent by promoting, advertising, and instructing customers and potential customers about the WiiM System and uses of the system, including infringing uses, and (c) Defendants know (or should know) that its actions will induce users of the WiiM System to directly infringe one or more claims the '023 Patent, and (d) users of the WiiM System directly infringe one or more claims of the '023 Patent. For instance, at a minimum, Defendants have supplied and continues to supply WiiM players to customers while knowing that use of these products will infringe one or more claims of the '023 Patent, and that Linkplay's customers then directly infringe one or more claims of the '023 Patent by using these WiiM players in accordance with Defendants' product literature about the WiiM System.

216. Additionally and/or alternatively, Linkplay has indirectly infringed and continues to indirectly infringe one or more of the claims of the '023 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the WiiM System and/or Linkplay modules that contribute to the direct infringement of the '023 Patent by users and/or third-party product developers. For example, (a) Linkplay had actual knowledge of the '023 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), (b) Linkplay offers for sale, sells, and/or imports, in connection with the WiiM System, one or more material components of the invention of the '023 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Linkplay knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '023 Patent, and (d) users of devices that comprise such material component(s)

directly infringe one or more claims of the '023 Patent. For instance, at a minimum, Linkplay offers for sale, sells, and/or imports software updates containing software modules enabling WiiM players to engage in source switching in a manner that meets one or more claims of the '023 Patent. *See, e.g.*, Exs. 61-62, 73-74. These software updates containing such software modules are material components of the WiiM players that meet the one or more claims of the '023 Patent. Further, Linkplay especially made and/or adapted these software updates containing such software modules for use in the WiiM players that meet the one or more claims of the '023 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Indeed, there is no use for such software updates containing such software modules other than to, once installed onto WiiM players, engage in source switching in a manner that infringes one or more claims of the '023 Patent. Linkplay's customers then directly infringe the one or more claims of the '023 Patent by installing and using such software updates on the WiiM players.

217. Defendants' infringement of the '023 Patent is also willful because Defendants (a) had actual knowledge of the '023 Patent or were willfully blind to its existence prior to the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '023 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this action (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '023 Patent or was willfully blind to its existence no later than the service of Sonos's subpoena to Origin Acoustics (*see* D.I. 34)), (b) engaged in the aforementioned activity despite an objectively high likelihood that Defendants' actions constituted infringement of the '023 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Defendants.

218. Additional allegations regarding Defendants' pre-suit knowledge of the '023 Patent

and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

219. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '023 Patent.

220. Sonos is entitled to recover from Defendants all damages that Sonos has sustained as a result of Linkplay's infringement of the '023 Patent, including, without limitation, a reasonable royalty and lost profits.

221. Defendants' infringement of the '023 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

222. Defendants' infringement of the '023 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

223. Defendants' infringement of the '023 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 10,146,498

224. Sonos incorporates by reference and re-alleges paragraphs 1-223 of this Second Amended Complaint as if fully set forth herein.

225. Linkplay, Origin Acoustics, users of the Muzo System, WiiM System, and/or other Linkplay systems, and/or third-party developers have directly infringed (either literally or under the doctrine of equivalents) and continue to directly infringe one or more of the claims of the '498 Patent, in violation of 35 U.S.C. § 271(a), by making and/or using Linkplay systems within the United States.

226. As just one non-limiting example, set forth below is an exemplary infringement claim chart for claim 8 of the '498 Patent in connection with a Linkplay system. This claim chart

is based on publicly available information. Sonos reserves the right to modify this claim chart, including, for example, on the basis of information about Linkplay systems that it obtains during discovery. Sonos also incorporates by reference its Infringement Contentions and Identification of Accused Products and Asserted Patents.

Claim 8	Linkplay System
[8.0] A system comprising:	Linkplay offers a wide range of audio playback devices, including at least the WiiM product line comprised of a number of WiiM players, including the WiiM Amp, WiiM Pro, WiiM Pro Plus, WiiM Wake-up Light, and WiiM Mini. *See, e.g.*, Exs. 25, 44, 51-52. Linkplay also offered the Muzo Cobblestone player that, on information and belief, contained the same (or substantially similar) relevant functionality as the aforementioned WiiM players. *See, e.g.*, Ex. 89. On information and belief, each device provisioned with a Linkplay module contains the same (or substantially similar) relevant functionality as the aforementioned WiiM players. For purposes of this chart, the foregoing devices will be referred to as "Linkplay players." Linkplay also offers apps that can be installed onto user devices, such as smartphones, tablets, and other computers, and utilized to control at least the WiiM players. *See, e.g.*, Ex. 18. For example, Linkplay offers the WiiM Home app, which can be installed onto user devices and utilized to control at least the WiiM players, and offered the Muzo app, which could be installed onto user devices and utilized to control at least the Cobblestone player. *See, e.g., id.*, Ex. 89. As another example, Linkplay provides a "companion app" that "includes streaming content integration, custom controls, and user interface" that third parties can customize for purposes of controlling at least Linkplay players. *See, e.g.*, Exs. 97, 104. For purposes of this chart, each user device installed with the WiiM Home app, Muzo app, and/or app derived from Linkplay's "companion app" for controlling a Linkplay player will be referred to as a "Linkplay controller." As described in further detail below, each Linkplay player is a "zone player," as recited in claim 8, each Linkplay controller is a "controller device," as recited in claim 8, and a system including at least one "first tangible non-transitory

Claim 8	Linkplay System
	computer-readable media having instructions stored thereon" (e.g., by virtue of one or more Linkplay controllers) and at least one "second tangible non-transitory computer-readable media having instructions stored thereon" (e.g., by virtue of one or more Linkplay players or modules) comprises a "system," as recited in claim 8.
[8.1] first tangible non-transitory computer-readable media having instructions stored thereon, wherein the instructions, when executed by a first set of one or more processors, cause a controller device to control a plurality of zone players in a media playback system; and	Each Linkplay controller includes tangible non-transitory computer-readable media having instructions stored thereon, where the instructions, when executed by a set of one or more processors of the Linkplay controller, cause it to control a plurality of Linkplay players in a media playback system. For instance, each user device capable of installing the WiiM Home app, Muzo app, and/or app derived from Linkplay's "companion app" includes computer memory and one or more processors, and when such a user device is installed with one such app, its computer memory includes at least the executable program instructions of the app that enable that Linkplay controller to control a plurality of Linkplay players in a media playback system that is on the same local area network (LAN) as the Linkplay controller. *See, e.g.*, Exs. 18, 53-59.
[8.2] second tangible non-transitory computer-readable media having instructions stored thereon, wherein the instructions, when executed by a second set of one or more processors, cause a first zone player to perform functions comprising:	Each Linkplay player and each Linkplay module includes tangible non-transitory computer-readable media having instructions stored thereon, where the instructions, when executed by a set of one or more processors, cause a Linkplay player to perform the functions identified below. For instance, each Linkplay player and each Linkplay module includes computer memory installed at least with firmware that, when executed by one or more processors, cause a Linkplay player to perform the functions identified below. *See, e.g.*, Exs. 67-70, 87-88.
[8.2(i)] joining a first synchrony group comprising the first zone player and a second zone player;	Each Linkplay player and each Linkplay module includes tangible non-transitory computer-readable media having stored instructions that, when executed by a set of one or more processors, cause a Linkplay player to join a first synchrony group comprising the Linkplay player and a second Linkplay player. For instance, each Linkplay player is programmed with the capability to enter into a "group" of two or more Linkplay players that are configured to play back audio in synchrony. *See, e.g.*, Ex. 18; Ex. 38, Ex. 72. In such a group, one of the

Claim 8	Linkplay System
	Linkplay players will be designated to serve as the "master" of the group and every other Linkplay player will be designated to serve as a "slave" of the group. *See, e.g.,* Exs. 60-62.
[8.2(ii)] providing first device clock timing information to the second zone player over an asynchronous network while the first zone player is in the first synchrony group;	Each Linkplay player and each Linkplay module includes tangible non-transitory computer-readable media having stored instructions that, when executed by a set of one or more processors, cause a Linkplay player to provide device clock timing information to the second Linkplay player over an asynchronous network while the Linkplay player is in the first synchrony group. For instance, each Linkplay player is programmed such that, while operating as a "master" of a group, the Linkplay player functions to send device clock timing information from the "master" Linkplay player to each "slave" Linkplay player in the group via data packets over an asynchronous LAN, such as TCP and/or STUN packets.
[8.2(iii)] playing first audio information in synchrony with the second zone player while the first zone player is in the first synchrony group, wherein all zone players in the first synchrony group playback the first audio information using the first device clock timing information that the first zone player provides to the first synchrony group over the asynchronous network;	Each Linkplay player and each Linkplay module includes tangible non-transitory computer-readable media having stored instructions that, when executed by a set of one or more processors, cause a Linkplay player to play first audio information in synchrony with the second Linkplay player while the Linkplay player is in the first synchrony group, where all Linkplay players in the first synchrony group playback the first audio information using the device clock timing information that the Linkplay player provides to the first synchrony group over the asynchronous network. For instance, each Linkplay player is programmed such that, while operating as a "master" of a group, the Linkplay player functions to play audio information in synchrony with each "slave" Linkplay player in the group using device clock timing information for the "master" Linkplay player. *See, e.g.*, Exs. 18, 38, 72.
[8.2(iv)] receiving control information from the controller device via the asynchronous network, wherein the control information includes an identification of a third zone player, and wherein the control information directs the first zone player to (a) disengage from the first synchrony group, (b) join a	Each Linkplay player and each Linkplay module includes tangible non-transitory computer-readable media having stored instructions that, when executed by a set of one or more processors, cause a Linkplay player to receive control information from the Linkplay controller via the asynchronous network, where the control information includes an identification of a third Linkplay player, and where the control information directs the Linkplay player to (a) disengage from the first synchrony group, (b) join a second synchrony group with the third Linkplay player, and

Claim 8	Linkplay System
second synchrony group with the third zone player, and (c) receive second audio information from the third zone player for playback in synchrony with the third zone player; and	(c) receive second audio information from the third Linkplay player for playback in synchrony with the third Linkplay player. For instance, each Linkplay player is programmed such that, while operating as a "master" of a group, the Linkplay player functions to receive control information from a Linkplay controller on the same asynchronous LAN that directs the Linkplay player to (i) disengage from the first group, (ii) join a second group with another Linkplay player that is identified in the control information, where the identified Linkplay player is designated to serve as the "master" of the second group, and (iii) operate as a "slave" of the second group such that the Linkplay player functions to receive audio information from the "master" of the second group for playback in synchrony with that other Linkplay player. *See, e.g.*, Exs. 18, 38, 72.
[8.2(v)] after receiving the control information from the controller device (a) disengaging the first zone player from the first synchrony group, (b) joining the first zone player to the second synchrony group, (c) receiving the second audio information from the third zone player, and (d) playing the second audio information in synchrony with the third zone player.	Each Linkplay player and each Linkplay module includes tangible non-transitory computer-readable media having stored instructions that, when executed by a set of one or more processors, cause a Linkplay player to, after receiving the control information from the Linkplay controller, (a) disengage the Linkplay player from the first synchrony group, (b) join the Linkplay player to the second synchrony group, (c) receive the second audio information from the third Linkplay player, and (d) play the second audio information in synchrony with the third Linkplay player. For instance, each Linkplay player is programmed such that, after receiving the control information discussed above while operating as a "master" of a first group, the Linkplay player functions to (i) disengage from the first group, (ii) enter into the second group in which the Linkplay player is designated to serve as a "slave" of the group, (iii) receive audio information from the "master" Linkplay player of the second group, and (iv) play the received audio information in synchrony with the "master" Linkplay player of the second group. *See, e.g.*, Exs. 18, 38, 72.

227. Additionally and/or alternatively, Defendants have indirectly infringed and continue to indirectly infringe one or more of the claims of the '498 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the WiiM System and/or any other Linkplay system

and/or third-party developers to directly infringe the one or more claims of the '498 Patent. For example, (a) Defendants had actual knowledge of the '498 Patent or were willfully blind to its existence prior to or at the time of the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '498 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this Second Amended Complaint (*see* ¶¶32-51 above), and Origin Acoustics had actual knowledge of the '498 Patent or was willfully blind to its existence no later than the service of this Second Amended Complaint), (b) Defendants intentionally cause, urge, or encourage users of the WiiM System to directly infringe one or more claims of the '498 Patent by promoting, advertising, and instructing customers and potential customers about the WiiM System and uses of the system, including infringing uses, and (c) Defendants know (or should know) that its actions will induce users of the WiiM System to directly infringe one or more claims the '498 Patent, and (d) users of the WiiM System directly infringe one or more claims of the '498 Patent. For instance, at a minimum, Defendants have supplied and continues to supply WiiM players to customers that require installation and use of the WiiM Home app to setup and control the WiiM players, while knowing that making and/or use of a WiiM System comprising WiiM players and a user device installed with at least the WiiM Home app will infringe one or more claims of the '498 Patent, and that Defendants' customers then directly infringe one or more claims of the '498 Patent by making and/or using the WiiM System in accordance with Defendants' product literature about the WiiM System.

228. Additionally and/or alternatively, Linkplay has indirectly infringed and continues to indirectly infringe one or more of the claims of the '498 Patent, in violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United States, and/or importing into the United States, components in connection with the WiiM System and/or any other Linkplay system that

contribute to the direct infringement of the '498 Patent by users and/or third-party product developers. For example, (a) Linkplay had actual knowledge of the '498 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this Second Amended Complaint (*see* ¶¶32-51 above), (b) Linkplay offers for sale, sells, and/or imports, in connection with the WiiM System, one or more material components of the invention of the '498 Patent that are not staple articles of commerce suitable for substantial noninfringing use, (c) Linkplay knows (or should know) that such component(s) were especially made or especially adapted for use in an infringement of the '498 Patent, and (d) users of systems that comprise such material component(s) directly infringe one or more claims of the '498 Patent. For instance, at a minimum, Linkplay offers for sale, sells, and/or imports software updates containing software modules enabling "group" engagement and disengagement of WiiM players that meet one or more claims of the '498 Patent. *See, e.g.*, Exs. 61-62, 73-74. These software updates containing such software modules are material components of WiiM players included in the WiiM System that meet one or more claims of the '498 Patent. Further, Linkplay especially made and/or adapted these software updates containing such software modules for use in the WiiM players included in the WiiM System that meet the one or more claims of the '498 Patent, and these software updates are not staple articles of commerce suitable for substantial noninfringing use. Indeed, there is no use for such software updates containing such software modules other than to, once installed onto WiiM players, enable "group" engagement and disengagement in a manner that infringes one or more claims of the '498 Patent. Linkplay's customers then directly infringe the one or more claims of the '498 Patent by installing such software updates on the WiiM players and controlling the WiiM players with a user device installed with the WiiM Home app.

229. Defendants' infringement of the '498 Patent is also willful because Defendants (a)

had actual knowledge of the '498 Patent or were willfully blind to its existence prior to or at the time of the filing of this Second Amended Complaint (e.g., Linkplay had actual knowledge of the '498 Patent or were willfully blind to its existence prior to (at least as early as December 11, 2023), and no later than, the filing of this Second Amended Complaint (*see* ¶¶32-51 above), and Defendants had actual knowledge of the '498 Patent or was willfully blind to its existence no later than the service of this Second Amended Complaint), (b) engaged in the aforementioned activity despite an objectively high likelihood that Defendants' actions constituted infringement of the '498 Patent, and (c) this objectively-defined risk was either known or so obvious that it should have been known to Defendants.

230. Additional allegations regarding Defendants' pre-suit knowledge of the '498 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

231. Sonos is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '498 Patent.

232. Sonos is entitled to recover from Defendants all damages that Sonos has sustained as a result of Defendants' infringement of the '498 Patent, including, without limitation, a reasonable royalty and lost profits.

233. Defendants' infringement of the '498 Patent was and continues to be willful and deliberate, entitling Sonos to enhanced damages.

234. Defendants' infringement of the '498 Patent is exceptional and entitles Sonos to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

235. Defendants' infringement of the '498 Patent has caused irreparable harm (including the loss of market share) to Sonos and will continue to do so unless enjoined by this Court.

PRAYER FOR RELIEF

WHEREFORE, Sonos respectfully requests:

A. That Judgment be entered that Defendants have infringed at least one or more claims of each of the patents-in-suit and continue to infringe at least one or more claims of each of the unexpired patents-in-suit, directly and/or indirectly, literally and/or under the doctrine of equivalents, and that such infringement has been and, with respect to the unexpired patents-in-suit, is, willful;

B. An injunction enjoining Defendants, its officers, agents, servants, employees and attorneys, and other persons in active concert or participation with Defendants, and its parents, subsidiaries, divisions, successors and assigns, from further infringement of the unexpired patents-in-suit.

C. An award of damages sufficient to compensate Sonos for Defendants' infringement under 35 U.S.C. § 284, including an enhancement of damages on account of Defendants' willful infringement;

D. That the case be found exceptional under 35 U.S.C. § 285 and that Sonos be awarded its reasonable attorneys' fees;

E. Costs and expenses in this action;

F. An award of prejudgment and post-judgment interest; and

G. Such other and further relief as the Court may deem just and proper.

REQUEST FOR JURY TRIAL

Pursuant to FED. R. CIV. P. 38, Sonos respectfully demands a trial by jury of any issue triable of right by a jury.

Dated: December 17, 2024

POTTER ANDERSON & CORROON LLP

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