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26 **UNITED STATES DISTRICT COURT**
27 **FOR THE CENTRAL DISTRICT OF CALIFORNIA**

28 SONOS, INC.,

Plaintiff,

v.

GOOGLE LLC,

Defendant.

Case No. 2:20-cv-00169-JAK (DFMx)

**SECOND AMENDED COMPLAINT
FOR PATENT INFRINGEMENT**

JURY TRIAL DEMANDED

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SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

1 1. Plaintiff Sonos, Inc. (“Sonos” or “Plaintiff”) hereby asserts the
2 following claims for patent infringement of United States Patent Nos. 7,571,014,
3 8,588,949, 9,195,258, 9,219,959, 10,031,715, 10,209,953, 10,439,896,
4 10,541,883, 10,966,025, and 11,080,001 (“patents-in-suit”; attached hereto as
5 Exhibits 1-5, 108-110, and 130-131) against Defendant Google LLC (“Google” or
6 “Defendant”), and alleges as follows:
7

INTRODUCTION

8 2. In the early 2000s, Sonos pioneered what is known as wireless multi-
9 room audio, bringing its first commercial products to market in 2005. In
10 recognition of its wide-ranging innovations, the U.S. Patent & Trademark Office
11 has granted Sonos more than 1,600 patents, including the patents-in-suit. The
12 innovations captured by these patents cover many fundamental aspects of wireless
13 multi-room audio devices and systems, including, for example, how to set up a
14 playback device on a wireless local area network, how to manage and control
15 groups of playback devices (*e.g.*, how to adjust group volume of playback devices
16 and how to pair playback devices together for stereo sound), how to synchronize
17 the play back of audio within groups of playback devices, and how to designate
18 different roles or responsibilities to the members of a group of playback devices.
19

20 3. Commercial success did not come easy for Sonos as its vision was in
21 many ways ahead of its time. But year by year, consumers – and the entire
22 industry – came to appreciate that wireless multi-room audio could not only work,
23 but could become an essential part of the listening experience. Success required
24 staying true to Sonos’s disruptive vision, which in turn required enormous
25 investments in research and development. Indeed, as the pioneer in wireless
26 multi-room audio, Sonos’s research and development resulted in commercial
27 products that embodied technology and user experiences that made wireless
28 multi-room audio successful. While Sonos demonstrated its vision to the market,

1 other would-be competitors sat back letting Sonos take the risk and expense with
2 demonstrating to the market the value of Sonos’s vision. Only after Sonos had
3 charted this course did competitors, like Google, come out and copy Sonos’s
4 products and its patented technology.

5 4. To this day, Sonos remains focused on innovations that further
6 enhance the listening experience. Sonos invests heavily in research and
7 development and, as a result, frequently invents new devices and systems with
8 new technologies, enhanced functionality, improved sound quality, and an
9 enriched user experience.

10 5. Recognizing Sonos’s success, many competitors have tried to
11 emulate Sonos’s products, but history has proven that this is not possible without
12 utilizing Sonos’s patented technologies. For example, as early as 2011, Google
13 engineers and employees were familiar with Sonos and its products and
14 recognized Sonos’s commercial success. Just a few years later, when Google set
15 its sights on developing a suite of smart home products, it copied Sonos’s
16 products and Sonos’s patented technology. Since 2015, Google’s
17 misappropriation of Sonos’s patented technology has only proliferated, as Google
18 has expanded its wireless multi-room audio system to more than a dozen different
19 infringing products, including, for example, Chromecast, Chromecast Ultra,
20 Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K),
21 Pixel Tablet with the Charging Speaker Dock, Home Mini, Nest Mini, Home,
22 Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi
23 Point (individually or collectively, “Google Audio Player(s)” or “Cast-enabled
24 media player(s)”), all of which can be controlled by, for example, the YouTube
25 Music app, the Google Play Music app, and the Google Home app (individually
26 or collectively, “Google App(s)”).

27 6. Worse still, Google’s willful infringement of Sonos’s patents has
28 persisted to this day despite the fact that Sonos warned Google of its infringement

1 on at least ten separate occasions dating back to 2016, and initiated this suit, as
2 well as a parallel suit against Google before International Trade Commission
3 (ITC) in 2020, the latter of which resulted in a finding that Google infringed all
4 five of the Sonos patents asserted in the ITC (the same five patents originally
5 asserted in this case).

6 7. Instead of halting its infringing activities after being adjudged an
7 infringer, Google made changes to its products that are insufficient to avoid
8 infringement. That is, due to the broad scope of Sonos's patent portfolio,
9 Google's revised products continue to infringe several other of Sonos's patents,
10 including three patents that Sonos added in its First Amended Complaint and two
11 patents that Sonos is adding in this Second Amended Complaint.¹ Indeed,
12 changes by Google to try to avoid particular patents will not avoid infringement of
13 Sonos's wider patent portfolio, which Sonos diligently developed over the past 20
14 years and which covers numerous fundamental aspects of a commercially
15 successful wireless multi-room audio system. Sonos's patent portfolio originates
16 from the products Sonos introduced in 2005, nearly 10 years before Google
17 introduced its first wireless multi-room audio products. And as evidenced by the
18 ITC rulings, Sonos's patented technology is still used today in Sonos's products
19 as well as being misappropriated by others like Google.

20 8. The harm caused by Google's infringement has been profoundly
21 compounded by Google's business strategy of using its multi-room audio
22 products to vacuum up invaluable consumer data from users to further entrench
23 the Google platform among its users and to ultimately fuel its dominant
24 advertising and search platforms. In furtherance of this strategy, Google has not
25 merely copied Sonos's patented technology, it has copied Sonos's products

26 ¹ Notwithstanding the ITC's findings to contrary, Sonos respectfully submits that
27 Google's insubstantial "design-arounds" continue to infringe all five of the Sonos
28 patents asserted in that investigation either literally or under the doctrine of
equivalents and Sonos reserves the right to pursue such infringement in this case.

1 themselves while subsidizing the prices of Google’s patent-infringing products to
2 flood the market. These actions have caused and continue to cause significant
3 damage to Sonos as Sonos has been forced to compete in the marketplace against
4 its own patented technology being sold by Google at a loss as a part of a broader
5 strategy to enter every American home.

6 9. Sonos has brought this lawsuit to hold Google accountable for its
7 willful infringement of Sonos’s patent rights.

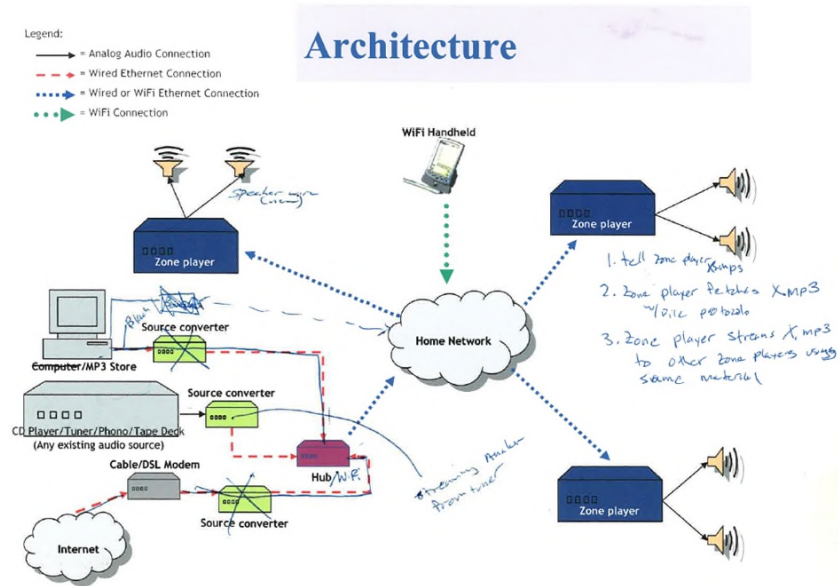
8 **SONOS’S INNOVATION**

9 10. Founded in 2002, Sonos invented what is known today as wireless
10 multi-room audio. Ex. 6 (2013 *NBC News*: “If you’re not familiar with Sonos,
11 this company revolutionized the home audio world a decade ago...”); Ex. 7
12 (2015 *Men’s Journal*: “Sonos almost singlehandedly established the stand-alone
13 wireless home speaker system category....”).

14 11. At the time of Sonos’s founding, multi-room audio systems were
15 dependent on a centralized receiver hard-wired to each individual passive speaker
16 throughout a home or business. In sharp contrast, Sonos’s system eliminated this
17 dependency and, instead, relies on intelligent, networked playback devices to
18 deliver premium sound wirelessly throughout a home or business. While
19 conquering the challenge of inventing a multi-room wireless audio system was
20 difficult in its own right, Sonos also built a system that is easy to setup, easy to
21 use, customizable, readily integrated with other technologies and services, and
22 effective in delivering outstanding sound quality in any home or business
23 environment. *See, e.g.*, Ex. 8 (2005 *PC Magazine*: describing one of Sonos’s first
24 products as “the iPod of digital audio” for the home and contrasting Sonos with
25 conventional home audio systems that required “dedicated wiring”).

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1 12. An early sketch of Sonos's wireless multi-room audio architecture is
2 shown below:



14 13. Sonos launched its first commercial products in 2005 and has since
15 released a wide variety of wireless multi-room audio products, including, for
16 example, the Play:1, Play:3, Play:5, One, One SL, Move, Move 2, Roam, Roam
17 SL, Era 100, Era 300, Playbar, Playbase, Beam, Ray, Sub, Connect, Port,
18 Connect:Amp, Amp, Five, and Arc. See, e.g., Ex. 9. Sonos's products can be set
19 up and controlled by the Sonos app. *Id.*

20 14. A sampling of Sonos's product lineup is shown below.



1 15. Sonos’s products are consistently hailed as setting the standard for
2 the industry. *See, e.g.*, Ex. 10 (2018 *Digital Trends*: “Sonos is the king of
3 multiroom audio”); Ex. 11 (2019 *What Hi-Fi*: “[N]o multi-room offering is
4 as complete or as pleasurable to live with as Sonos.”).

5 16. Sonos’s products are also compatible with many different third-party
6 music streaming services, and Sonos has entered into partnerships with dozens of
7 them to integrate their services into the Sonos platform. *See, e.g.*, Ex. 12. For
8 example, in 2013, Sonos started working closely with Google to integrate the
9 Google Play Music streaming service, and Google Play Music launched on the
10 Sonos platform in 2014 (with Google’s YouTube Music service added later). *See,*
11 *e.g.*, Ex. 13. As recognized at the time, Sonos’s integration work with Google
12 was especially “deep” and gave Google a wide aperture through which to view
13 Sonos’s proprietary technology. *Id.* (2014 *Wired*: “Now, Google Play Music will
14 be available as an option to Sonos owners via the Sonos controller app (iOS,
15 Android, and web). And, for the first time, the Google Play Music Android app is
16 getting updated with a button that lets users easily play music from any Sonos
17 speaker in the house. This is the first time this sort of deep integration has
18 happened between a third party music service and Sonos.”).

19 17. As a pioneer in wireless audio, Sonos has been and continues to be at
20 the forefront of technological innovation and diligently protects its inventions.
21 Leading outside organizations have recognized the value of Sonos’s ingenuity.
22 For example, Sonos earned a spot on the IPO list of “Top 300 Organizations
23 Granted U.S. Patents” and the IEEE recognized Sonos as having one of “[t]he
24 technology world’s most valuable patent portfolios.” *See* Exs. 14, 15. Currently,
25 Sonos is the owner of more than 1,500 United States patents related to audio
26 technology. Sonos’s patents cover important aspects of wireless multi-room
27 audio systems, such as setting up a playback device on a wireless local area
28 network, managing and controlling groups of playback devices (*e.g.*, adjusting

1 group volume of playback devices and pairing playback devices together for
2 stereo sound), synchronizing playback of audio within groups of playback
3 devices, and designating roles or responsibilities to the members of a group of
4 playback devices. These features are covered by the patents-in-suit.

5 18. Sonos identifies many of its patents on the “Patents” webpage of
6 Sonos’s website. *See* Ex. 16. In addition, Sonos encloses notices of its patents
7 with its product inserts/manuals, which state that “[o]ur patent-to-product
8 information can be found here: sonos.com/legal/patents.” *See, e.g.*, Exs. 9, 17.
9 Sonos also provides a link in the Sonos app to sonos.com/en-us/legal/terms
10 through which the “Patents” webpage of Sonos’s website can be accessed. *See*
11 Ex. 18.

12 **GOOGLE’S INFRINGEMENT**

13 19. In 2015, a decade after Sonos’s first product launch, Google released
14 its “Chromecast Audio” – an audio adapter/dongle that can turn a speaker with an
15 auxiliary port into a wireless, networked speaker. While the Chromecast Audio
16 product did not launch with Sonos’s patented multi-room audio functionality,
17 Google clearly understood the importance of this popular audio feature as it
18 released a multi-room audio software update only a couple of months after launch.
19 *See* Ex. 19 (2015 The Guardian: “Google is also working on multi-room audio
20 streaming using the Chromecast Audio, but it will not support the popular feature
21 out of the box.”).

22 20. In announcing its multi-room software update, Google explained the
23 importance of this added functionality:

24 A couple of months ago we launched Chromecast Audio. . . . Today
25 we’re starting to add two new features to the latest software update to
26 elevate your listening experience. . . . Now you can easily fill every
27 room in your home-bedroom, kitchen, living room, or wherever you
28 have a Chromecast Audio connected-with synchronous music. Multi-

1 room lets you group Chromecast Audio devices together so you can
2 listen to the same song on multiple speakers.

3 Ex. 20 (December 2015 *Google Chrome Blog*).

4 21. As observed in a 2015 *Variety* article entitled “Google’s Chromecast
5 Audio Adapter Gets Multi-Room Support Similar to Sonos,” Google’s updated
6 Chromecast Audio was considered a “major” advancement for Google and was
7 recognized as competing directly with Sonos because of its similar multi-room
8 capability:

9 Google’s recently-launched Chromecast Audio adapter is getting a
10 major feature update this week: Consumers will now be able to group
11 multiple Chromecast audio adapters to stream their favorite music
12 simultaneously in more than one room, similar to the multi-room
13 support available for internet-connected loudspeakers like the ones
14 made by Sonos.

15 Ex. 21.

16 22. To control the multi-room Chromecast Audio, Google also provided
17 a Chromecast app with multi-room audio functionality similar to the Sonos app.
18 As observed in a 2015 article by *Pocket-Lint*, Google’s multi-room app “can
19 pretty much do the same thing” as Sonos’s app:

20 [Chromecast Audio]’s been updated to make it more comparable to
21 Sonos, a smart speaker system that wirelessly streams all your Hi-Fi
22 music to any room, or every room. You control your Sonos experience
23 with one app. Well, thanks to a new software rollout, Chromecast
24 Audio can pretty much do the same thing.

25 Ex. 22.

26 23. The media comparisons between Google’s Chromecast Audio and
27 Sonos’s products are a result of the fact that, on information and belief, Google
28 copied key features from Sonos. These features include, for example, Sonos’s

1 patented technology for setting up a playback device on a wireless local area
2 network, adjusting group volume of playback devices, synchronizing playback of
3 audio within groups of playback devices, and designating roles or responsibilities
4 to the members of a group of playback devices.

5 24. Moreover, as explained above, Google released the Chromecast
6 Audio merely two years after partnering with Sonos to integrate Google Play
7 Music into the Sonos platform. On information and belief, Google exploited the
8 knowledge of Sonos's system that it gained from this integration work to develop
9 its multi-room Chromecast Audio product and infringe Sonos's patents.

10 25. Over the next four years, Google aggressively expanded its line of
11 multi-room wireless audio products through new product releases and software
12 updates. On information and belief, with each iteration, Google's copying of
13 Sonos's products and patented technology became even more blatant.

14 26. For example, on information and belief, in 2016, a year after Google
15 launched the Chromecast Audio wireless adapter, Google escalated its copying of
16 Sonos by releasing the Google Home multi-room audio player (which was
17 controlled by Google's rebranded multi-room controller app – the Google Home
18 app). Unlike the Chromecast Audio, the Google Home added an internal speaker
19 driver making it an “all-in-one” audio player akin to Sonos's prior Play:1, Play:3,
20 and Play:5 products.

21 27. As with the Chromecast Audio, the Google Home was recognized as
22 a direct attack on Sonos. When the Google Home was announced, for example,
23 *The Register* observed that “[n]o market is safe from [the] search engine monster”
24 and that Google was in particular “offering new products to compete with Sonos
25 in the music streaming market.” *See Ex. 23. The Register* also further noted the
26 conspicuous similarity that multiple “Google Homes will work with one another,
27 allowing music to be spread into different rooms on command - like the very
28 popular Sonos music system.” *Id.*

1 28. Like *The Register*, *The Verge* also recognized the similarities
2 between the new infringing Google Home and Sonos’s prior products: “You can
3 also group multiple Home units together and play music through all of them
4 simultaneously, similar to how Sonos works.” *See* Ex. 24.

5 29. Again, the media comparisons between Google’s Home and Sonos’s
6 products reflected a darker truth that, on information and belief, Google had
7 misappropriated Sonos’s innovations. These innovations include, for example,
8 Sonos’s patented technology for setting up a playback device on a wireless local
9 area network, adjusting group volume of playback devices, synchronizing
10 playback of audio within groups of playback devices, and designating roles or
11 responsibilities to the members of a group of playback devices. Notably, Google
12 launched the Google Home product in November 2016 despite Sonos’s prior
13 warnings of infringement in August and October, as set forth below.

14 30. On information and belief, the Google Home proved to be merely
15 another forerunner to further copying by Google. In 2017, Google released two
16 additional “all-in-one” wireless multi-room products – the Google Home Max and
17 the Google Home Mini. Google’s Home Max in particular was seen as a “Sonos
18 Clone” and a “not-so-subtle copy of the [Sonos] Play:5 speaker” Ex. 25. As
19 explained by *Gizmodo*, “[i]t’s also hard not to see the [Google Home Max] device
20 as something of a jab at Sonos.” *Id.*; *see also, e.g.*, Ex. 26 (2017 *Android Central*:
21 “You can’t help but look at Google Home Max . . . and come to the conclusion
22 that Google is sticking its nose where Sonos has been for years.”).

23 31. As with Google’s other prior infringing products, on information and
24 belief, Google also copied Sonos’s patented technology for the Google Home
25 Max. This patented technology includes, for example, Sonos’s patented
26 technology for setting up a playback device on a wireless local area network,
27 adjusting group volume of playback devices, synchronizing playback of audio
28 within groups of playback devices, and designating roles or responsibilities to the

1 members of a group of playback devices. With the Google Home Max, however,
2 Google copied even more of Sonos's patented technology than it did with
3 Google's previous wireless audio products. For instance, the Google Home Max
4 also copied Sonos's patented "pairing" technology, which allows two playback
5 devices to be paired together for stereo sound.

6 32. In contrast to the Google Home Max, which was priced similarly to
7 Sonos's comparable products, the Google Home Mini predatorily implemented
8 Sonos's valuable patented technology into an all-in-one wireless multi-room
9 product that Google sells at a subsidized price point or even gives away for free.
10 Ex. 27 ("At \$49, Google Home Mini works on its own or you can have a few
11 around the house, giving you the power of Google anywhere in your home."); Ex.
12 28 ("Google partnered with Spotify to offer Home Minis as a free promotion for
13 Spotify Premium customers. Spotify's premium userbase is nearly 90 million, so
14 if even a fraction of users take the free offer, a massive influx of Google smart
15 speakers will enter the market."). As is well understood, Google uses its Home
16 Mini as a "loss leader" to generate additional revenue from other revenue streams
17 that are bolstered and/or enabled by the sale of Google's wireless multi-room
18 audio products. *See, e.g.*, Ex. 28 (explaining that Google is using its smart
19 speaker devices as a "loss leader" to support advertising or e-commerce.).

20 33. As explained further below, Google has continued to expand its suite
21 of infringing products since 2017 including after Sonos initiated this suit and the
22 parallel ITC investigation.

23 34. Google's pervasive copying of Sonos's products and patented
24 technology has resulted in an infringing product line that now includes at least the
25 Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV,
26 Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home
27 Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest
28 Audio, and Nest Wifi Point, all of which can be controlled by, for example, the

1 YouTube Music app, the Google Play Music app, and the Google Home app. *See,*
2 *e.g.*, Exs. 29-39, 111-113.²

3 35. The image below shows a few of the infringing Google Audio
4 Players on the left and some of Sonos's prior products on the right.



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10 36. In addition to providing the various software Google Apps for
11 controlling the Google Audio Players, Google also offers various infringing
12 hardware controller devices that are pre-installed with the Google Play Music app
13 and/or YouTube Music app (and capable of downloading and executing the
14 Google Apps that are not pre-installed). These infringing hardware controller
15 devices include, for example, Google's "Pixel" phones, tablets, and laptops (*e.g.*,
16 the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel
17 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel
18 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL,
19 and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the
20 Pixelbook and Pixelbook Go laptops) (individually or collectively, "Google Pixel
21 Device(s)"). Google also makes the infringing Google Apps available to be
22 downloaded and installed on user devices not manufactured by Google itself
23 including iOS-compatible devices, such as iPhones and iPads, and devices
24 manufactured by Samsung, such as Samsung mobile phones, among others. *See,*
25 *e.g.*, Exs. 40-43.³

26 ² Any reference to a "Google Audio Player" or a "Google App" includes each
27 version and generation of such player/app unless otherwise noted.

28 ³ Any reference to a "Google Pixel Device" includes each version and generation
of such device unless otherwise noted.

1 37. Herein, “Google Wireless Audio System” refers to one or more
2 Google Audio Players, one or more Google Pixel Devices, and/or one or more
3 Google Apps.

4 **FOR YEARS, SONOS ATTEMPTED TO REMEDY GOOGLE’S**
5 **INFRINGEMENT WITHOUT TURNING TO THE COURTS**

6 38. Since 2015, Google’s misappropriation of Sonos’s patented
7 technology has proliferated. Over the years, Google has expanded its wireless
8 multi-room audio suite of products to more than a dozen infringing products,
9 including:

- 10 • Chromecast
- 11 • Chromecast Ultra
- 12 • Chromecast Audio
- 13 • Chromecast with Google TV
- 14 • Google TV Streamer (4K)
- 15 • Pixel Tablet with Charging Speaker Dock
- 16 • Home Mini
- 17 • Nest Mini
- 18 • Home
- 19 • Home Max
- 20 • Home Hub
- 21 • Nest Hub
- 22 • Nest Hub Max
- 23 • Nest Audio
- 24 • Nest Wifi Point
- 25 • Google Home App
- 26 • Google Play Music App
- 27 • YouTube Music App
- 28 • Pixel phones

- 1 • Pixel tablets
- 2 • Pixel laptops

3 39. Google has persisted in its infringement even though Sonos has
4 warned Google of its infringement on at least ten separate occasions dating back
5 to 2016.

6 40. For example, in 2016 (a year after Google launched the Chromecast
7 Audio wireless adapter), Google released the Google Home multi-room audio
8 player (which was controlled by Google’s rebranded multi-room controller app –
9 the Google Home app). Unlike the Chromecast Audio, the Google Home added
10 an internal speaker driver making it an “all-in-one” audio player akin to Sonos’s
11 prior Play:1, Play:3, and Play:5 products.

12 41. Sonos raised the issue of infringement as to these products with
13 Google as early as August 2016. Sonos hoped that Google would respect Sonos’s
14 intellectual property and Sonos’s extensive investment in developing its products.
15 But Google did no such thing.

16 42. On September 2, 2016, Sonos sent John LaBarre and Allen Lo at
17 Google a document identifying 24 issued Sonos patents and 4 allowed Sonos
18 patent applications, including the ’258 Patent, the ’949 Patent, the ’014 Patent,
19 and the ’959 Patent asserted here. Ex. 114.

20 43. On October 13, 2016, Sonos sent John LaBarre, Allen Lo, and Louis
21 Sorell at Google a document identifying 22 issued Sonos patents and 6 allowed
22 Sonos patent applications, including again the ’258 Patent, the ’949 Patent,
23 the ’014 Patent, and the ’959 Patent and identifying relevant Google products for
24 each. Ex. 115.

25 44. On October 26, 2016, Sonos sent John LaBarre at Google a
26 PowerPoint presentation identifying 29 issued Sonos patents and 3 allowed Sonos
27 patent applications, including yet again the ’258 Patent, the ’949 Patent, the ’014
28 Patent, and the ’959 Patent. Ex. 116.

1 45. On January 31, 2018, Sonos sent Matthew Gubiotti at Google a
2 PowerPoint presentation identifying 16 issued Sonos patents and 1 allowed Sonos
3 patent application, including the '959 Patent and the '949 Patent, and identifying
4 relevant Google products for each, including products accused in this case. Ex.
5 117.

6 46. On July 12, 2018, Sonos sent John LaBarre and Matthew Gubiotti at
7 Google a document identifying 58 issued Sonos patents, including yet again
8 the '258 Patent, the '949 Patent, the '014 Patent, and the '959 Patent and
9 identifying relevant Google products for each.

10 47. On February 22, 2019, Sonos sent Matthew Gubiotti, Bradley Riel,
11 and Tim Kowalski at Google a letter enclosing a link to an electronic repository
12 containing 100 claim charts detailing Google's infringement of 92 issued Sonos
13 patents and 8 allowed Sonos patent applications, including the '258 Patent,
14 the '949 Patent, the '014 Patent, the '953 Patent, the '959 Patent, and the '715
15 Patent asserted here.

16 48. On June 13, 2019, Sonos sent Bradley Riel and Tim Kowalski at
17 Google a PowerPoint presentation reiterating the 100 claim charts detailing
18 Google's infringement of 92 issued Sonos patents and 8 allowed Sonos patent
19 applications sent on February 22, 2019 and identifying 6 issued Sonos patents,
20 including again the '258 Patent and the '949 Patent and identifying relevant
21 Google products for each.

22 49. On January 6, 2020, Sonos sent Bradley Riel and Tim Kowalski at
23 Google a pre-filing copy of an International Trade Commission Complaint, and a
24 pre-filing copy of the Original Complaint for this case, which included claim
25 charts detailing Google's infringement of the '258 Patent, the '953 Patent,
26 the '959 Patent, the '949 Patent, and the '896 Patent.

27 50. However, despite these consistent and repeated warnings of
28 infringement, Google did not stop infringing or even seriously engage in licensing

1 discussions. Instead, Google doubled down and introduced new infringing
2 products, making use of even more of Sonos’s patented technology.

3 51. For example, in 2016 and 2017, nearly eight years after Sonos
4 introduced its first all-in-one audio player – the Play:5 – Google released its all-
5 in-one audio players – the Google Home, Google Home Max, and the Google
6 Home Mini. Google’s Home Max in particular was seen as a “Sonos Clone” and
7 a “not-so-subtle copy of the [Sonos] Play:5 speaker...” Ex. 25. As explained by
8 Gizmodo, “[i]t’s also hard not to see the [Google Home Max] device as
9 something of a jab at Sonos.” *Id.*; *see also, e.g.*, Ex. 26 (2017 Android Central:
10 “You can’t help but look at Google Home Max... and come to the conclusion that
11 Google is sticking its nose where Sonos has been for years.”).

12 52. Nothing Sonos did, including filing this suit or the parallel ITC
13 proceeding described below, deterred Google from expanding its infringement.

14 **GOOGLE’S CONTINUED INFRINGEMENT FORCED THIS SUIT AND**
15 **THE ITC INVESTIGATION**

16 53. In order to hold Google accountable for its willful infringement of
17 Sonos’s patents, in January 2020, Sonos filed this suit and a parallel complaint
18 asking the ITC to institute an investigation into Google’s unlawful importation
19 into, and sale in, the United States of infringing products. The ITC instituted an
20 investigation, *In re Certain Audio Players and Controllers, Components Thereof,*
21 *and Products Containing Same*, Inv. No. 337-TA-1191, to determine whether
22 Google’s audio players and controllers infringe the ’258 Patent, the ’953 Patent,
23 the ’949 Patent, the ’959 Patent, and the ’896 Patent, which are five of the patents
24 asserted in this case.

25 54. This case was stayed pending the completion of the ITC
26 investigation.

27 55. During the ITC Investigation, Google unabashedly continued to
28 increase its infringement. For example, press reports indicated that Google was

1 introducing new products and changes that meant that Google is “one step closer
2 to replacing your Sonos system.” Ex. 118; *see also* Ex. 119 (“The new
3 functionality appears to be the most direct challenge to the likes of Sonos, which
4 has enjoyed enormous success by creating a series of connected speakers and
5 soundbars that can play music simultaneously – or individually.”). The press
6 similarly noted that Google’s new Nest Audio speaker “could be a new rival for
7 the likes of the Sonos One, the best smart speaker you can buy in 2020.” Ex. 120;
8 *see also* Ex. 119 (“Just like Sonos, you can also change the volume on each
9 speaker individually from the main interface.”). And press reports indicated that
10 Google expanded its use of Sonos’s stereo pair technology into new smart
11 speakers even though Google was being sued for infringing Sonos’s ’959 Patent
12 directed to this technology. Exs. 119, 121.

13 56. Google’s aggressive and deliberate expansion of its use of Sonos’s
14 patented technology has led observers to conclude that “[n]o market is safe from
15 [the] search engine monster” and that Google was specifically “offering new
16 products to compete with Sonos in the music streaming market.” *See* Ex. 23.

17 57. During the ITC investigation, Google developed “redesigned”
18 versions of its infringing products with minor, insubstantial design changes in an
19 attempt to avoid an ITC remedy resulting from its infringement of the ’258 Patent,
20 the ’953 Patent, the ’949 Patent, the ’959 Patent, and the ’896 Patent.

21 58. The ITC investigation concluded with a final determination that
22 Google’s original products infringed each of the ’258 Patent, the ’953 Patent,
23 the ’949 Patent, the ’959 Patent, and the ’896 Patent, but that its “redesigned”
24 versions of the accused products did not infringe any of the ’258 Patent, the ’953
25 Patent, the ’949 Patent, the ’959 Patent, and the ’896 Patent. Further, the ITC’s
26 final determination concluded that each of the ’258 Patent, the ’953 Patent,
27 the ’949 Patent, the ’959 Patent, and the ’896 Patent were not invalid.
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GOOGLE’S INFRINGEMENT HAS BEEN WILLFUL

59. Sonos warned Google two more times during and after the ITC investigation that Google was continuing to infringe the patents Sonos already told Google about from 2016-2020, as well as many more of Sonos’s patents.

60. For example, on August 13, 2021, Sonos sent a letter to Renny Hwang, Patrick Weston, Tim Kowalski, and Bradley Riel at Google explaining that Google was still infringing the patents Sonos told Google about from 2016-2020, including the patents charted against Google in 2019, as well as many others, including the ’014 Patent, the ’258 Patent, the ’959 Patent, the ’949 Patent, the ’896 Patent, the ’953 Patent, the ’715 Patent, the ’001 Patent, the ’025 Patent, and the ’883 Patent. Ex. 128.

61. And on December 4, 2023, Sonos sent a letter to Patrick Weston and Tim Kowalski at Google explaining that Google was still infringing the patents Sonos told Google about from 2016-2021, as well as many others, including the ’014 Patent, the ’258 Patent, the ’959 Patent, the ’949 Patent, the ’896 Patent, the ’953 Patent, the ’715 Patent, the ’001 Patent, the ’025 Patent, and the ’883 Patent. Ex. 129.

62. As it had done with Sonos’s prior notices of infringement, Google ignored these notices and continued to infringe, including by commercially releasing the redesigned versions of its products.

63. The final determination by the ITC should have sent a clear message to Google that Google was misappropriating Sonos’s patents rights and should stop its willful infringement. Instead, Google commercially released its “redesigned” products even though Google knew that those “redesigned” products infringed numerous other Sonos patents, including patents that Sonos had warned Google it was infringing, such as the ’715 Patent, the ’001 Patent, the ’014 Patent, the ’025 Patent, and the ’883 Patent. And for products that were not subject to the ITC investigation, like iOS or Samsung versions of the Google Apps, Google

1 made no changes at all, even though these versions of the Google Apps contained
2 the same features that were adjudicated as infringing by the ITC.

3 64. More specifically, Google did not introduce “redesigned” versions of
4 all of its products. Instead, Google only introduced “redesigned” versions of
5 products that were within the limited scope of the ITC investigation, like versions
6 of the Google Home App that run on Google’s Pixel phones, tablets, and
7 computers. This meant that, for example, Google continued to infringe at least
8 the ’949 Patent and the ’896 Patent by providing versions of the Google Home
9 App designed to run on non-Google manufactured phones, tablets, and computers,
10 like iOS and Samsung devices. These versions of the Google Home App, for
11 example, still contained the features that were found to practice the asserted
12 claims of the ’949 Patent and ’896 Patent in the ITC investigation. In this way,
13 Google continued to deliberately infringe these patents even after the ITC had just
14 adjudged Google as an infringer.

15 65. And despite commercially releasing “redesigned” versions for some
16 products, Google decided to keep the infringing features in its other products
17 because they are superior features and drive consumer demand. In fact, when
18 Google removed the features found to infringe the ’949 Patent from some of its
19 products, consumers instantly complained that these products were now inferior.

20 66. Worse, Google completely ignored the fact that the “redesigned”
21 versions of its products infringe other Sonos patents, including the additional
22 patents asserted by way of its First Amended Complaint and this Second
23 Amended Complaint, which Sonos put Google on notice of prior to Google’s
24 release of those “redesigned” versions. In this way, Google plowed forward with
25 its “redesigned” products knowing they still infringe many of Sonos’s patents that
26 Sonos already brought to Google’s attention, including the ’014 Patent, ’715
27 Patent, ’001 Patent, ’025 Patent, and ’883 Patent, which are now asserted in this
28 case.

1 67. Still further, as soon as the '949 Patent expired, Google added back
2 the features that were found to practice the asserted claims of the '949 Patent.
3 This included adding back group volume control features to Google's Nest Hub
4 displays and to Android versions of the Google Home App designed to run on
5 Google-manufactured phones, tablets, and computers, like Google's Pixel
6 products. But Google ignored the fact that these features still practice the non-
7 expired '014 Patent, which Sonos put Google on notice of as far back as 2016.

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1 68. The foregoing establishes that Google was, over at least an eight-year
 2 period, repeatedly put on notice of Sonos’s patents, including each of the eight
 3 patents now asserted in this case, as they relate to the specific products accused in
 4 this case. The following chart illustrates the notices Google has received from
 5 Sonos concerning the patents-in-suit.

Pat.	Notice 1	Notice 2	Notice 3	Notice 4	Notice 5	Notice 6	Notice 7	Notice 8	Notice 9	Notice 10
'258 Issued: 11/24/15	9/2/16	10/13/16	10/26/16		7/12/18	2/22/19	6/13/19	1/6/20	8/13/21	12/4/23
'949 Issued: 11/19/13	9/2/16	10/13/16	10/26/16	1/31/18	7/12/18	2/22/19	6/13/19	1/6/20	8/13/21	12/4/23
'014 Issued: 8/4/09	9/2/16	10/13/16	10/26/16		7/12/18	2/22/19			8/13/21	12/4/23
'959 Issued: 12/22/15	9/2/16	10/13/16	10/26/16	1/31/18	7/12/18	2/22/19		1/6/20	8/13/21	12/4/23
'715 Issued: 7/24/18						2/22/19			8/13/21	12/4/23
'896 Issued: 10/8/19								1/6/20	8/13/21	12/4/23
'953 Issued: 2/19/19						2/22/19		1/6/20	8/13/21	12/4/23
'001 Issued: 8/3/21									8/13/21	12/4/23
'025 Issued: 3/30/21									8/13/21	12/4/23
'883 Issued: 1/21/20									8/13/21	12/4/23

24 69. At a minimum, Google’s knowledge and Sonos’s repeated and
 25 persistent disclosure establishes that Google was, for some time periods, at least
 26 willfully blind to the fact that the asserted patents existed and, for other time
 27 periods, had years of actual knowledge of the asserted patents and of Google’s
 28 infringement thereof. Further, this knowledge and repeated and persistent

1 disclosure establishes that Google, for some time periods, had at least failed to
2 investigate whether it infringed the asserted patents despite the existence of a high
3 risk of infringement and, for other time periods, had actual knowledge of a
4 credible and specific allegation of infringement of the asserted patents. In this
5 way, Google was, or at least should have been, aware of each of the asserted
6 patents starting from at least their respective dates of issuance and of its
7 infringement thereof.

8 70. Moreover, Google has been aware of (or, at a minimum, was
9 willfully blind to) Sonos's patents well before August 2016 in view of Sonos's
10 previously-filed patent litigation against D&M (another direct competitor of
11 Sonos and Google) and its infringing Denon HEOS system – *Sonos Inc. v. D&M*
12 *Holdings, Inc.*, C.A. No. 14-1330-RGA (D. Del.) (“the D&M Litigation”). *See*
13 *Ex. 47*. This prior litigation, initiated in 2014, lasted more than three years,
14 garnered media attention across the industry, and resulted in a jury verdict for
15 Sonos on all counts, including, *inter alia*, willful infringement of two of the
16 patents-in-suit asserted here against Google – United States Patent Nos. 8,588,949
17 and 9,195,258. *See, e.g.*, *Ex. 48* (2014 *VentureBeat* article entitled “Sonos sues
18 Denon, alleging wireless speaker patent infringement”); *Ex. 49* (2014 *CNET*
19 article entitled “Sonos sues Denon for ‘copying’ its wireless products”); *Ex. 50*
20 (*Sonos v D&M* jury Verdict Form finding for Sonos on all counts).

21 71. Further, Google has also been aware of (or, at a minimum, was
22 willfully blind to) Sonos's patents well before Sonos provided Google notice of
23 infringement because Google's development of competitive products since the
24 launch of its Google Wireless Audio System in 2015 occurred against the
25 backdrop of: 1) a decade in which Sonos was the recognized pioneer in the
26 wireless audio industry; 2) Google's partnership with Sonos dating to at least as
27 early as 2013; and 3) Sonos's prominent display of its patents on Sonos's website,
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1 and Sonos’s inclusion of a notice of its patents in Sonos’s product
2 inserts/manuals, as well as the Sonos app.

3 **GOOGLE’S UNJUST ENRICHMENT**

4 72. Google’s infringement of Sonos’s patented inventions has paved the
5 way for Google to generate billions of dollars in revenue. A December 2018
6 market report by *Royal Bank of Canada*, for example, concluded that Google has
7 sold over 40 million Google Home devices in the U.S. and that Google generated
8 \$3.4 billion in Google Home revenue in 2018 alone. Ex. 44 at p. 1, 4, 14-15.
9 *Royal Bank of Canada* also found that, as of August 2017, Google had sold more
10 than 55 million Chromecast devices and that Google generated \$998 million in
11 Chromecast revenue in 2018. *Id.* at p. 4, 16. Further, *Royal Bank of Canada*
12 estimated that, in 2018, Google generated \$3.4 billion in Pixel device revenue. *Id.*
13 at p. 4, 16, 18.

14 73. By 2021, RBC estimated that Google will be annually selling over
15 100 million Google Home devices in the U.S. and generating over \$8 billion in
16 Google Home revenue. *Id.* at 4, 14-15. In addition, by 2021, RBC estimated that
17 Google will annually generate \$2.4 billion in Chromecast revenue and nearly \$7
18 billion in Pixel device revenue. *Id.* at 4, 8, 18. Today, Forbes estimates that
19 Google is worth over \$2 trillion dollars. See [https://www.forbes.com/
20 companies/google/](https://www.forbes.com/companies/google/).

21 74. Moreover, the revenue obtained from sale of Google’s hardware
22 devices presents an incomplete picture of the full value to Google, as Google is
23 selling the infringing products at a discount and/or as a “loss leader” to generate
24 future revenue. For instance, on information and belief, Google’s copying of
25 Sonos’s patented inventions has helped and/or will help Google generate
26 significant revenue from the use of Google’s hardware devices including
27 advertising, data collection, and search via the Google Wireless Audio Systems.
28 As the *New York Post* explained, “Amazon and Google both discounted their

1 home speakers so deeply over the holidays that they likely lost a few dollars per
2 unit . . . hoping to lock in customers and profit from later sales of goods and data
3 about buying habits.” Ex. 45. Similarly, *News Without Borders* explained that
4 companies like Google are using their “smart speaker” devices as “‘loss leader[s]’
5 to support advertising” Ex. 28.

6 75. On information and belief, Google’s copying of Sonos’s patented
7 inventions has also helped and/or will help Google generate significant revenue
8 from driving its users to make follow-on purchases such as streaming music
9 subscriptions and retail purchases via the Google Wireless Audio Systems. For
10 example, an *NPR* “smart speaker” survey found that 28% of survey respondents
11 agreed that “[g]etting a Smart Speaker led [them] to pay for a music subscription
12 service,” and Google offered two such subscriptions – Google Play Music and
13 YouTube Music. Ex. 46 at p. 20. Likewise, the *NPR* survey also found that 26%
14 of respondents use their smart speakers “regularly” to “add [items] to shopping
15 list.” *Id.* at p. 15; *see also, e.g.*, Ex. 28 (stating that companies like Google are
16 using their “smart speaker” devices as “‘loss leader[s]’ to support . . . e-
17 commerce.”).

18 76. On information and belief, Google is willfully infringing Sonos’s
19 patents as part of Google’s calculated strategy to vacuum up invaluable consumer
20 data from users and, thus, further entrench the Google platform among its users
21 and fuel its dominant advertising and search platforms.

22 THE PARTIES

23 77. Plaintiff Sonos, Inc. is a Delaware corporation with its principal
24 place of business at 301 Coromar Drive, Goleta, California, 93117. Sonos is the
25 owner of the patents-in-suit.

26 78. Defendant Google LLC is a Delaware limited liability corporation
27 with its principal place of business at 1600 Amphitheatre Parkway, Mountain
28 View, CA 94043. Google LLC also maintains other established places of

1 business, including established places of business in this district at, for example,
2 340 Main St, Venice, CA 90291 and 12422 W Bluff Creek, Playa Vista, CA
3 90094.

4 79. Google LLC is one of the largest technology companies in the world
5 and conducts product development, engineering, sales, and online retail, search,
6 and advertising operations in this district.

7 80. Google LLC directly and/or indirectly develops, designs,
8 manufactures, distributes, markets, offers to sell, sells, and/or imports the
9 infringing Google Wireless Audio System at issue in this litigation in/into the
10 United States, including in the Central District of California, and otherwise
11 purposefully directs infringing activities to this District in connection with its
12 Google Wireless Audio System.

13 **JURISDICTION AND VENUE**

14 81. As this is a civil action for patent infringement arising under the
15 patent laws of the United States, 35 U.S.C. § 1 *et seq.*, this Court has subject
16 matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and
17 1338(a).

18 82. This Court has personal jurisdiction over Google because, pursuant
19 to Fed. R. Civ. P. 11(b)(3), Google has: (1) availed itself of the rights and benefits
20 of the laws of the State of California, (2) transacted, conducted, and/or solicited
21 business and engaged in a persistent course of conduct in the State of California
22 (and in this District), (3) derived substantial revenue from the sales and/or use of
23 products, such as the infringing Google Wireless Audio System, in the State of
24 California (and in this District), (4) purposefully directed activities (directly and/or
25 through intermediaries), such as shipping, distributing, offering for sale, selling,
26 and/or advertising its infringing Google Wireless Audio System, at residents of the
27 State of California (and residents in this District), (5) delivered its infringing
28 Google Wireless Audio System into the stream of commerce with the expectation

1 that the Google Wireless Audio System will be used and/or purchased by
2 consumers, and (6) committed acts of patent infringement in the State of California
3 (and in this District).

4 83. This Court also has personal jurisdiction over Google because it is
5 registered to do business in the State of California and has one or more regular
6 and established places of business in the Central District of California.

7 84. Venue is proper in this District under the provisions of 28 U.S.C. §
8 1400(b) because, as noted above, Google has committed acts of infringement in
9 this district and has one or more regular and established place of business in this
10 district.

11 PATENTS-IN-SUIT

12 Background

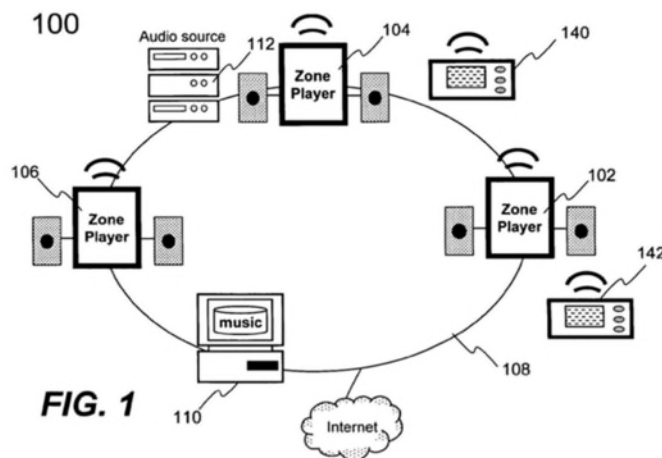
13 85. Sonos was founded to solve various shortcomings in existing
14 conventional audio technology. At the time, a “conventional multi-zone audio
15 system” was based on a “centralized” device that was “hard-wired” to “audio
16 players” in different rooms with dedicated speaker wire. *See, e.g.*, ’949 Patent at
17 1:41-47, 1:57-60; *see also, e.g.*, ’959 Patent at 6:54-61. These “audio players”
18 were basic “speakers” that passively received and outputted audio signals but
19 lacked processing capabilities. *See, e.g.*, ’949 Patent at 1:41-60.

20 86. In this conventional “hard-wired” configuration, each audio player
21 relied on a “centralized” device that managed and controlled the multi-zone audio
22 system. Under this approach, audio sources were either hard-wired to the
23 “centralized” device, which made playing different audio sources at different
24 audio players difficult (if not impossible), or hard-wired locally at a given audio
25 player, which “[made] source sharing difficult.” *See, e.g.*, ’949 Patent at 1:45-56.
26 For example, before an audio player could play audio from a source, a user had to
27 configure the centralized device to route audio to the audio player from the
28 common source. *See, e.g., id.* at 1:50-60.

1 87. In these conventional “hard-wired” systems, it was difficult or
2 impossible to play different audio sources on different audio players, “group” and
3 control audio players, access and play network-based audio sources (e.g., Internet
4 radio), and install and configure the system in the first instance, which required
5 physically connecting every device to the “centralized” device. *See, e.g.*, ’949
6 Patent at 1:34-2:13; ’959 Patent at 6:52-61.

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

12 89. For starters, Sonos provided an unconventional system architecture
13 comprising “zone players” (also referred to as “playback devices”) on a computer
14 data network that were controlled by physical “controller” devices. *See, e.g.*, ’949
15 Patent at FIG. 1; ’258 Patent at FIG 1. The following figure illustrates a
16 simplified diagram of an exemplary Sonos audio system in accordance with this
17 new system architecture, which comprises “zone players” 102, 104, and 106 and
18 “controllers” 140 and 142 coupled to one another by a local data network 108 and
19 two local audio sources 110 and 112 along with a connection to the Internet:



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28 '949 Patent at FIG. 1; *see also, e.g.*, ’258 Patent at FIG. 1.

1 90. Unlike audio players in conventional “centralized,” “hard-wired”
2 multi-zone audio systems, Sonos’s “zone players” were “independent playback
3 devices” with a data network interface and processing intelligence enabling each
4 “zone player” to independently access and play back any audio source available
5 on a local data network or another data network coupled thereto (*e.g.*, the Internet)
6 without a centralized device. *See, e.g.*, ’949 Patent at 4:60-64, 5:2-36, 9:50-52,
7 Claims 1, 8, 15; ’258 Patent at 1:33-44, 2:40-3:22, Claims 1, 11, 17.

8 91. The new, unconventional nature of Sonos’s “zone players”
9 introduced additional technological challenges to Sonos’s system, which required
10 Sonos’s “zone players” to have new intelligence enabling the “zone players” to
11 “share information” with one another so that they could “reproduce audio
12 information synchronously,” among other unconventional capabilities. *See,*
13 *e.g.*, ’258 Patent at 31:34-41. Thus, Sonos’s new system featured “zone players”
14 that could simultaneously play different audio from different sources or be
15 “grouped” together to play the same audio source in a synchronized manner. *See,*
16 *e.g.*, ’258 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, Claims 1, 11, 17; ’949
17 Patent at 2:28-48, 9:49-59, Claims 1, 8, 15. And while operating within a “group,”
18 each “zone player” would be designated to take on certain roles or responsibilities
19 within the “group” of “zone players.” *See, e.g.*, ’001 Patent at 6:58-7:3, 8:2-9:36,
20 Claims 1, 12, 23.

21 92. Further, unlike the “pre-configured and pre-programmed
22 controller[s]” used to control conventional “centralized,” “hard-wired” audio
23 systems, Sonos’s “controller” devices were capable of remotely controlling any
24 “zone player” in a Sonos audio system from anywhere in a user’s house or the like
25 via a data network. *See, e.g.*, ’949 Patent at 6:43-60; *see also, e.g.*, ’258 Patent at
26 5:27-29, 5:38-40, 6:37-46. Building on the intelligence of Sonos’s new “zone
27 players,” Sonos’s “controllers” had new capabilities, including dynamically
28 “grouping the zone players” and “control[ling] the volume of each of the zone

1 players in a zone group individually or together.” ’949 Patent at 6:43-60; *see*
2 *also, e.g.*, ’258 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, 9:17-26, Claims 1,
3 11, 17.

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

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

13 94. Sonos is the owner of U.S. Patent No. 7,571,014 (the “’014 Patent”),
14 entitled “Method and Apparatus for Controller Multimedia Players in a Multi-
15 Zone System,” which was duly and legally issued by the United States Patent and
16 Trademark Office (“USPTO”) on August 4, 2009. A Reexamination Certificate
17 for the ’014 Patent was duly and legally issued by the USPTO on September 1,
18 2017. A copy of the ’014 Patent, including the Reexamination Certificate, is
19 attached hereto as Exhibit 108.

20 95. The ’014 Patent relates generally to devices, computer-readable
21 media, and methods for controlling a plurality of playback devices on a local area
22 network.

23 96. The ’014 Patent recognized problems with conventional multi-zone
24 audio systems. For instance, the ’014 Patent recognized that “conventional multi-
25 zone audio system[s]” were undesirably based on a “centralized” device that was
26 “hard-wired” to “audio players” in different rooms with dedicated speaker wire.
27 *See, e.g.*, ’014 Patent at 1:34-40, 1:50-53. Moreover, because these “conventional
28 multi-zone audio system[s]” were “either hard-wired or controlled by a pre-

1 configured and pre-programmed controller,” it was “difficult for [a conventional]
2 system to accommodate the requirement of dynamically managing the ad hoc
3 creation and deletion of groups,” among other disadvantages of conventional
4 multi-zone audio systems. *See, e.g., id.* at 1:50-2:4.

5 97. In this regard, the ’014 Patent recognized a need for solutions that
6 addressed “the control of [] audio players as a group” *See, e.g., id.* at 2:5-10.
7 In particular, the ’014 Patent recognized “a need for solutions in a multi-zone
8 audio system to control a plurality of audio players and their audio characteristics
9 from one controlling device” *See, e.g., id.* at 2:11-13. The claimed inventions of
10 the ’014 Patent are directed to technology that provides a solution to such needs.
11 *See, e.g., id.* at 2:28-3:34.

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

14 98. Given the state of the art at the time of the inventions of the ’014
15 Patent, including the deficiencies in “centralized,” “hard-wired” multi-zone audio
16 systems of the time, the inventive concepts of the ’014 Patent cannot be
17 considered to be conventional, well-understood, or routine. *See, e.g., ’014 Patent*
18 *at 1:34-2:10.* The ’014 Patent provides an unconventional solution to problems
19 that arose in the context of “centralized,” “hard-wired” multi-zone audio systems
20 – namely, that such systems made it difficult (or impossible) to dynamically group
21 audio players for synchronous playback and dynamically control such grouped
22 audio players. *See, e.g., id.*

23 99. At the core of the ’014 Patent are aspects of Sonos’s unconventional
24 system architecture – a “controller” and a plurality of “players” (*e.g.*, “zone
25 players”) communicating over a “local area network” (LAN). Further, unlike the
26 “pre-configured and pre-programmed controller[s]” used to control conventional
27 “centralized,” “hard-wired” multi-zone audio systems, the ’014 Patent’s
28 “controller” devices were unconventionally capable of controlling any “zone

1 player” in the system from anywhere in a user’s house or business via the LAN,
2 such as by dynamically “grouping the zone players” and “control[ing] the volume
3 of each of the zone players in a zone group individually or together.” *See, e.g., id.*
4 at 7:25-43.

5 100. In this respect, it was not well-understood, routine, or conventional at
6 the time of the inventions of the ’014 Patent to have a “controller” configured to
7 (i) form a “zone group” that includes a plurality of “players,” where one of the
8 players serves as a “zone group head,” and (ii) “synchroniz[e] all players in the
9 zone group in accordance with the zone group head.” *See, e.g., id.* at Claims 1,
10 25; *see also, e.g., Ex. 8 (2005 PC Mag:* “[Sonos’s ZonePlayers] can play the same
11 music throughout the house, perfectly synchronized. Even though that may seem
12 drop-dead simple, other hubs don’t do it. And you can join multiple rooms to play
13 the same music ... on the fly.”).

14 101. Furthermore, it was not well-understood, routine, or conventional at
15 the time of the inventions of the ’014 Patent to have a “controller” configured to
16 (i) display a “zone group” that includes a plurality of “players” and (ii) adjust a
17 “volume meter” for the group of players that is “represented by an averaged value
18 of audio volumes of the players in the group,” which includes “changing a volume
19 of each of the group of players synchronously in accordance with an adjustment
20 made by a user.” *See, e.g., ’014 Patent* at Claims 1, 16, 25, 38; *see also, e.g., Ex.*
21 *8 (2005 PC Mag:* “Press the volume-down button, then slide the scroll wheel to
22 select each room and set the volume for it. Once you’re back to using the master
23 volume control, the volume rises or falls relative to each room’s existing setting.
24 These are [] brilliant touches”).

25 102. These are just exemplary reasons why the inventions claimed in
26 the ’014 Patent were not well-understood, routine, or conventional at the time of
27 their invention.
28

1 103. The unconventional nature of the '014 Patent has also been
2 confirmed by wide-spread industry praise for the patented technology of the '014
3 Patent as an advancement in the field of home audio, as set forth below.

4 104. Notably, the District Court of Delaware held that the claimed
5 inventions of the '014 Patent are “patent-eligible subject matter under § 101.” *See*
6 *Ex. 51* at p. 13. In particular, the district court recognized that the claimed
7 inventions of the '014 Patent “represent[] a substantial improvement over the
8 existing technology” that “provides for capabilities far beyond what a traditional
9 hardwired system offers.” *Id.* at p. 12.

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

17 106. Moreover, the innovative and unconventional nature of the '014
18 Patent was confirmed by the validity findings in the D&M Litigation (*see Ex. 50*)
19 and the '014 Patent reexamination proceeding (*see Ex. 108*).

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

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

1 relative to each room’s existing setting. These are the brilliant touches” See
2 Ex. 8. As another example, in 2005, *Playlist* lauded Sonos’s “Controller” for its
3 “stand[] out” interface that enables dynamic grouping of Sonos players and
4 volume control. See Ex. 52. Likewise, in 2008, *Gizmodo* praised Sonos for the
5 ability to “[c]hange the volume in a single room, or in all your rooms at once, all
6 from the Sonos Controller.” See Ex. 53. A few years later, in 2012, *Pocket-lint*
7 touted Sonos’s patented group volume technology as “simple but clever.” See
8 Ex. 54.

9 108. Recognizing the advantages of Sonos’s patented group volume
10 control technology, competitors in the industry, including Google, have
11 incorporated Sonos’s technology into their products and marketed to their
12 customers the features that the technology enables. For example, Google’s
13 website included a webpage entitled “How to change the volume of an audio
14 group,” which touts the ability “[t]o adjust the **volume of all speakers in a**
15 **group**” and “[t]o adjust a **single speaker’s volume** when it’s part of a group” in a
16 Google Wireless Audio System. See Ex. 55 (emphasis in original). As explained
17 by Google, “[c]hanging the **group volume** . . . will change the volume of all
18 speakers within the group.” *Id.* (emphasis in original). In contrast, Google
19 explained that “[c]hanging a **single speaker’s volume** when it’s part of a
20 group . . . will only change that individual speaker.” *Id.* (emphasis in original).
21 As another example, Google’s website also includes a webpage entitled “Create
22 and manage speaker groups,” which touts the ability to “control group members
23 volume” in a Google Wireless Audio System. See Ex. 29.

24 109. The media has also recognized the importance of Sonos’s patented
25 group volume control technology to Google and its customers. For example, in
26 explaining that “[o]ne of the great advantages of having several Google Home
27 speakers is the ability to play the same music throughout your house,” the *Verge*
28 also touted Google’s group and individual volume features. See Ex 56.

1 Specifically, the *Verge* explained that you can control group volume if you “go to
2 your Home app and tap on the name of your group,” and that “[i]f you want to
3 raise or lower the volume on a specific speaker in the group, just tap on the icon
4 for that speaker on the main screen on the Home app.” *Id.*

5 **U.S. Patent No. 8,588,949**

6 110. Sonos is the owner of U.S. Patent No. 8,588,949 (the “’949 Patent”),
7 entitled “Method and Apparatus for Adjusting Volume Levels in a Multi-Zone
8 System,” which was duly and legally issued by the USPTO on November 19,
9 2013. A Reexamination Certificate for the ’949 Patent was duly and legally
10 issued by the USPTO on November 5, 2015. A copy of the ’949 Patent, including
11 the Reexamination Certificate, is attached hereto as Exhibit 1.

12 111. The ’949 Patent relates generally to devices, computer-readable
13 media, and methods for controlling a plurality of playback devices on a local area
14 network.

15 112. The ’949 Patent recognized problems with conventional multi-zone
16 audio systems. For instance, the ’949 Patent recognized that “conventional multi-
17 zone audio system[s]” were undesirably based on a “centralized” device that was
18 “hard-wired” to “audio players” in different rooms with dedicated speaker wire.
19 *See, e.g.*, ’949 Patent at 1:41-47, 1:57-60. Moreover, because these “conventional
20 multi-zone audio system[s]” were “either hard-wired or controlled by a pre-
21 configured and pre-programmed controller,” it was “difficult for [a conventional]
22 system to accommodate the requirement of dynamically managing the ad hoc
23 creation and deletion of groups,” among other disadvantages of conventional
24 multi-zone audio systems. *See, e.g., id.* at 1:57-2:12.

25 113. In this regard, the ’949 Patent recognized “a need for dynamic
26 control of [] audio players as a group” and a solution that allowed “audio players
27 [to] be readily grouped” with “minimum manipulation.” *See, e.g., id.* at 2:13-15.
28 In particular, the ’949 Patent recognized “a need for user interfaces that may be

1 readily utilized to group and control [] audio players.” *See, e.g., id.* at 1:15-18.

2 The claimed inventions of the ’949 Patent are directed to technology that provides
3 a solution to such needs. *See, e.g., id.* at 2:65-3:3.

4 **The Inventions Claimed in U.S. Patent No. 8,588,949 Improved Technology**
5 **& Were Not Well-Understood, Routine, or Conventional**

6 114. Given the state of the art at the time of the inventions of the ’949
7 Patent, including the deficiencies in “centralized,” “hard-wired” multi-zone audio
8 systems of the time, the inventive concepts of the ’949 Patent cannot be
9 considered to be conventional, well-understood, or routine. *See, e.g., ’949 Patent*
10 *at 1:26-2:12.* The ’949 Patent provides an unconventional solution to problems
11 that arose in the context of “centralized,” “hard-wired” multi-zone audio systems
12 – namely, that such systems made it difficult (or impossible) to dynamically group
13 audio players for synchronous playback and dynamically control such grouped
14 audio players. *See, e.g., id.* at 1:57-2:12.

15 115. At the core of the ’949 Patent are aspects of Sonos’s unconventional
16 system architecture – a “controller” and a plurality of “independent playback
17 devices” (*e.g.*, “zone players”) communicating over a “local area network”
18 (LAN). Further, unlike the “pre-configured and pre-programmed controller[s]”
19 used to control conventional “centralized,” “hard-wired” multi-zone audio
20 systems, the ’949 Patent’s “controller” devices were unconventionally capable of
21 controlling any “zone player” in the system from anywhere in a user’s house or
22 business via the LAN, such as by dynamically “grouping the zone players” and
23 “control[ling] the volume of each of the zone players in a zone group individually
24 or together.” *See, e.g., ’949 Patent at 6:43-60.*

25 116. In this respect, it was not well-understood, routine, or conventional at
26 the time of the inventions of the ’949 Patent to have a “controller” configured to
27 (i) provide a user interface for a “player group” that includes a plurality of
28 “players,” each being an “independent playback device,” and (ii) accept an input

1 to facilitate formation of the “player group” for “synchronized playback of a
2 multimedia output from the same multimedia source.” *See, e.g.*, ’949 Patent at
3 Claims 1, 8, 15; *see also, e.g.*, Ex. 8 (2005 *PC Mag*: “[Sonos’s ZonePlayers] can
4 play the same music throughout the house, perfectly synchronized. Even though
5 that may seem drop-dead simple, other hubs don’t do it. And you can join
6 multiple rooms to play the same music . . . on the fly.”).

7 117. Furthermore, it was not well-understood, routine, or conventional at
8 the time of the inventions of the ’949 Patent to have a “controller” configured to
9 (i) accept, for any individual “player” in a “player group,” a player-specific input
10 to adjust the volume of that individual “player,” where the player-specific input
11 causes that individual “player” to adjust its volume and (ii) accept a “group-level”
12 input to adjust a volume associated with the “player group,” where the player-
13 specific input causes each of the “players” in the “player group” to adjust its
14 respective volume. *See, e.g.*, ’949 Patent at Claims 1, 8, 15; *see also, e.g.*, Ex. 8
15 (2005 *PC Mag*: “Press the volume-down button, then slide the scroll wheel to
16 select each room and set the volume for it. Once you’re back to using the master
17 volume control, the volume rises or falls relative to each room’s existing setting.
18 These are [] brilliant touches”).

19 118. These are just exemplary reasons why the inventions claimed in
20 the ’949 Patent were not well-understood, routine, or conventional at the time of
21 their invention.

22 119. The unconventional nature of the ’949 Patent has also been
23 confirmed by wide-spread industry praise for the patented technology of the ’949
24 Patent as an advancement in the field of home audio, as set forth below.

25 120. Notably, the District Court of Delaware held that the claimed
26 inventions of the ’949 Patent are “patent-eligible subject matter under § 101.” *See*
27 Ex. 51 at p. 13. In particular, the district court recognized that the claimed
28 inventions of the ’949 Patent “represent[] a substantial improvement over the

1 existing technology” that “provides for capabilities far beyond what a traditional
2 hardwired system offers.” *Id.* at p. 12.

3 121. The district court also recognized that the ’949 Patent’s solutions
4 cannot be performed solely by a human. *See, e.g., id.* at pp. 11-12 (“Defendants’
5 arguments that a human could perform the actions the [controller] device is said to
6 perform is at best illogical.”). Indeed, the ’949 Patent’s claimed solutions are not
7 merely drawn to longstanding human activities at least because they address
8 problems rooted in multi-zone audio systems. *See, e.g., id.* at p. 12 (“This is not
9 simply a ‘more efficient’ method of doing something already done by humans.”).

10 122. Moreover, the innovative and unconventional nature of the ’949
11 Patent was confirmed by the validity findings in the D&M Litigation (*see* Ex. 50)
12 and the ’949 Patent reexamination proceeding (*see* Ex. 1).

13 **The Inventions Claimed in U.S. Patent No. 8,588,949 Provide Important**
14 **Advantages to Wireless Audio Systems**

15 123. The group volume control technology of the ’949 Patent provides
16 significant advantages that are important to wireless audio systems. The
17 advantages of Sonos’s group volume control technology are reflected in the
18 recognition and praise it has received from the press. For example, shortly after
19 Sonos launched its first commercial product in 2005, *PC Magazine* exclaimed:
20 “[Sonos] is the first digital audio hub we can recommend without reservation
21 Once you’re back to using the master volume control, the volume rises or falls
22 relative to each room’s existing setting. These are the brilliant touches” *See*
23 Ex. 8. As another example, in 2005, *Playlist* lauded Sonos’s “Controller” for its
24 “stand[] out” interface that enables dynamic grouping of Sonos players and
25 volume control. *See* Ex. 52. Likewise, in 2008, *Gizmodo* praised Sonos for the
26 ability to “[c]hange the volume in a single room, or in all your rooms at once, all
27 from the Sonos Controller.” *See* Ex. 53. A few years later, in 2012, *Pocket-lint*
28

1 touted Sonos’s patented group volume technology as “simple but clever.” *See*
2 Ex. 54.

3 124. Recognizing the advantages of Sonos’s patented group volume
4 control technology, competitors in the industry, including Google, have
5 incorporated Sonos’s technology into their products and marketed to their
6 customers the features that the technology enables. For example, Google’s
7 website included a webpage entitled “How to change the volume of an audio
8 group,” which touts the ability “[t]o adjust the volume of **all speakers in a**
9 **group**” and “[t]o adjust a **single speaker’s volume** when it’s part of a group” in a
10 Google Wireless Audio System. *See* Ex. 55 (emphasis in original). As explained
11 by Google, “[c]hanging the **group volume** . . . will change the volume of all
12 speakers within the group.” *Id.* (emphasis in original). In contrast, Google
13 explained that “[c]hanging a **single speaker’s volume** when it’s part of a
14 group . . . will only change that individual speaker.” *Id.* (emphasis in original).
15 As another example, Google’s website also includes a webpage entitled “Create
16 and manage speaker groups,” which touts the ability to “control group members
17 volume” in a Google Wireless Audio System. *See* Ex. 29.

18 125. The media has also recognized the importance of Sonos’s patented
19 group volume control technology to Google and its customers. For example, in
20 explaining that “[o]ne of the great advantages of having several Google Home
21 speakers is the ability to play the same music throughout your house,” the *Verge*
22 also touted Google’s group and individual volume features. *See* Ex 56.
23 Specifically, the *Verge* explained that you can control group volume if you “go to
24 your Home app and tap on the name of your group,” and that “[i]f you want to
25 raise or lower the volume on a specific speaker in the group, just tap on the icon
26 for that speaker on the main screen on the Home app.” *Id.*

U.S. Patent No. 9,195,258

1
2 126. Sonos is the owner U.S. Patent No. 9,195,258 (the “’258 Patent”),
3 entitled “System and Method for Synchronizing Operations Among a Plurality of
4 Independently Clocked Digital Data Processing Devices,” which was duly and
5 legally issued by the USPTO on November 24, 2015. A copy of the ’258 Patent
6 is attached hereto as Exhibit 2.

7 127. The ’258 Patent relates generally to devices, systems, and methods
8 for synchronizing audio playback among a group of “zone players.”

9 128. As discussed above, Sonos recognized problems with conventional
10 multi-zone audio systems and introduced a paradigm-shifting system architecture
11 comprising “zone players” that communicated over a data network. The
12 unconventional nature of Sonos’s “zone players” introduced additional
13 technological challenges to Sonos’s system. *See, e.g.*, ’258 Patent at 1:55-2:36.

14 129. For instance, the ’258 Patent recognized the technological challenge
15 of “ensur[ing] that, if two or more audio playback devices are contemporaneously
16 attempting to play back the same audio program, they do so simultaneously.” ’258
17 Patent at 2:17-36. In this respect, the ’258 Patent recognized that “audio playback
18 devices that are being developed have independent clocks, and, if they are not
19 clocking at precisely the same rate, the audio playback provided by the various
20 [playback] devices can get out of synchronization.” *Id.* at 2:32-36. Moreover,
21 the ’258 Patent recognized that “differences in the audio playback devices’ start
22 times and/or playback speeds” “can arise . . . for a number of reasons, including
23 delays in the transfer of audio information over the network,” and that “[s]uch
24 delays can differ as among the various audio playback devices for a variety of
25 reasons, including where they are connected into the network, message traffic,
26 and other reasons” *Id.* at 2:20-27. Consequently, the ’258 Patent recognized
27 that “[s]mall differences in the audio playback devices’ start times and/or
28

1 playback speeds can be perceived by a listener as an echo effect, and larger
2 differences can be very annoying.” *Id.* at 2:20-22.

3 130. In this regard, the ’258 Patent recognized a need for “a new and
4 improved system and method for synchronizing operations among a number of
5 digital data processing devices that are regulated by independent clocking
6 devices.” *See, e.g.*, ’258 Patent at 2:40-43. The claimed inventions of the ’258
7 Patent are directed to technology that provides a solution to such needs. *See, e.g.*,
8 *id.*

9 **The Inventions Claimed in U.S. Patent No. 9,195,258 Improved Technology**
10 **& Were Not Well-Understood, Routine, or Conventional**

11 131. Given the state of the art at the time of the inventions of the ’258
12 Patent, including the deficiencies in centralized, hard-wired multi-zone audio
13 systems of the time, the inventive concepts of the ’258 Patent cannot be
14 considered to be conventional, well-understood, or routine. *See, e.g.*, ’258 Patent
15 at 1:26-2:12. The ’258 Patent provides an unconventional solution to problems
16 that arose in Sonos’s unconventional system architecture comprising “zone
17 players” that communicated over a data network – namely, that such “zone
18 players” have “independent clocks” which makes ensuring synchronized audio
19 playback difficult. *See, e.g., id.* at 2:17-36.

20 132. At the core of the ’258 Patent are aspects of Sonos’s unconventional
21 system architecture – “zone players” and at least one “controller” communicating
22 over a “local area network.” Each “zone player” was unconventionally equipped
23 with a data network interface and intelligence enabling the “zone player” to
24 independently access and play back audio from a variety of network-accessible
25 audio sources and dynamically enter a “group” with one or more other “zone
26 players” for synchronized audio playback based on an instruction from a
27 “controller.” *See, e.g.*, ’258 Patent at FIG. 1, 3:50-61, 4:22-50, 5:10-6:64, Claims
28 1, 11, 17. While “grouped,” the “zone players” were unconventionally capable of

1 sharing particular information over a data network to facilitate “reproduc[ing]
2 audio information synchronously” despite the fact that the “zone players operate
3 with independent clocks” and exchange packets over a data network with
4 “differing delays.” ’258 Patent at 31:34-41.

5 133. In this respect, it was not well-understood, routine, or conventional at
6 the time of the invention of the ’258 Patent to have a “zone player” configured to
7 interface with a LAN and receive from a “controller” over the LAN a direction for
8 the “zone player” to enter into a synchrony group with at least one other “zone
9 player.” *See, e.g.*, ’258 Patent at Claims 1, 11, 17; *see also, e.g.*, Ex. 8 (2005 *PC*
10 *Mag*: “[Sonos’s ZonePlayers] can play the same music throughout the house,
11 perfectly synchronized. Even though that may seem drop-dead simple, other hubs
12 don’t do it. And you can join multiple rooms to play the same music . . . on the
13 fly.”).

14 134. Moreover, it was not well-understood, routine, or conventional at the
15 time of the inventions of the ’258 Patent to have a “zone player” configured to
16 enter into a synchrony group with another “zone player” in which the “zone
17 players” are configured to playback audio in synchrony based at least on (i) audio
18 content, (ii) playback timing information associated with the audio content, and
19 (iii) clock time information for one of the “zone players.” *See, e.g.*, ’258 Patent at
20 Claims 1, 11, 17; *see also, e.g.*, Ex. 6 (2013 *NBC News*: “[Sonos] revolutionized
21 the home audio world a decade ago If you wanted the same song in every
22 room, no problem, the tracks would be perfectly in sync At the time, this was
23 mind blowing. Never before could you get music in every room without drilling a
24 bunch of holes for wires”).

25 135. These are just exemplary reasons why the inventions claimed in
26 the ’258 Patent were not well-understood, routine, or conventional at the time of
27 their invention.
28

1 136. The unconventional nature of the '258 Patent has also been
2 confirmed by wide-spread industry praise for the patented technology of the '258
3 Patent as an advancement in the field of home audio, as set forth below.

4 137. Notably, the Patent Trial and Appeal Board recently confirmed that
5 the '258 Patent is directed not just to unconventional implementations but to truly
6 innovative audio technology. In this regard, the PTAB specifically found that
7 inventions claimed in Sonos's Patent No. 9,213,357 – which cover similar subject
8 matter as the inventions claimed in the '258 Patent – would not have been obvious
9 at the time of their invention. *See* Ex. 57 at pp. 6-7.

10 138. Moreover, the innovative and unconventional nature of the '258
11 Patent was confirmed by the validity findings in the D&M Litigation. *See* Ex. 50.

12 **The Inventions Claimed in U.S. Patent No. 9,195,258 Provide Important**
13 **Advantages to Wireless Audio Systems**

14 139. The grouping and synchronization technology of the '258 Patent
15 provides significant advantages that are important to wireless audio systems. The
16 advantages of Sonos's patented grouping and synchronization technology are
17 reflected in the recognition and praise it has received from the press. For
18 example, in 2005, shortly after Sonos released its first commercial products, *PC*
19 *Magazine* touted the Sonos system for its ability to “play the same music
20 throughout the house, perfectly synchronized.” *See* Ex. 8. Similarly, in 2005, *The*
21 *Wall Street Journal* praised Sonos's system for the ability to “play . . . the same
22 songs, in each room simultaneously.” *See* Ex. 58. As another example, in 2013,
23 *Macworld* exclaimed: “Sonos is the gold standard when it comes to multi-room
24 audio . . . you can drive the system from any computer or handheld device,
25 playing music in sync throughout the house . . .” *See* Ex. 59. Likewise, in 2013,
26 *NBC News* praised Sonos's patented synchronization technology as “mind
27 blowing.” *See* Ex. 6 (“If you're not familiar with Sonos, this company
28 revolutionized the home audio world a decade ago when it launched the first

1 (rather expensive) Sonos kits If you wanted the same song in every room, no
2 problem, the tracks would be perfectly in sync At the time, this was mind
3 blowing. Never before could you get music in every room without drilling a
4 bunch of holes for wires”).

5 140. Recognizing the advantages of Sonos’s patented grouping and
6 synchronization technology, competitors in the industry, including Google, have
7 incorporated Sonos’s patented technology into their products and marketed the
8 features that the technology enables to their customers. For example, as set forth
9 above, when Google updated its first wireless audio product – the Chromecast
10 Audio – to include multi-room audio functionality, Google proclaimed that
11 “[n]ow you can easily fill every room in your home—bedroom, kitchen, living
12 room, or wherever you have a Chromecast Audio connected—with synchronous
13 music. Multi-room lets you group Chromecast Audio devices together so you can
14 listen to the same song on multiple speakers.” *See* Ex. 20. And when Google
15 later added multi-room audio to its original Chromecast for video, Google
16 recognized the customer demand for Sonos’s synchronization: “We heard your
17 feedback, and the Chromecast team is excited to you [*sic*] bring Multi-room audio
18 support for Chromecast devices!” Ex. 60.

19 141. As another example, in advertising the “Multi-room audio”
20 capability of its wireless audio products on its website, Google touts that you can
21 “[g]roup any combination of Google Home, Chromecast Audio, or speakers with
22 Chromecast together for synchronous music throughout the home.” *See, e.g.,* Ex.
23 61. Likewise, Google’s website includes a webpage entitled “Create and manage
24 speaker groups,” which promotes grouping and synchronized audio playback in
25 the very first sentence: “Group any combination of Google Nest or Google Home
26 speakers and displays, Chromecast devices, and speakers with Chromecast built-
27 in together for synchronous music throughout the home.” *See, e.g.,* Ex. 29.
28

1 142. The media has also recognized the importance of Sonos’s patented
2 grouping and synchronization technology to Google and its customers. For
3 instance, *Variety* called Google’s 2015 multi-room software update for
4 Chromecast Audio “a major feature update” that allows “[c]onsumers . . . to group
5 multiple Chromecast audio adapters to stream their favorite music simultaneously
6 in more than one room” Ex. 21. As another example, when Google released
7 the Google Home in 2016, *The Verge* recognized its ability to play audio in
8 synchrony with other Google devices as an important feature that provided
9 Google with an advantage over Amazon: “You can also group multiple Home
10 units together and play music though all of them simultaneously, similar to how
11 Sonos works. Amazon doesn’t yet provide this feature with the Echo.” Ex. 24.
12 Notably, however, Amazon added multi-room to its own products shortly
13 thereafter in 2017. *See* Ex. 86 (2017 *Amazon Press Release*: “New multi-room
14 music feature lets you group multiple Amazon Echo devices for synchronized
15 music streaming in every room.”).

16 **U.S. Patent No. 9,219,959**

17 143. Sonos is the owner of U.S. Patent No. 9,219,959, entitled “Multi
18 Channel Pairing in a Media System,” which was duly and legally issued by the
19 USPTO on December 22, 2015. A Reexamination Certificate for the ’959 Patent
20 was duly and legally issued by the USPTO on April 5, 2017. A copy of the ’959
21 Patent, including the Reexamination Certificate, is attached hereto as Exhibit 3.

22 144. The ’959 Patent relates generally to devices and methods for
23 providing audio in a multi-channel listening environment.

24 145. As with other of the patents-in-suit, the ’959 Patent recognized
25 problems with conventional multi-zone audio systems. For instance, the ’959
26 Patent recognized that conventional multi-zone audio systems were based on a
27 centralized device hard-wired to “individual, discrete speakers” in different rooms
28 that required “physically connecting and re-connecting speaker wire, for example,

1 to individual, discrete speakers to create different configurations.” *See, e.g.*, ’959
2 Patent at 6:54-58. Because these conventional multi-zone audio systems were
3 hard-wired to “individual, discrete speakers,” it was difficult (if not impossible) to
4 “group, consolidate, and pair” the speakers into different “desired configurations”
5 without “connecting and re-connecting speaker wire.” *See, e.g., id.*

6 146. Thus, the ’959 Patent recognized a need for technology that could
7 “provide a more flexible and dynamic platform through which sound reproduction
8 can be offered to the end-user.” ’959 Patent at 6:58-61. The claimed inventions
9 of the ’959 Patent are directed to technology that provides a solution to such
10 needs, thereby providing technology that helps “to achieve or enhance a multi-
11 channel listening environment.” *Id.* at 2:17-19.

12 **The Inventions Claimed in U.S. Patent No. 9,219,959 Improved Technology**
13 **& Were Not Well-Understood, Routine, or Conventional**

14 147. Given the state of the art at the time of the inventions of the ’959
15 Patent, including the deficiencies in centralized, hard-wired multi-zone audio
16 systems of the time that required “physically connecting and re-connecting
17 speaker wire . . . to create different configurations,” the inventive concepts of
18 the ’959 Patent cannot be considered to be conventional, well-understood, or
19 routine. *See, e.g.*, ’959 Patent at 6:54-58. The ’959 Patent provides an
20 unconventional solution to problems that arose in the context of centralized, hard-
21 wired multi-zone audio systems – namely, that the technology of such systems
22 made it difficult (if not impossible) to “group, consolidate, and pair” “individual,
23 discrete speakers” into different “desired configurations.” *See, e.g., id.* In this
24 respect, unlike conventional hard-wired multi-zone audio systems, the ’959 Patent
25 provided unconventional technology including a “controller” with a “control
26 interface” through which “actions of grouping, consolidation, and pairing [were]
27 performed,” and a “playback device” with processing intelligence capable of
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1 being dynamically “pair[ed]” with another playback device to simulate “a multi-
2 channel listening environment.” *See e.g., id.* at 2:16-19, 6:54-58.

3 148. In this respect, it was not well-understood, routine, or conventional at
4 the time of the invention of the ’959 Patent to have a “playback device”
5 comprising a network interface and configured to operate in at least both a first
6 and second “type of pairing.” *See, e.g., ’959 Patent at Claims 4-7, 9-11, 17-20;*
7 *see also, e.g., id.* at 6:54-58.

8 149. Moreover, it was not well-understood, routine, or conventional at the
9 time of the invention of the ’959 Patent to have a “playback device” configured to
10 (i) process audio data before the “playback device” outputs audio, (ii) determine
11 that a type of pairing of the “playback device” comprises one of at least a first
12 type of pairing or a second type of pairing, (iii) perform a first equalization of the
13 audio data before outputting audio based on the audio data when the type of
14 pairing is determined to comprise the first type of pairing, and (iv) perform a
15 second equalization of the audio data before outputting audio when the type of
16 pairing is determined to comprise the second type of pairing. *See, e.g., ’959*
17 *Patent at Claims 4-7, 9-11, 17-20; see also, e.g., id.* at 6:54-58. It was also not
18 well-understood, routine, or conventional at the time of the invention of the ’959
19 Patent to have a “playback device” configured to perform the aforementioned
20 functions as well as being configured to receive an instruction from a “controller”
21 over a network for the “playback device” to “pair” with one or more other
22 “playback devices.” *See, e.g., id.* at Claim 10; *see also, e.g., id.* at 6:54-58.

23 150. These are just exemplary reasons why the inventions claimed in
24 the ’959 Patent were not well-understood, routine, or conventional at the time of
25 their invention.

26 151. The unconventional nature of the ’959 Patent has also been
27 confirmed by wide-spread industry praise for the patented technology of the ’959
28 Patent as an advancement in the field of home audio, as set forth below.

1 152. Notably, the District Court of Delaware held that the claimed
2 inventions of the '959 Patent are "patent-eligible subject matter under § 101." Ex.
3 51 at p. 16. In particular, the district court recognized that the claimed inventions
4 of the '959 Patent represent a "substantial improvement" over the existing
5 technology. *Id.* at p. 15.

6 153. The district court also recognized that the '959 Patent's solutions
7 cannot be performed solely by a human. *See, e.g., id.* at p. 15 ("In order to
8 perform this method manually . . . a person would have to manually rewire the
9 devices each time a new selection is made for which devices are to output which
10 channels."). Indeed, at least because the '959 Patent's claimed solutions address
11 problems rooted in multi-zone audio systems and facilitate a "pairing" process
12 with functions not previously performed by humans, these solutions are not
13 merely drawn to longstanding human activities. *See, e.g., id.* at p. 15 ("This
14 simply is not the kind of method that could be performed manually and, even if it
15 were, automating the method as claimed represents a substantial improvement to
16 the functionality of a specific device.").

17 154. Moreover, the innovative and unconventional nature of the '959
18 Patent was confirmed by the validity findings in the '959 Patent reexamination
19 proceeding. *See* Ex. 3.

20 **The Inventions Claimed in U.S. Patent No. 9,219,959 Provide Important**
21 **Advantages to Wireless Audio Systems**

22 155. The multi-channel pairing technology of the '959 Patent provides
23 significant advantages that are important to wireless audio systems. The
24 advantages of Sonos's multi-channel pairing technology are reflected in the
25 recognition and praise it has received from the press. For example, in 2010,
26 around the time that Sonos released its multi-channel pairing technology,
27 *SlashGear* praised Sonos's technology as "a slick way for users . . . to combine
28 two speakers when they want better sound." *See* Ex. 62. Similarly, in 2015,

1 *Trusted Reviews* described Sonos’s multi-channel pairing technology as “[o]ne
2 particularly nifty feature,” and explained that it allows you to “[p]air up multiple
3 speakers for better sound.” *See* Ex. 63; *see also* Ex. 64 (2014 Consumer Reports:
4 praising Sonos’s multi-channel pairing technology as providing “a richer, more
5 detailed sound with wider soundstage.”); Ex. 65 (2014 Businessweek: recognizing
6 Sonos’s pairing technology as appealing to the “audiophile”); Ex. 66 (2013 What
7 Hi-Fi: praising Sonos’s pairing technology because “performance is bolstered
8 significantly. Bass is even more solid, instrument separation improves, smaller
9 details are picked up with more confidence and sound can go noticeably louder
10 without distortion.”).

11 156. Recognizing the advantages of Sonos’s patented multi-channel
12 pairing technology, competitors in the industry, including Google, have
13 incorporated Sonos’s technology into their products and marketed the features
14 that the technology enables to their customers. For example, to market the
15 Google Home Max on its website, Google includes a product webpage touting
16 that you can “[w]irelessly pair two for room-filling stereo separation” for “[a]n
17 even wider stereo image.” Ex. 67. To illustrate this, Google provides the
18 following image:



26 157. *Id.* Likewise, Google’s Home Max product webpage also notes the
27 “[w]ireless stereo pairing” functionality in the “Tech Specs” section. Ex. 68.
28

1 158. As another example, Google’s website included a webpage entitled
2 “Pair Google Home Max speakers,” which proclaims that “[y]ou can pair two
3 Google Home Max speakers (devices) for stereo sound and an immersive
4 experience for music and casting,” and explains how to “[p]air the speakers” and
5 “[c]ontrol the speaker pair.” Ex. 69.

6 159. And yet further, Google’s press release for the launch of the Google
7 Home Max in 2017 announced that “[y]ou can even wirelessly pair two Maxes
8 together for stereo sound.” Ex. 70.

9 160. The media has also recognized the importance of Sonos’s patented
10 multi-channel pairing technology to Google and its customers. For instance,
11 when Google released the Home Max in 2017, *Engadget* cited the Home Max’s
12 stereo pairing capability in comparing it to Sonos’s competing speakers and
13 observed that “pairing two Home Max speakers in stereo . . . greatly extend[s] the
14 soundstage.” Ex. 71. *Engadget* also observed that “[t]he Home Max provides a
15 stellar music experience, particularly in a stereo pair.” *Id.* Similarly, *Digital*
16 *Trends* observed that the Home Max is “impressive when you pair one Max with
17 another for stereo audio.” Ex. 72; *see also, e.g.,* Ex. 73 (2017 *The Verge*: “You
18 can buy two [Google Home Max speakers] and set them up as a pair.”).

19 161. In the same vein, when Google recently announced that it will be
20 upgrading its Google Home and Home Mini to support stereo pairing, *9to5Google*
21 recognized that “Google is expanding stereo speaker pairing to the original
22 Google Home and Google Home Mini” and called stereo pairing “[o]ne of the
23 best features.” Ex. 74. Likewise, in response to Google’s recent announcement,
24 *Digital Trends* published an article entitled “Finally, stereo speaker pairing comes
25 to the Google Home and Home Mini,” which explained that stereo pairing is part
26 of “[t]he beauty of having Google smart home devices.” Ex. 75.

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U.S. Patent No. 10,031,715

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2 162. Sonos is the owner of U.S. Patent No. 10,031,715, entitled “Method
3 and Apparatus for Dynamic Master Device Switching in a Synchrony Group,”
4 which was duly and legally issued by the USPTO on July 24, 2018. A copy of
5 the ’715 Patent is attached hereto as Exhibit 109.

6 163. The ’715 Patent is related to the ’258 Patent and shares a common
7 specification and ultimate priority claim.

8 164. The ’715 Patent is directed to devices, methods, and computer-
9 readable media for dynamically delegating a “master” role within a synchrony
10 group of “zone players.”

11 165. Sonos incorporates by reference and re-alleges the foregoing
12 paragraph numbers 126-30 of this Second Amended Complaint as if fully set forth
13 herein.

14 **The Inventions Claimed in U.S. Patent No. 10,031,715 Improved Technology**
15 **& Were Not Well-Understood, Routine, or Conventional**

16 166. Sonos incorporates by reference and re-alleges the foregoing
17 paragraph numbers 131-38 of this Second Amended Complaint as if fully set forth
18 herein.

19 167. Like the inventions claimed in the ’258 Patent, the inventions
20 claimed in the ’715 Patent improved technology and were not well-understood,
21 routine, or conventional. In this respect, the ’715 Patent provides an
22 unconventional solution to problems that arose in Sonos’s unconventional system
23 architecture comprising “zone players” that communicated over a data network –
24 namely, that operating conditions affecting “zone players” in a “synchrony group”
25 can inhibit performance of certain roles within the “synchrony group” and/or
26 synchronous playback by the group. *See, e.g.*, ’715 Patent, 8:38-52, 10:60-11:4,
27 13:32-36, 37:12-18.
28

1 168. At the core of the '715 Patent are unconventional system components
2 – “zone players” and a “controller device” that operate on a data network. Each
3 “zone player” was unconventionally equipped with intelligence enabling it to
4 perform a “master device role” for the “synchrony group.” *See, e.g.*, '715 Patent,
5 6:58-7:3, 8:2-26, 8:31-38, Claims 1, 7, 13. While performing the “master device
6 role,” the “zone player” was unconventionally capable of dynamically delegating
7 the “master device role” to another “zone player” in the “synchrony group.” *See,*
8 *e.g.*, '715 Patent, 8:38-9:4, 10:60-11:4, 13:22-36, 16:3-18:15, Claims 1, 7, 13.

9 169. Indeed, it was not well-understood, routine, or conventional at the
10 time of the inventions of the '715 Patent to have a “zone player” programmed to
11 perform a “master device role” for a “synchrony group” in which the “zone
12 player” was configured to control synchronous playback of audio information by
13 the group responsive to playback commands received from a “controller device.”
14 *See, e.g.*, '715 Patent, Claims 1, 7, 13.

15 170. Moreover, it was not well-understood, routine, or conventional at the
16 time of the inventions of the '715 Patent to have a “zone player” programmed
17 such that, while performing the “master device role,” it would evaluate one or
18 more “operational performance metrics” as a basis to delegate the “master device
19 role” to another “zone player” in the “synchrony group” and thereafter, transition
20 to performing a different role in the “synchrony group.” *See, e.g.*, '715 Patent,
21 Claims 1, 7, 13.

22 171. These are just exemplary reasons why the inventions claimed in
23 the '715 Patent were not well-understood, routine, or conventional at the time of
24 their invention.

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1 **The Inventions Claimed in U.S. Patent No. 10,031,715 Provide Important**
2 **Advantages to Wireless Audio Systems**

3 172. Sonos incorporates by reference and re-alleges the foregoing
4 paragraph numbers 139-42 of this Second Amended Complaint as if fully set forth
5 herein.

6 173. Moreover, the dynamic master-delegation technology of the '715
7 Patent provides advantages that are important to wireless audio systems. In fact,
8 recognizing the advantages of Sonos's patented dynamic master-delegation
9 technology, competitors in the industry, including Google, have incorporated
10 Sonos's patented technology into their products and touted the benefits that the
11 technology enables. For example, while publicly testifying, Google's engineers
12 touted the "adaptive," "automatic" ("without user intervention") and "resilient"
13 characteristics of Google's accused "leader election" feature that infringes
14 the '715 Patent. *See, e.g.*, Ex. 122, 1247:2-7, 1251:3-1252:9; *id.*, 1300:16-1301:4.

15 **U.S. Patent No. 10,209,953**

16 174. Sonos is the owner of U.S. Patent No. 10,209,953, entitled "Playback
17 Device," which was duly and legally issued by the USPTO on February 19, 2019.
18 A copy of the '953 Patent is attached hereto as Exhibit 4.

19 175. The '953 Patent is related to the '258 Patent and '715 Patent and
20 shares a common specification and ultimate priority claim.

21 176. The '953 Patent is directed to devices, methods, and computer-
22 readable media for synchronizing audio playback.

23 177. Sonos incorporates by reference and re-alleges the foregoing
24 paragraph numbers 126-30 of this Second Amended Complaint as if fully set forth
25 herein.

1 **The Inventions Claimed in U.S. Patent No. 10,209,953 Improved Technology**
2 **& Were Not Well-Understood, Routine, or Conventional**

3 178. Sonos incorporates by reference and re-alleges the foregoing
4 paragraph numbers 131-38 of this Second Amended Complaint as if fully set forth
5 herein.

6 179. Like the inventions claimed in the '258 Patent, the inventions
7 claimed in the '953 Patent improved technology and were not well-understood,
8 routine, or conventional.

9 180. Indeed, it was not well-understood, routine, or conventional at the
10 time of the invention of the '953 Patent to have a “zone player” configured to
11 receive a request for the “zone player” to enter into a synchrony group with at
12 least one other “zone player” and in response to receiving such a request, enter
13 into the synchrony group in which the “zone player” is selected to begin operating
14 as a “slave” of the synchrony group. *See, e.g., '953 Patent at Claims 1, 7, 25; see*
15 *also, e.g., Ex. 8 (2005 PC Mag: “[Sonos’s ZonePlayers] can play the same music*
16 *throughout the house, perfectly synchronized. Even though that may seem drop-*
17 *dead simple, other hubs don’t do it. And you can join multiple rooms to play the*
18 *same music . . . on the fly.”).*

19 181. Moreover, it was not well-understood, routine, or conventional at the
20 time of the invention of the '953 Patent to have a “zone player” that, after
21 beginning to operate as a “slave” of a synchrony group, functions to (i) receive,
22 from another “zone player” operating as a “master” of the synchrony group over a
23 local area network (LAN), clock timing information and (ii) based on the received
24 clock timing information, determine a differential between the clock time of the
25 “zone player” and the clock time of the “master” “zone player.” *See, e.g., '953*
26 *Patent at Claims 1, 7, 25; see also, e.g., Ex. 6 (2013 NBC News: “[Sonos]*
27 *revolutionized the home audio world a decade ago If you wanted the same*
28 *song in every room, no problem, the tracks would be perfectly in sync At the*

1 time, this was mind blowing. Never before could you get music in every room
2 without drilling a bunch of holes for wires”).

3 182. Further yet, it was not well-understood, routine, or conventional at
4 the time of the invention of the '953 Patent to have a “zone player” that, after
5 beginning to operate as a “slave” of a synchrony group, functions to receive, from
6 another “zone player” operating as a “master” of the synchrony group over a
7 LAN, (a) audio information for an audio track and (b) playback timing
8 information associated with the audio information for the audio track that
9 comprises an indicator of a future time at which the “zone players” are to initiate
10 synchronous playback of the audio information. *See, e.g.*, '953 Patent at Claims
11 1, 7, 25; *see also, e.g.*, Ex. 6. It was also not well-understood, routine, or
12 conventional at the time of the invention of the '953 Patent to have a “zone
13 player” that, after beginning to operate as a “slave” of a synchrony group,
14 functions to perform the aforementioned operations as well as functions to (i)
15 update the future time to account for a determine differential between the clock
16 time of the “zone player” and the clock time of the “master” “zone player” and
17 (ii) initiate synchronous playback of the received audio information with the
18 “master” “zone player” when the clock time of the “zone player” reaches the
19 updated future time. *See, e.g.*, '953 Patent at Claims 1, 7, 25; *see also, e.g.*, Ex. 6.

20 183. These are just exemplary reasons why the inventions claimed in
21 the '953 Patent were not well-understood, routine, or conventional at the time of
22 their invention.

23 184. As with the '258 Patent, the unconventional nature of the '953 Patent
24 has also been confirmed by wide-spread industry praise for the patented
25 technology of the '953 Patent as an advancement in the field of home audio.
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1 **The Inventions Claimed in U.S. Patent No. 10,209,953 Provide Important**
2 **Advantages to Wireless Audio Systems**

3 185. Sonos incorporates by reference and re-alleges the foregoing
4 paragraph numbers 139-42 of this Second Amended Complaint as if fully set forth
5 herein.

6 186. As with the '258 Patent, the synchronization technology of the '953
7 Patent provides significant advantages that are important to wireless audio
8 systems, as reflected in the recognition and praise it has received from the
9 press/media and competitors in the industry including Google.

10 **U.S. Patent No. 10,439,896**

11 187. Sonos is the owner of U.S. Patent No. 10,439,896, entitled “Playback
12 Device Connection,” which was duly and legally issued by the USPTO on
13 October 8, 2019. A copy of the '896 Patent is attached hereto as Exhibit 5.

14 188. The '896 Patent relates generally to devices, methods, and computer-
15 readable media for connecting a “playback device” to a secure wireless local area
16 network (WLAN), thereby setting up the “playback device” for use in a
17 networked audio system.

18 189. The '896 Patent recognized problems with conventional device-setup
19 technology for connecting “consumer electronic devices” (*e.g.*, “home
20 entertainment products”) to a network. *See, e.g.*, '896 Patent at 1:37-67. For
21 instance, the '896 Patent recognized that “[c]onsumer electronic devices that
22 operate using wireless or wired Ethernet standards are often subject to the same
23 complicated set-up process as a wireless computer network.” *Id.* at 1:37-39.

24 190. Indeed, a conventional setup process typically required “the person
25 who sets up the wireless network [to] have at least some knowledge about IP
26 (Internet Protocol) networking and Ethernet (*e.g.*, 802.3, 802.11), such as
27 addressing, security, broadcast, unicast, etc.” *Id.* at 1:40-43. At the time of the
28 inventions of the '896 Patent, typically only “IT professionals” possessed such

1 knowledge. *Id.* at 1:43-46. In this respect, to connect a computer to a wireless
2 network, “the user [had] to know what type of network the computer [was] going
3 to be connected to,” which was a “difficult question [for] the average consumers”
4 to answer. *Id.* at 1:57-63. Moreover, there were additional “questions or options
5 related to [] security settings [] which evidently require[d] some good
6 understanding about the network security over the wireless network.” *Id.* at 1:63-
7 67. Thus, the ’896 Patent recognized that it was “impractical to require average
8 consumers to have such knowledge to hook up consumer electronic devices, such
9 as home entertainment products that use wireless/wired Ethernet connectivity.”
10 *Id.* at 1:46-49.

11 191. The ’896 Patent also recognized that a device that has yet to be setup
12 on a network has “limited networking capability” and is not addressable by other
13 devices, which presents technical challenges as to how that device can receive
14 information that facilitates the device’s setup to operate on the network. *See,*
15 *e.g.,* ’896 Patent at 11:4-14.

16 192. Consequently, the ’896 Patent recognized that there was “a clear
17 need to create simple methods of setting up and maintaining a secure
18 wireless/wired in-home network with minimum human interventions.” *Id.* at 2:1-
19 4. The claimed inventions of the ’896 Patent are directed to technology that
20 provides a solution to such needs.

21 **The Inventions Claimed in U.S. Patent No. 10,439,896 Improved Technology**
22 **& Were Not Well-Understood, Routine, or Conventional**

23 193. Given the state of the art at the time of the inventions of the ’896
24 Patent, including the deficiencies in conventional device-setup technology of the
25 time, the inventive concepts of the ’896 Patent cannot be considered to be
26 conventional, well-understood, or routine. *See, e.g.,* ’896 Patent at 1:37-2:4.
27 The ’896 Patent provides an unconventional solution to problems arising in the
28 context of connecting “consumer electronic devices” (*e.g.,* “home entertainment

1 products”) to a network – namely, that such devices, prior to being setup, had
2 limited networking capabilities and were not network addressable by other
3 devices and typically operated “using wireless or wired Ethernet standards [that
4 were] often subject to the same complicated set-up process as a wireless computer
5 network.” *Id.* at 1:37-2:4, 11:4-14.

6 194. In this respect, the ’896 Patent provided a technological solution that
7 addressed the limited-networking-capability and addressability problems with
8 existing setup technologies. *See, e.g.*, ’896 Patent at 11:4-14:37, 15:31-17:38.
9 Moreover, unlike conventional device-setup technology whose complexity made
10 it “impractical” for “average consumers to . . . hook up consumer electronic
11 devices” to a requisite data network, the ’896 Patent provided a technological
12 solution that made it easier for consumers to connect a consumer electronic device
13 to a data network. *See, e.g., id.* at 1:37-67.

14 195. In this regard, it was not well-understood, routine, or conventional at
15 the time of the inventions of the ’896 Patent to have a “computing device”
16 comprising a graphical user interface (GUI) associated with an application for
17 controlling one or more “playback devices” and that is configured to facilitate
18 setting up a “playback device” to operate on a secure WLAN. *See, e.g.*, ’896
19 Patent at Claims 1, 13, 20.

20 196. Moreover, it was not well-understood, routine, or conventional at the
21 time of the inventions of the ’896 Patent to have a “computing device” configured
22 to (i) transmit a response to a first message that facilitates establishing with a
23 “playback device” an “initial communication path” that does not traverse an
24 access point defining a secure WLAN, (ii) transmit “network configuration
25 parameters” for the secure WLAN to the “playback device” via the “initial
26 communication path,” and (iii) transition from communicating with the given
27 “playback device” via the “initial communication path” to communicating with
28

1 the given “playback device” via the secure WLAN. *See, e.g.*, ’896 Patent at
2 Claims 1, 13, 20.

3 197. Additionally, it was not well-understood, routine, or conventional at
4 the time of the inventions of the ’896 Patent to have a “computing device”
5 configured to perform the specific combination of (i) while operating on a secure
6 WLAN defined by an access point, (a) receiving “user input indicating that a user
7 wishes to set up a playback device” to operate on the secure WLAN and
8 (b) receiving a first message indicating that a “given playback device is available
9 for setup,” (ii) transmitting a response to the first message that facilitates
10 establishing with the given “playback device” an “initial communication path”
11 that does not traverse the access point, (iii) transmitting, to the given “playback
12 device” via the “initial communication path,” at least a second message
13 containing “network configuration parameters” for the secure WLAN, and (iv)
14 after detecting an indication that the given “playback device” has successfully
15 received the “network configuration parameters,” transitioning from
16 communicating with the given “playback device” via the “initial communication
17 path” to communicating with the given “playback device” via the secure WLAN.
18 *See, e.g.*, ’896 Patent at Claims 1, 13, 20.

19 198. These are just exemplary reasons why the inventions claimed in
20 the ’896 Patent were not well-understood, routine, or conventional at the time of
21 their invention.

22 199. The unconventional nature of the ’896 Patent has also been
23 confirmed by wide-spread industry praise for the patented technology of the ’896
24 Patent as an advancement in the field of home audio, as set forth below.

25 200. Moreover, the ’896 Patent’s solutions are naturally rooted in
26 consumer device-setup technology and cannot be performed solely by a human.
27 Indeed, the ’896 Patent’s claimed solutions provide a device-setup process
28

1 comprising functions not previously performed by humans and therefore, are not
2 merely drawn to longstanding human activities.

3 **The Inventions Claimed in U.S. Patent No. 10,439,896 Provide Important**
4 **Advantages to Wireless Audio Systems**

5 201. The playback-device-setup technology of the '896 Patent provides
6 significant advantages that are important to wireless audio systems. The
7 advantages of Sonos's patented playback-device-setup technology are reflected in
8 the recognition and praise it has received from the press. For example, in 2015,
9 *Ars Technica* explained:

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

15 Ex. 76.

16 202. Likewise, *Gizmodo* touted Sonos's patented playback-device-setup
17 technology as "so easy that anybody can do it." Ex. 77. And *Consumer Reports*
18 explained that Sonos's playback-device-setup technology is "pretty simple."

19 Ex. 78.

20 203. Recognizing the advantages of Sonos's patented playback-device-
21 setup technology, competitors in the industry, including Google, have
22 incorporated Sonos's patented technology into their products and marketed the
23 features that the technology enables to their customers. For example, to market its
24 Google Audio Players on its website, Google includes a dedicated "Setup" tab
25 that touts how "[g]etting set up is simple." *See, e.g.*, Ex. 79. As another example,
26 Google's website includes a webpage entitled "Set up your Google Nest or
27 Google Home speaker or display," which explains that "[t]he Google Home app
28

1 will walk you through the steps to set up your Google Nest or Google Home
2 speaker or display.” Ex. 80.

3 204. The media has also recognized the importance of Sonos’s patented
4 playback-device-setup technology to Google and its customers. For instance,
5 *Android Central* published an article entitled “How to set up Google Home and
6 other Google Assistant speakers,” which touted Google’s setup as a “simple
7 process.” Ex. 81. Similarly, *Tom’s Guide* exclaimed that the Google Home Mini
8 is a “cinch to set up” and further described the setup procedure as “pretty
9 straightforward.” Ex. 82; *see also, e.g.*, Ex. 83 (2019 CNET article explaining
10 that “[i]t’s easy to set up your Google Home . . . speaker for the first time”).

11 **U.S. Patent No. 11,080,001**

12 205. Sonos is the owner of U.S. Patent No. 11,080,001, entitled
13 “Concurrent Transmission and Playback of Audio Information,” which was duly
14 and legally issued by the USPTO on August 3, 2021. A copy of the ’001 Patent is
15 attached hereto as Exhibit 110.

16 206. The ’001 Patent is related to the ’258, ’715, and ’953 Patents and
17 shares a common specification and ultimate priority claim.

18 207. The ’001 Patent is directed to devices, methods, and computer-
19 readable media for operating in a synchrony group according to particular master
20 and/or slave modes.

21 208. Sonos incorporates by reference and re-alleges the foregoing
22 paragraph numbers 126-30 of this Second Amended Complaint as if fully set forth
23 herein.

24 **The Inventions Claimed in U.S. Patent No. 11,080,001 Improved Technology**
25 **& Were Not Well-Understood, Routine, or Conventional**

26 209. Sonos incorporates by reference and re-alleges the foregoing
27 paragraph numbers 131-38, 166-71, and 178-84 of this Second Amended
28 Complaint as if fully set forth herein.

1 210. Like the inventions claimed in the '258, '715, and '953 Patents, the
2 inventions claimed in the '001 Patent improved technology and were not well-
3 understood, routine, or conventional. In this respect, the '001 Patent provides an
4 unconventional solution to problems that arose in Sonos's unconventional system
5 architecture comprising "zone players" that communicated over a data network –
6 namely, that there were various responsibilities to be performed in a "synchrony
7 group" of such "zone players." *See, e.g.*, '001 Patent, 6:58-7:3, 8:2-9:36.

8 211. As with the '258, '715, and '953 Patents, at the core of the '001
9 Patent are aspects of Sonos's unconventional system architecture – "zone players"
10 and a "network device" (e.g., controller) that operate on a data network. Each
11 "zone player" was unconventionally equipped with intelligence enabling it to
12 operate in a "synchrony group" in either a "control-master mode" or "control-
13 slave mode" and in either an "audio-master mode" or "audio-slave mode." *See,*
14 *e.g.*, '001 Patent at 6:58-7:3, 8:2-9:36, Claims 1, 12, 23.

15 212. In this respect, it was not well-understood, routine, or conventional at
16 the time of the inventions of the '001 Patent to have a "zone player" configured to
17 interface with a data network and receive a request to engage in synchronous
18 playback of audio content as part of a synchrony group. *See, e.g.*, '001 Patent at
19 Claims 1, 12, 23.

20 213. Moreover, it was not well-understood, routine, or conventional at the
21 time of the inventions of the '001 Patent to have a "zone player" configured to,
22 after receiving a request to engage in synchronous playback of audio content as
23 part of a synchrony group, operate in the synchrony group in accordance with a
24 detected indication that the "zone player" is to operate in either a "control-master
25 mode" or "control-slave mode" for the synchrony group and in either an "audio-
26 master mode" or "audio-slave mode" for the synchrony group. *See, e.g.*, '001
27 Patent at Claims 1, 12, 23.
28

1 214. It was also not well-understood, routine, or conventional at the time
2 of the inventions of the '001 Patent to have a “zone player” programmed such
3 that, while operating in the “control-master mode,” it functions to cause, via its
4 network interface, at least one playback action to be applied in a synchrony group
5 based on received control information for the synchrony group from a network
6 device. *See, e.g.*, '001 Patent at Claims 1, 12, 23.

7 215. Additionally, it was not well-understood, routine, or conventional at
8 the time of the inventions of the '001 Patent to have a “zone player” programmed
9 such that, while operating in the “control-slave mode,” it functions to perform one
10 or more playback actions in accordance with received control information from
11 another “zone player.” *See, e.g.*, '001 Patent at Claims 1, 12, 23.

12 216. Furthermore, it was not well-understood, routine, or conventional at
13 the time of the inventions of the '001 Patent to have a “zone player” programmed
14 such that, while operating in the “audio-master mode,” it functions to (i) obtain
15 audio information representative of audio content, (ii) generate playback timing
16 information indicative of at least one future time relative to a reference clock time
17 that denotes a time at which the “zone player” and at least one other “zone player”
18 are to engage in synchronous playback of a corresponding portion of the obtained
19 audio information, and (iii) transmit the audio information and the playback
20 timing information to the other “zone player.” *See, e.g.*, '001 Patent at Claims 1,
21 12, 23.

22 217. Further still, it was not well-understood, routine, or conventional at
23 the time of the inventions of the '001 Patent to have a “zone player” programmed
24 such that, while operating in the “audio-slave mode,” it functions to (i) receive
25 audio information and associated playback timing information from another “zone
26 player” and (ii) engage in synchronous playback of the received audio information
27 with at least the other “zone player” based on the associated playback timing
28 information. *See, e.g.*, '001 Patent at Claims 1, 12, 23.

1 218. These are just exemplary reasons why the inventions claimed in
2 the '001 Patent were not well-understood, routine, or conventional at the time of
3 their invention.

4 **The Inventions Claimed in U.S. Patent No. 11,080,001 Provide Important**
5 **Advantages to Wireless Audio Systems**

6 219. Sonos incorporates by reference and re-alleges the foregoing
7 paragraph numbers 139-42 and 173 of this Second Amended Complaint as if fully
8 set forth herein.

9 220. As with the '258, '715, and '953 Patents, the synchrony-group
10 operating-modes technology of the '001 Patent provides advantages that are
11 important to wireless audio systems. In fact, recognizing the advantages of
12 Sonos's patented synchrony-group operating-modes technology, competitors in
13 the industry, including Google, have incorporated Sonos's patented technology
14 into their products.

15 **U.S. Patent No. 10,966,025**

16 221. Sonos is the owner of U.S. Patent No. 10,966,025, entitled "Playback
17 Device Pairing," which was duly and legally issued by the USPTO on March 30,
18 2021. A copy of the '025 Patent is attached hereto as Exhibit 130.

19 222. The '025 Patent is related to the '959 Patent and shares a common
20 specification and ultimate priority claim.

21 223. The '025 Patent is directed to devices, methods, and computer-
22 readable media for providing audio in a multi-channel listening environment.

23 224. Sonos incorporates by reference and re-alleges the foregoing
24 paragraph numbers 143-146 of this Second Amended Complaint as if fully set
25 forth herein.

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1 **The Inventions Claimed in U.S. Patent No. 10,966,025 Improved Technology**
2 **& Were Not Well-Understood, Routine, or Conventional**

3 225. Sonos incorporates by reference and re-alleges the foregoing
4 paragraph numbers 147-154 of this Second Amended Complaint as if fully set
5 forth herein.

6 226. Like the inventions claimed in the '959 Patent, the inventions
7 claimed in the '025 Patent improved technology and were not well-understood,
8 routine, or conventional.

9 227. In this respect, it was not well-understood, routine, or conventional at
10 the time of the invention of the '025 Patent to have a “playback device”
11 comprising a network interface and programmed to receive a signal from a
12 controller over a network that comprises an instruction for the “playback device”
13 to become “paired” with one or more other “playback devices.” *See, e.g., '025*
14 *Patent at Claims 1, 16, 18; see also, e.g., id. at 7:13-22.*

15 228. Moreover, it was not well-understood, routine, or conventional at the
16 time of the invention of the '025 Patent to have a “playback device” programmed
17 to determine that either (a) it is not “paired” with one or more other “playback
18 devices” or (b) it is “paired” with one or more other “playback devices” such that
19 they have different playback roles. *See, e.g., '025 Patent at Claims 1, 16, 18; see*
20 *also, e.g., id. at 7:13-22.*

21 229. Further yet, it was not well-understood, routine, or conventional at
22 the time of the invention of the '025 Patent to have a “playback device”
23 programmed to (a) configure itself to perform a first processing of audio data
24 received over a network so as to output two-channel audio after the “playback
25 device” has determined it is not “paired” with one or more other “playback
26 devices” and (b) change its configuration by configuring itself to perform a
27 second processing of the audio data so as to output one-channel audio after the
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1 “playback device” has determined it is “paired” with one or more other “playback
2 devices.” *See, e.g.*, ’025 Patent at Claims 1, 16, 18; *see also, e.g., id.* at 7:13-22.

3 230. These are just exemplary reasons why the inventions claimed in
4 the ’025 Patent were not well-understood, routine, or conventional at the time of
5 their invention.

6 **The Inventions Claimed in U.S. Patent No. 10,966,025 Provide Important**
7 **Advantages to Wireless Audio Systems**

8 231. Sonos incorporates by reference and re-alleges the foregoing
9 paragraph numbers 155-161 of this Second Amended Complaint as if fully set
10 forth herein.

11 232. As with the ’959 Patent, the multi-channel pairing technology of
12 the ’025 Patent provides significant advantages that are important to wireless
13 audio systems, as reflected in the recognition and praise it has received from the
14 press/media and competitors in the industry including Google.

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

16 233. Sonos is the owner of U.S. Patent No. 10,541,883, entitled “Playback
17 Device Connection,” which was duly and legally issued by the USPTO on
18 January 21, 2020. A copy of the ’883 Patent is attached hereto as Exhibit 131.

19 234. The ’883 Patent is related to the ’896 Patent and shares a common
20 specification and ultimate priority claim.

21 235. The ’883 Patent is directed to devices, methods, and computer-
22 readable media for connecting a “playback device” to a secure wireless local area
23 network (WLAN), thereby setting up the “playback device” for use in a
24 networked audio system.

25 236. Sonos incorporates by reference and re-alleges the foregoing
26 paragraph numbers 187-192 of this Second Amended Complaint as if fully set
27 forth herein.

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1 **The Inventions Claimed in U.S. Patent No. 10,541,883 Improved Technology**
2 **& Were Not Well-Understood, Routine, or Conventional**

3 237. Sonos incorporates by reference and re-alleges the foregoing
4 paragraph numbers 193-200 of this Second Amended Complaint as if fully set
5 forth herein.

6 238. Like the inventions claimed in the '896 Patent, the inventions
7 claimed in the '883 Patent improved technology and were not well-understood,
8 routine, or conventional.

9 239. In this respect, it was not well-understood, routine, or conventional at
10 the time of the invention of the '883 Patent to have a "playback device"
11 comprising a network interface and configured to be set up to operate on a secure
12 WLAN with the assistance of a "computing device" installed with an application
13 for controlling the "playback device." *See, e.g.*, '883 Patent at Claims 1, 14, 20.

14 240. Moreover, it was not well-understood, routine, or conventional at the
15 time of the invention of the '883 Patent to have a "playback device" configured to
16 (i) receive a response to a first message that facilitates establishing with a
17 "computing device" an "initial communication path" that does not traverse an
18 access point defining a secure WLAN, (ii) receive "network configuration
19 parameters" for the secure WLAN from the "computing device" via the "initial
20 communication path," and (iii) transition from communicating with the
21 "computing device" via the "initial communication path" to communicating with
22 the "computing device" via the secure WLAN. *See, e.g.*, '883 Patent at Claims 1,
23 14, 20.

24 241. Additionally, it was not well-understood, routine, or conventional at
25 the time of the invention of the '883 Patent to have a "playback device"
26 configured to perform the specific combination of (i) detecting a triggering event
27 that causes the "playback device" to enter a setup mode in which the "playback
28 device" transmits at least a first message indicating that the "playback device" is

1 “available for setup,” (ii) while in the setup mode, receiving a response to a first
2 message that facilitates establishing with a “computing device” operating on a
3 secure WLAN defined by an access point an “initial communication path” that
4 does not traverse the access point, (iii) receiving at least a second message
5 containing “network configuration parameters” for the secure WLAN from the
6 “computing device” via the “initial communication path,” (iv) using the “network
7 configuration parameters” to connect to the secure WLAN, and (v) transitioning
8 from communicating with the “computing device” via the “initial communication
9 path” to communicating with the “computing device” via the secure WLAN. *See,*
10 *e.g.,* ’883 Patent at Claims 1, 14, 20.

11 242. These are just exemplary reasons why the inventions claimed in
12 the ’883 Patent were not well-understood, routine, or conventional at the time of
13 their invention.

14 **The Inventions Claimed in U.S. Patent No. 10,541,883 Provide Important**
15 **Advantages to Wireless Audio Systems**

16 243. Sonos incorporates by reference and re-alleges the foregoing
17 paragraph numbers 201-204 of this Second Amended Complaint as if fully set
18 forth herein.

19 244. As with the ’896 Patent, the playback-device-setup technology of
20 the ’883 Patent provides significant advantages that are important to wireless
21 audio systems, as reflected in the recognition and praise it has received from the
22 press/media and competitors in the industry including Google.

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

24 245. Sonos incorporates by reference and re-alleges paragraphs 85-109 of
25 this Second Amended Complaint as if fully set forth herein.

26 246. Google and/or users of the Google Wireless Audio System have
27 directly infringed (either literally or under the doctrine of equivalents) and
28 continue to directly infringe one or more of the claims of the ’014 Patent, in

1 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling
 2 the Google Wireless Audio System within the United States and/or importing the
 3 Google Wireless Audio System into the United States without authority or
 4 license.

5 247. As just one non-limiting example, set forth below is an exemplary
 6 infringement claim chart for claim 25 of the '014 Patent in connection with the
 7 Google Wireless Audio System. This claim chart is based on publicly available
 8 information. Sonos reserves the right to modify this claim chart, including, for
 9 example, on the basis of information about the Google Wireless Audio System
 10 that it obtains during discovery.

Claim 25	Google
<p>12 [25.0] An apparatus for 13 controlling a plurality of 14 players, the apparatus 15 comprising:</p>	<p>At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, and/or the Google Play Music app (where a computing device installed with at least one of these apps is referred to herein as a “Chromecast-enabled computing device”⁴) comprises an “apparatus for controlling a plurality of players,” as recited in claim 25. <i>See, e.g.,</i> Exs. 40-43, 87-92. At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest</p>


22 ⁴ Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel
 23 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7
 24 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel
 25 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and
 26 the Pixelbook and Pixelbook Go laptops installed with an Android version of the
 27 Google Home app, the YouTube Music app, and/or the Google Play Music app is
 28 an example of a “Chromecast-enabled computing device.” Likewise, each other
 smartphone, tablet, and computer installed with an Android or iOS version of the
 Google Home app, the YouTube Music app, and/or the Google Play Music app is
 an example of a “Chromecast-enabled computing device,” including by way of
 example, Apple and Samsung phones and tablets.

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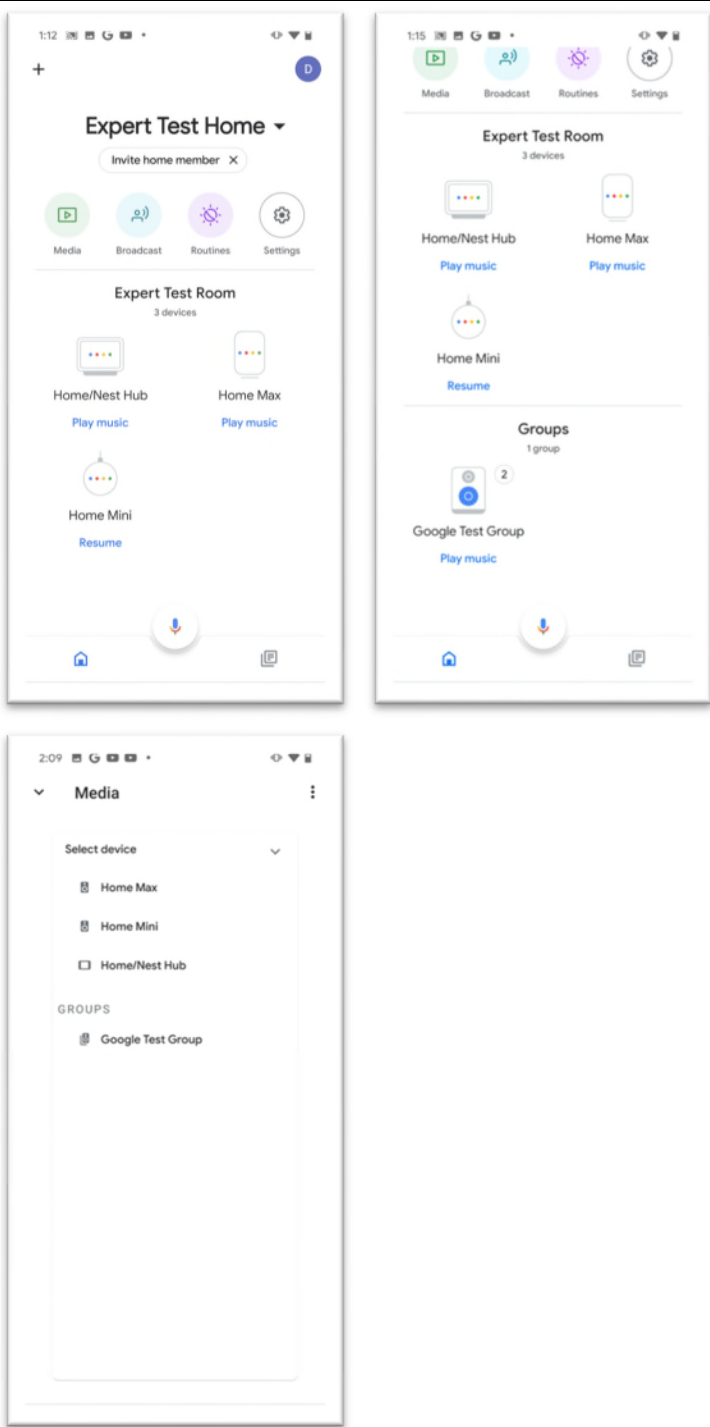
Claim 25	Google
	Hub, Nest Hub Max, ⁵ Nest Audio, and Nest Wifi Point comprises a “player,” as recited in claim 25.
[25.1] a screen;	Each Chromecast-enabled computing device and Hub Audio Player comprises a screen. <i>See, e.g.,</i> Exs. 40-43, 87-92
[25.2] a screen driver commanding the screen;	Each Chromecast-enabled computing device and Hub Audio Player comprises a screen driver commanding the screen. <i>See, e.g.,</i> Exs. 40-43, 87-92.
[25.3] an input interface;	Each Chromecast-enabled computing device and Hub Audio Player comprises an input interface, such as a touch screen, physical buttons, etc. <i>See, e.g.,</i> Exs. 40-43, 87-92.
[25.4] a network interface;	Each Chromecast-enabled computing device and Hub Audio Player comprises a network interface, such as a WiFi interface. <i>See, e.g.,</i> Exs. 40-43, 87-92.
[25.5] a memory for storing code for an application module;	Each Chromecast-enabled computing device and Hub Audio Player comprises a memory for storing code for an application module. <i>See, e.g.,</i> Exs. 34-43, 87-92.
[25.6] a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform operations of:	Each Chromecast-enabled computing device and Hub Audio Player comprises a processor coupled to the memory, the input interface, the screen driver and the network interface, the processor executing the code in the memory to cause the application module and the screen driver to perform the operations identified below. <i>See, e.g.,</i> Exs. 40-43, 87-92.
[25.7] displaying on a screen a first list showing at least available players;	Each Chromecast-enabled computing device and Hub Audio Player is programmed with the

⁵ In addition to being configured as a “player,” as recited in claim 25, each Home Hub, Nest Hub, and Nest Hub Max (referred to herein as a “Hub Audio Player”) is installed with Home/Nest Hub software such that the given Hub Audio Player is configured as an “apparatus for controlling a plurality of players,” as recited in claim 25, that is capable of facilitating forming and controlling one or more groups of two or more Google Audio Players.

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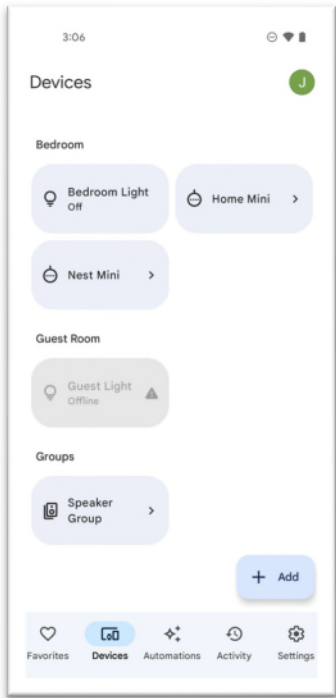
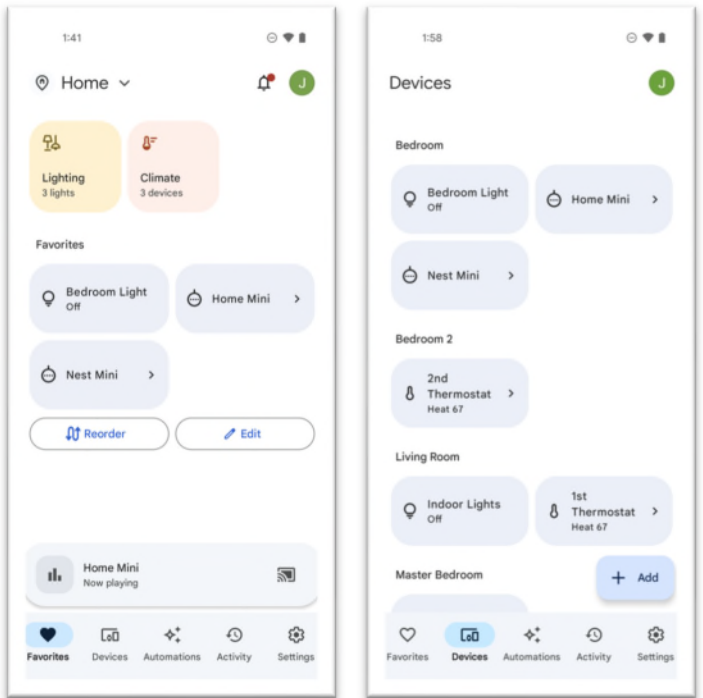
Claim 25	Google
	<p>capability to display on a screen a first list showing at least available Google Audio Players.</p> <p>As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display on its screen a list showing at least available Google Audio Players in a Google Wireless Audio System.</p> <p>This functionality is evidenced by the exemplary screenshots/images below:</p> <p><u>Google Home app</u></p>  <p>The screenshot shows the Google Home app interface. At the top, there is a '+' icon and a search bar. Below this, there is a 'Play music' button. The main content area is divided into sections: 'Office' (2 devices) with a 'Play music' button, 'Patio' (1 device) with a 'Play music' button, and 'Groups' (3 groups) with three sub-sections: 'Google Home Group' (2), 'Mini Hub Group' (2), and 'Office Group' (1). At the bottom, there is a section for 'Other Cast devices' with a search bar and a 'Play music' button. The bottom navigation bar includes a home icon, a microphone icon, and a grid icon.</p>

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Claim 25	Google
	 <p>The image displays three screenshots of the Google Home mobile application interface. The top-left screenshot shows the 'Expert Test Home' screen at 1:12, featuring a navigation bar with 'Media', 'Broadcast', 'Routines', and 'Settings' icons, and a list of devices including Home/Nest Hub, Home Max, and Home Mini. The top-right screenshot shows the 'Expert Test Room' screen at 1:15, displaying a similar layout with 'Play music' buttons for each device. The bottom screenshot shows the 'Media' selection screen at 2:09, with a 'Select device' dropdown menu listing 'Home Max', 'Home Mini', and 'Home/Nest Hub', and a 'GROUPS' section listing 'Google Test Group'.</p>

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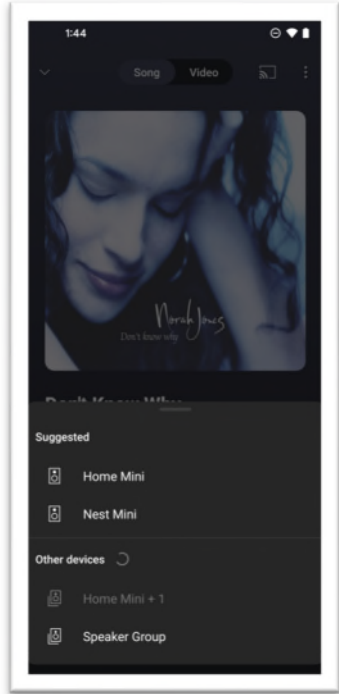
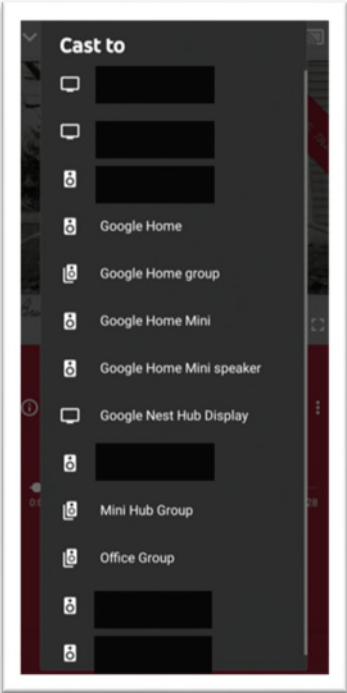
Claim 25 **Google**



YouTube Music app

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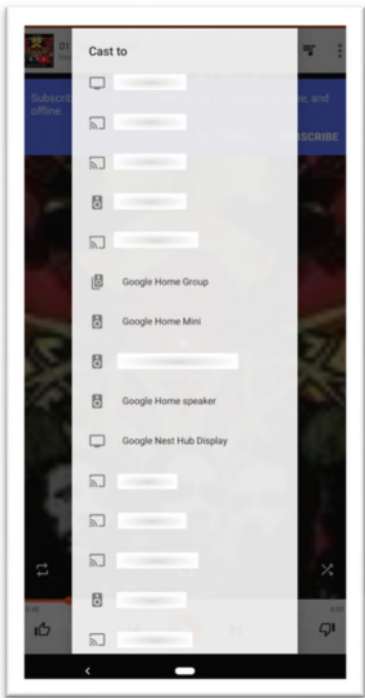
Claim 25	Google
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Google Play Music app

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Claim 25	Google
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Hub Audio Player



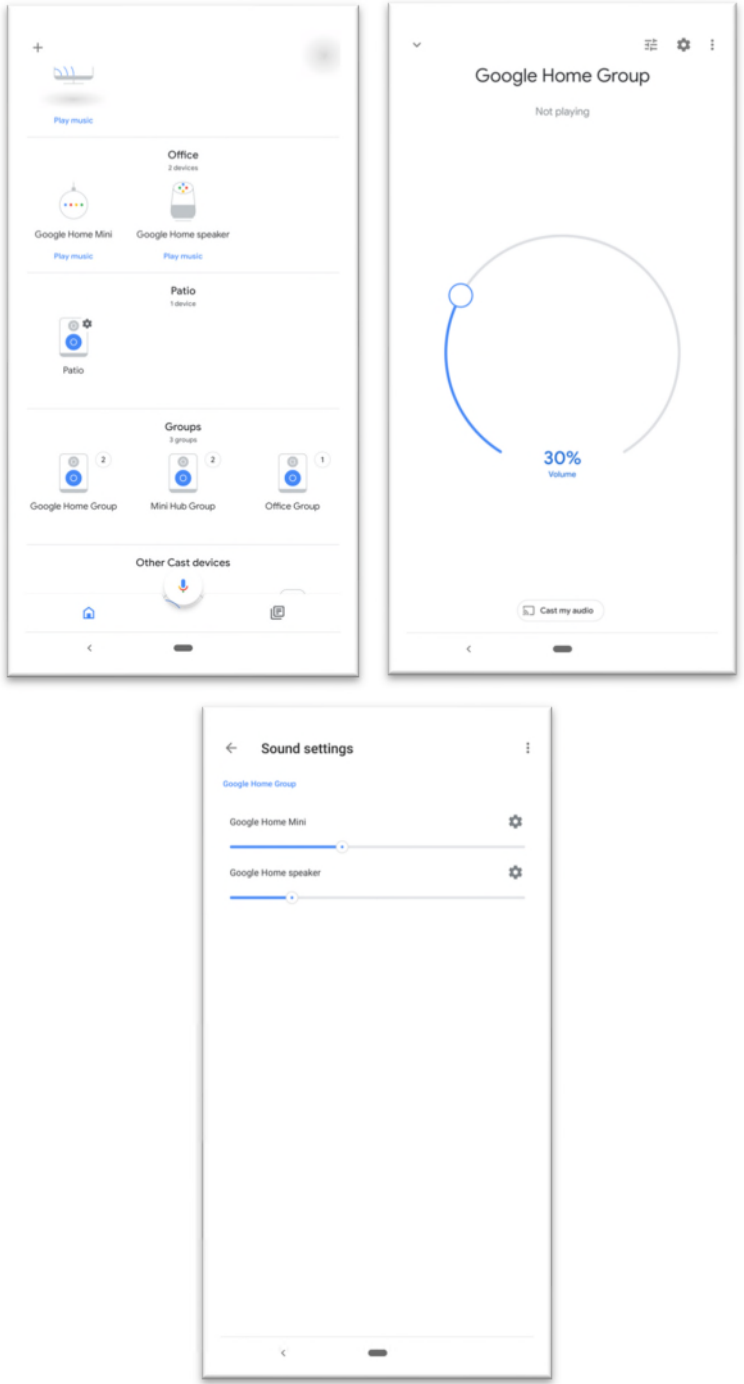
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Claim 25	Google
	
<p>[25.8] displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group, wherein any one of the players in the group serves as a zone group head;</p>	<p><i>See also, e.g., Exs. 93, 123, 124.</i></p> <p>Each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a zone group including Google Audio Players from the available Google Audio Players when at least two of the available Google Audio Players are selected to form the zone group, wherein any one of the Google Audio Players in the group serves as a zone group head.</p> <p>As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to facilitate the formation and control of a group of two or more Google Audio Players that are configured to play back audio in synchrony. <i>See, e.g., Ex. 29</i> (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); 125 (“Group any combination of Google Nest or Home speakers and displays, Google streaming devices, and Google Pixel Tablets together for synchronous media throughout the home. You can</p>

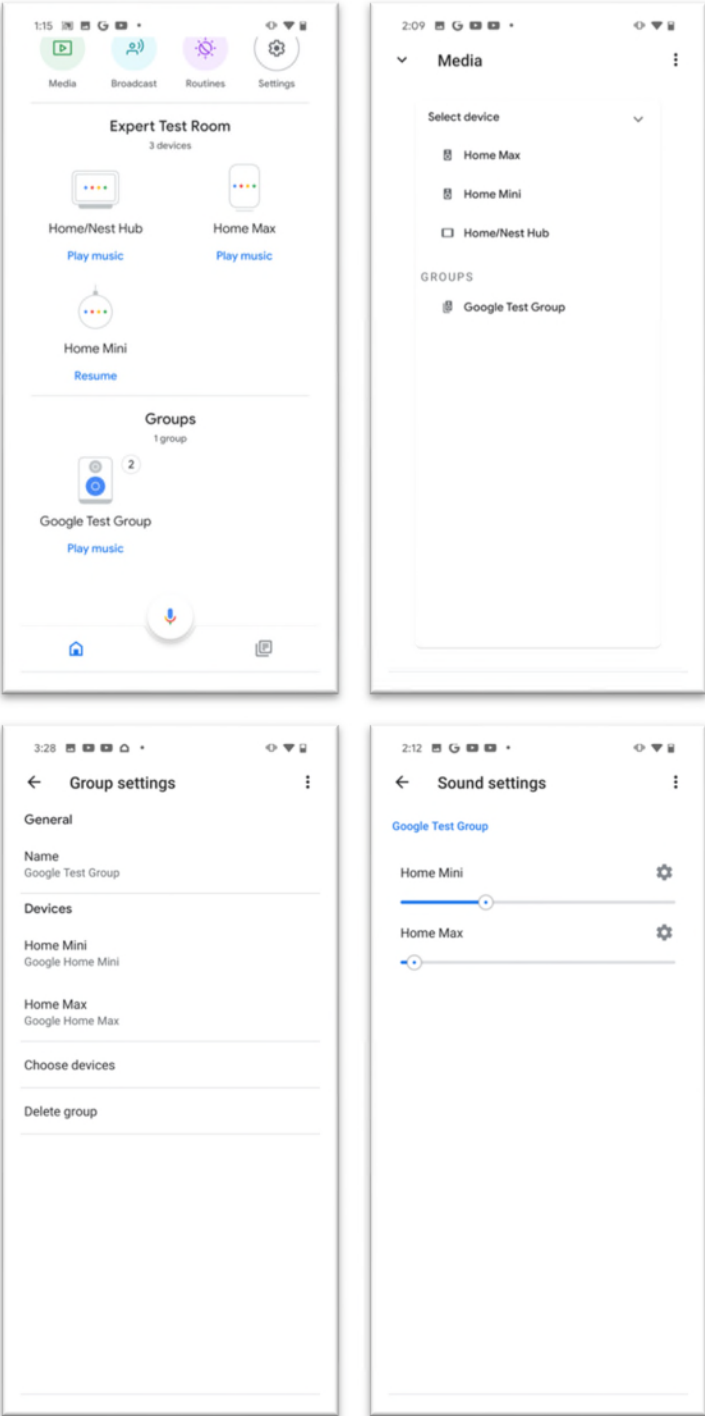
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Claim 25	Google
	<p>create pre-set speaker groups you use often or use the mini-player to add, remove, or move speakers when playing media.”); Exs. 20, 61, 84, 93-94, 104, 106, 123, 124.</p> <p>In such a group, one of the Google Audio Players will be designated to serve as the “master” of the group (sometimes referred to by Google as the “leader” of the group), which constitutes a “zone group head,” and every other Google Audio Player will be designated to serve as a “slave” of the group (sometimes referred to by Google as a “follower” of the group). <i>See, e.g.</i>, Ex. 122, 1277:10-13, 1278:1-6.</p> <p>In this regard, each Chromecast-enabled computing device and Hub Audio Player is programmed such that, after two or more Google Audio Players in a Chromecast-enabled audio system have been selected to form a group, the Chromecast-enabled computing device or Hub Audio Player functions to display a visual representation of the group on various app pages at various times.</p> <p>This functionality is evidenced by the exemplary screenshots/images below:</p> <p><u>Google Home app</u></p>

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Claim 25	Google
	

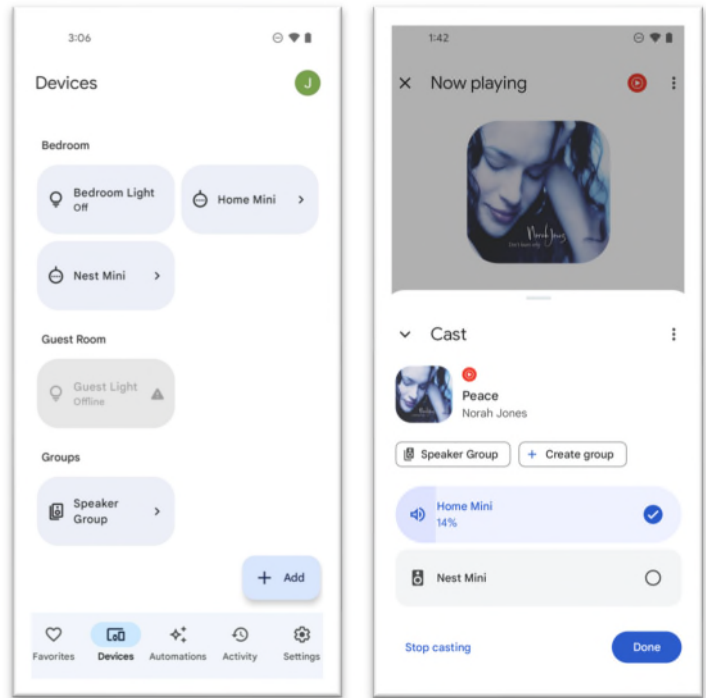
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Claim 25	Google
	 <p>The Google column contains four screenshots of the Google Home app interface. The top-left screenshot (1:15) shows the 'Expert Test Room' group with three devices: Home/Nest Hub, Home Max, and Home Mini. The top-right screenshot (2:09) shows the 'Media' screen with a 'Select device' dropdown menu listing Home Max, Home Mini, and Home/Nest Hub, and a 'Google Test Group' under the 'GROUPS' section. The bottom-left screenshot (3:28) shows the 'Group settings' screen for 'Google Test Group', listing 'Home Mini' and 'Home Max' as devices, and options for 'Choose devices' and 'Delete group'. The bottom-right screenshot (2:12) shows the 'Sound settings' screen for 'Google Test Group', with volume sliders for 'Home Mini' and 'Home Max'.</p>

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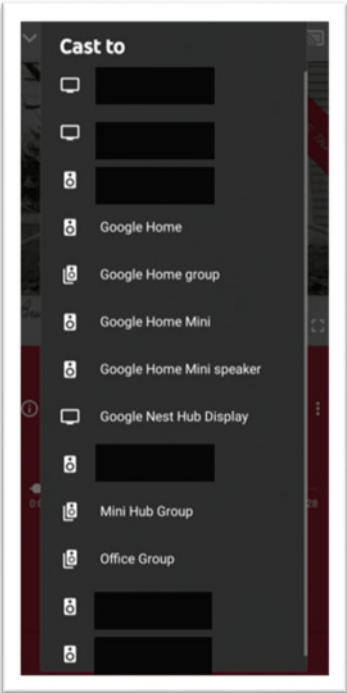
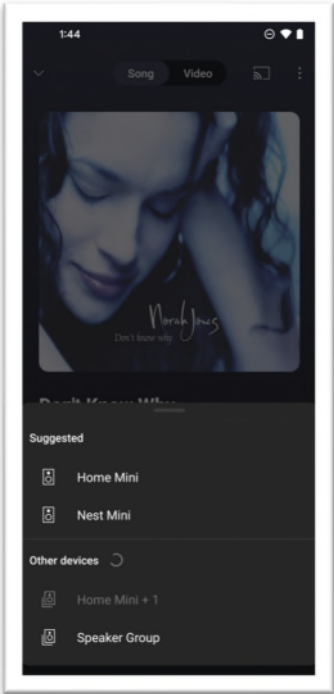
Claim 25

Google



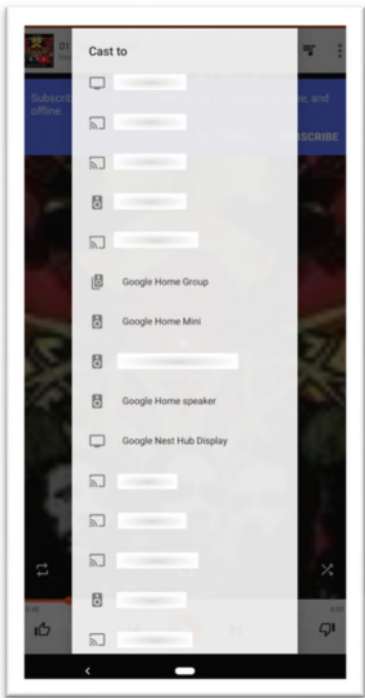
YouTube Music app

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Claim 25	Google
	  <p data-bbox="760 1705 1112 1743"><u>Google Play Music app</u></p>

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Claim 25	Google
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Hub Audio Player



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Claim 25	Google
	
<p>[25.9] synchronizing all players in the zone group in accordance with the zone group head; and</p>	<p>Each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to synchronize all Google Audio players in a zone group in accordance with the zone group head.</p> <p>As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to cause Google Audio players in a group to engage in synchronous playback of audio in accordance with the “master” Google Audio player of the group, which transmits information to each “slave” Google Audio player in the group that facilitates the synchronous playback of the audio. <i>See, e.g.</i>, Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); Ex. 125 (“Group any combination of Google Nest or Home speakers and displays, Google streaming devices, and Google Pixel Tablets together for synchronous media throughout the home. You can create pre-set speaker groups you use often or use the mini-player to add, remove, or move speakers when</p>

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Claim 25	Google
	playing media.”); Exs. 20, 61, 84, 93-94, 104, 106, 123, 124; Ex. 122, 1259:20-1260:5, 1268:23-1269:8, 1300:6-15, 1315:5-10.
<p>[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.</p>	<p>Each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to adjust a volume meter represented by an averaged value of audio volumes of Google Audio players in a group, wherein said adjusting of the volume meter includes changing a volume of each of the group of Google Audio players synchronously in accordance with an adjustment made by a user.</p> <p>As an example, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a volume meter representing a “group volume” for the Google Audio players in the group, where the “group volume” meter is represented by an averaged value of the individual volumes of the Google Audio players in the group. Each Chromecast-enabled computing device and Hub Audio Player is also programmed with the capability to adjust the “group volume” meter for the Google Audio players in the group, which includes changing the individual volume of each Google Audio player in the group synchronously in accordance with an adjustment made by a user. <i>See, e.g.</i>, Ex. 55 (“When casting to a group, there are two ways to change the volume: 1. Changing the group volume. This action will change the volume of all speakers within the group.”) (emphasis in original); Ex. 126 [Google Cast for Audio Multi-room Certification Test Specification Version 6.3] (“The group volume level is a single volume scale representing the group. In an active cast session it can be modified by the audio source, e.g. the content app, or in the Google Home app (on Android). The group volume level is the</p>

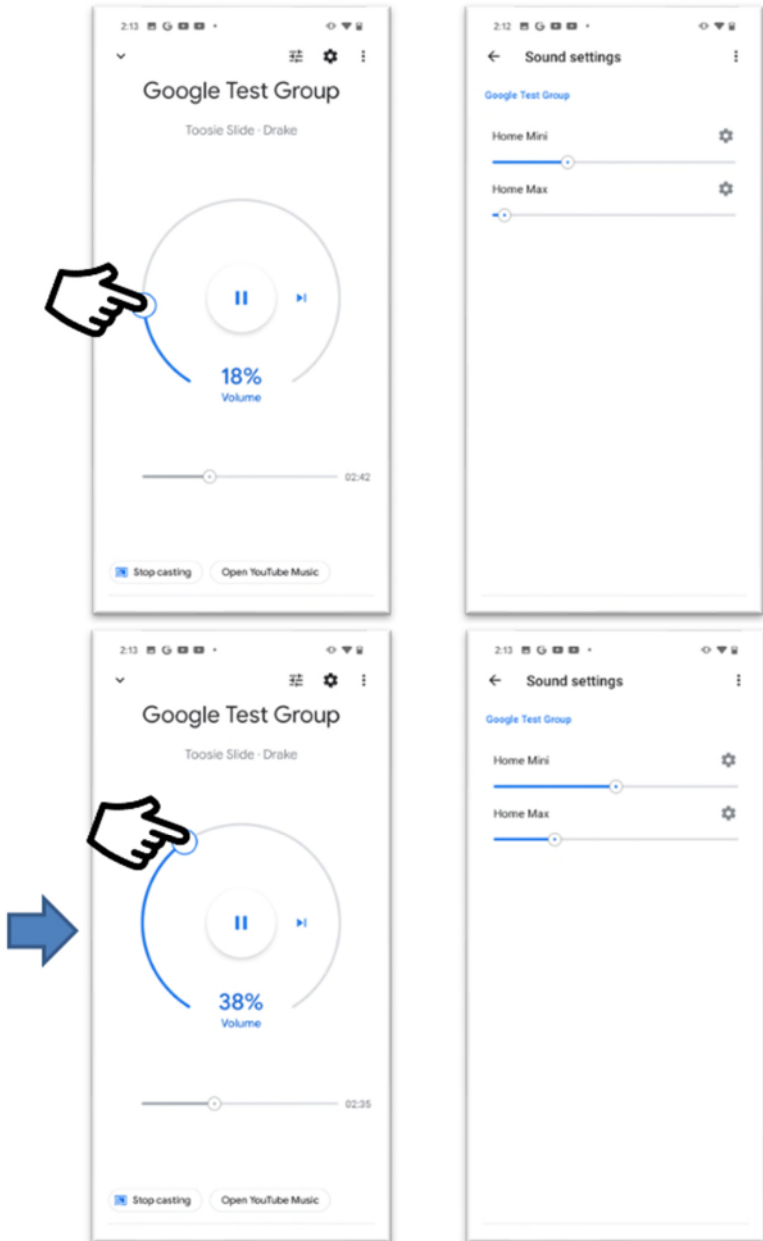
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Claim 25	Google
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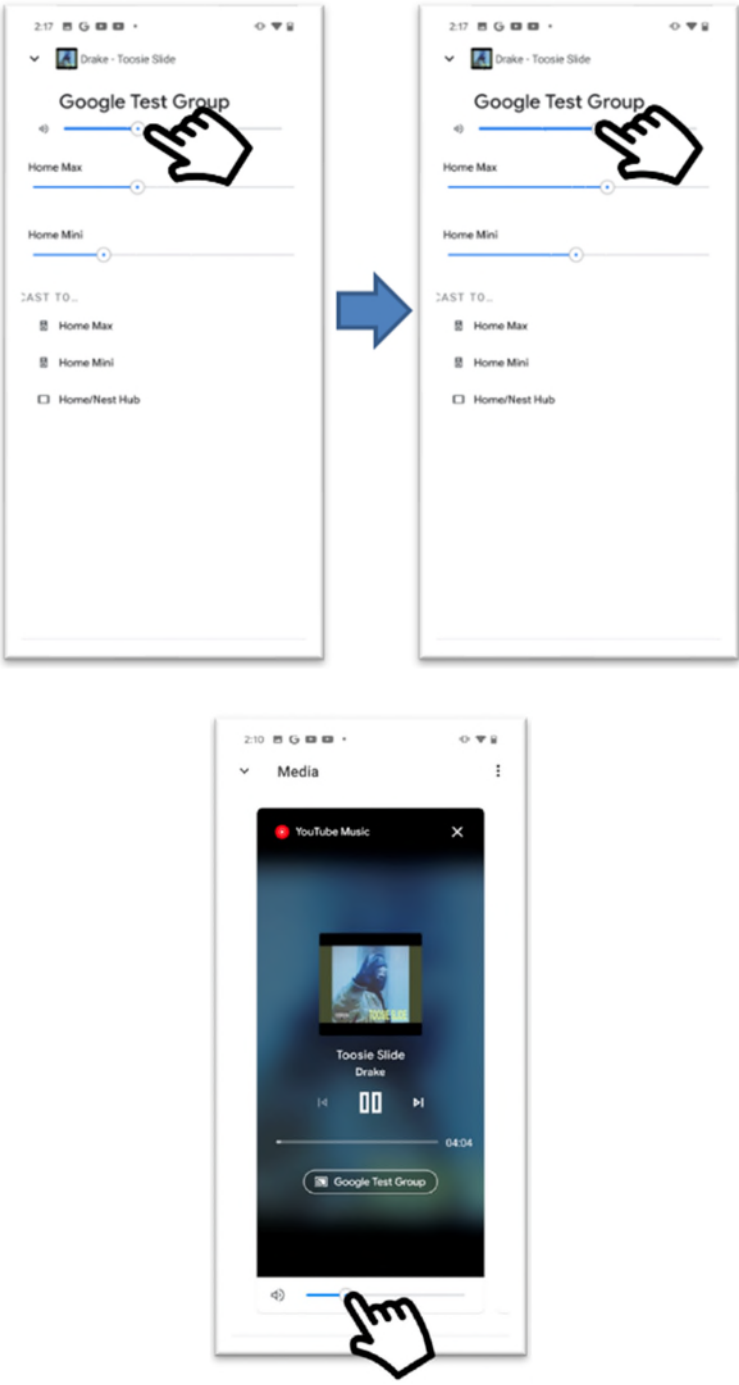
average of all member’s logical volume level.”); Exs. 84, 123-125.

This functionality is evidenced by the exemplary screenshots/images below:

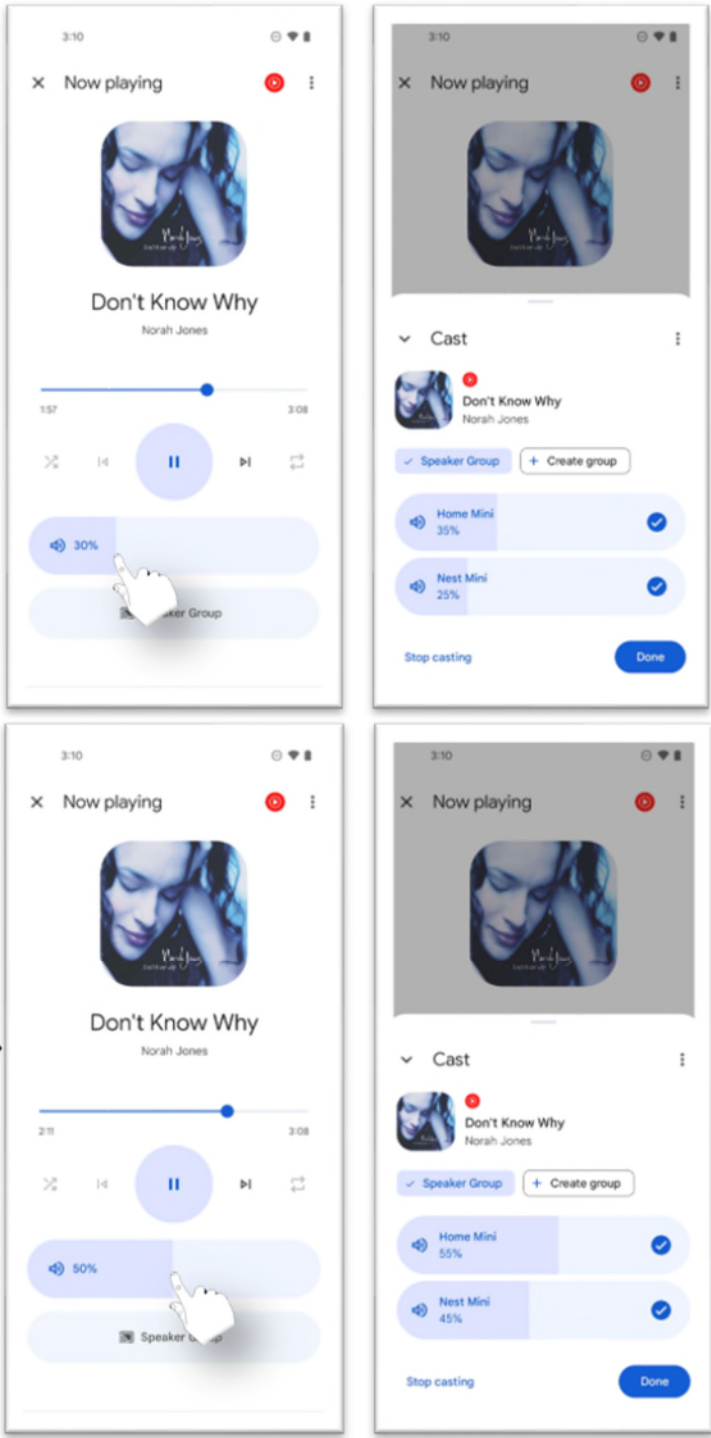
Google Home app



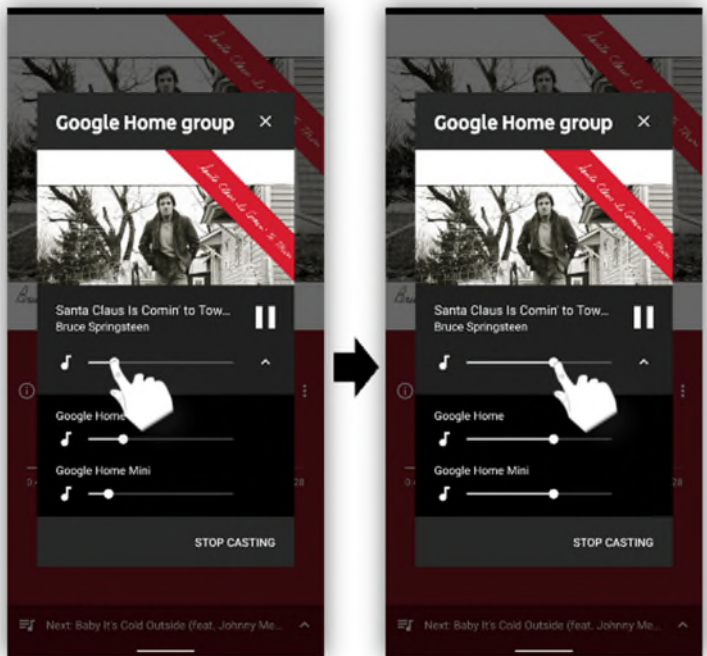
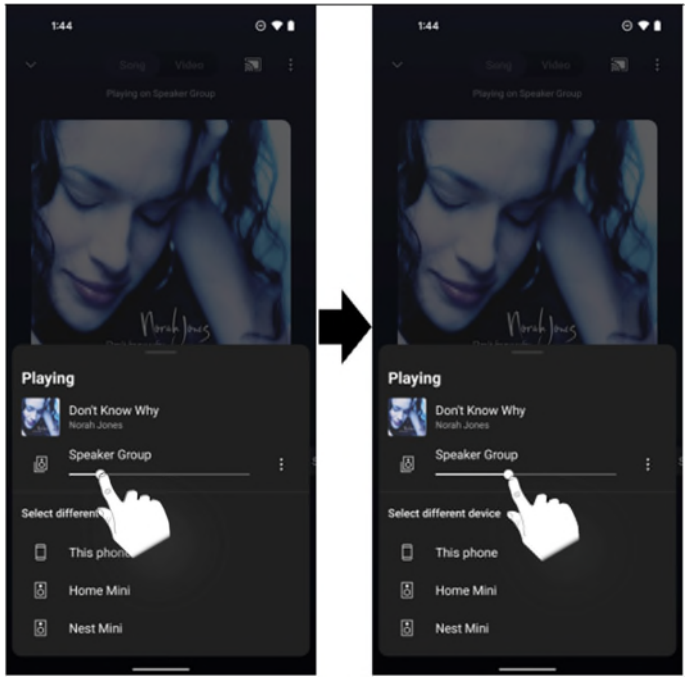
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Claim 25	Google
	

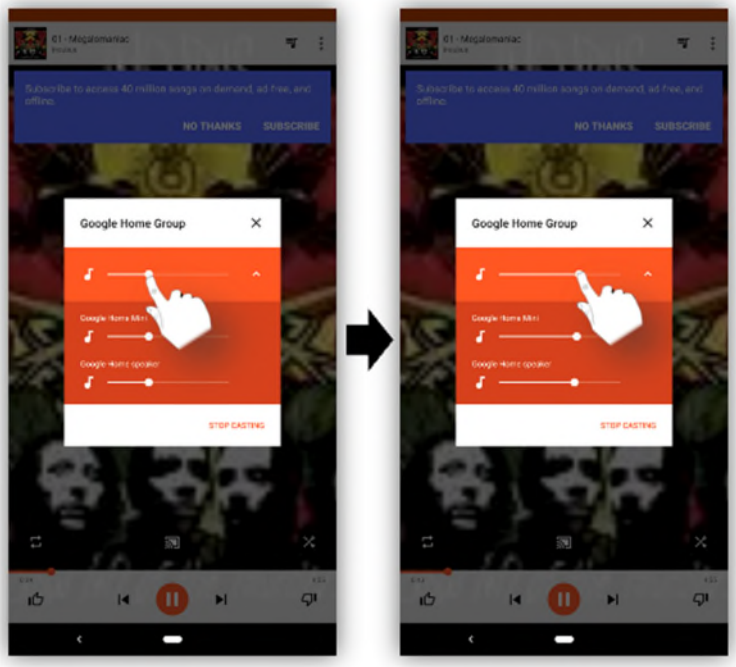
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Claim 25	Google
	 <p data-bbox="755 1711 1071 1764"><u>YouTube Music app</u></p>

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Claim 25	Google
	
	 <p data-bbox="760 1701 1112 1743"><u>Google Play Music app</u></p>


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Claim 25	Google
	 <p data-bbox="755 945 1031 997"><u>Hub Audio Player</u></p>

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Claim 25	Google
	 <p>The first screenshot shows the 'Now playing' screen with 'Lucky' on Google Play. The volume controls are: Group volume (27%), Google Home (30%), and Google Home Mini (23%). A hand cursor is pointing at the Group volume slider.</p> <p>The second screenshot shows the same screen after adjustment. The volume controls are: Group volume (40%), Google Home (43%), and Google Home Mini (57%). A hand cursor is pointing at the Group volume slider.</p> <p>The third screenshot shows a different interface with 'Hide (feat. Seez'n)' on Google Play. The volume controls are: Group volume (30%), Bedroom Speaker (20%), Office speaker (40%), and Hub Speaker (this device) (0%). A hand cursor is pointing at the Group volume slider.</p>

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Claim 25	Google
	 A screenshot of the Google Home app interface on a tablet. The screen displays 'Now playing' at the top with a song 'Hide (feat. Seozyn)'. Below this, there are four speaker volume sliders: 'Group volume' at 56%, 'Bedroom Speaker' at 46%, 'Office speaker' at 66%, and 'Hub Speaker (this device)' which is currently muted. A hand icon is shown interacting with the 'Bedroom Speaker' slider. A black arrow points from the left side of the tablet towards the 'Bedroom Speaker' slider.

248. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more claims of the '014 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe one or more claims of the '014 Patent. In particular, (a) Google had actual knowledge of the '014 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '014 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses thereof, including infringing uses (*see* Exs. 29, 34-39, 55), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '014 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '014 Patent. For instance, at a minimum, Google has supplied and continues to supply the Google Apps to customers while knowing that installation and/or use of the Google Apps will infringe one or more

1 claims of the '014 Patent and that Google's customers then directly infringe one
2 or more claims of the '014 Patent by installing and/or using the Google Apps in
3 accordance with Google's product literature. *See, e.g., id.*

4 249. As another example, Google has supplied and continues to supply
5 Hub Audio Players to customers while knowing that use of these products will
6 infringe one or more claims of the '014 Patent and that Google's customers then
7 directly infringe one or more claims of the '014 Patent by using these Hub Audio
8 Players in accordance with Google's product literature. *See, e.g., Exs. 29, 84.*

9 250. Additionally and/or alternatively, Google has indirectly infringed and
10 continues to indirectly infringe one or more of the claims of the '014 Patent, in
11 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
12 States, and/or importing into the United States, components in connection with the
13 Google Wireless Audio System that contribute to the direct infringement of
14 the '014 Patent by users of the Google Wireless Audio System. In particular, (a)
15 Google had actual knowledge of the '014 Patent or was willfully blind to its
16 existence prior to (at least as early as September 2016), and no later than, the
17 filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for
18 sale, sells, and/or imports, in connection with the Google Wireless Audio System,
19 one or more material components of the invention of the '014 Patent that are not
20 staple articles of commerce suitable for substantial noninfringing use, (c) Google
21 knows (or should know) that such component(s) were especially made or
22 especially adapted for use in an infringement of the '014 Patent, and (d) users of
23 devices that comprise such material component(s) directly infringe one or more
24 claims of the '014 Patent. For instance, at a minimum, Google offers for sale,
25 sells, and/or imports the Google Apps for installation on devices (e.g.,
26 smartphones, tablets, and computers) that meet one or more claims of the '014
27 Patent. *See, e.g., Exs. 29, 34-39, 55.* The Google Apps are material components
28 of the devices that meet the one or more claims of the '014 Patent. Further,

1 Google especially made and/or adapted the Google Apps for use in devices that
2 meet the one or more claims of the '014 Patent, and the Google Apps are not a
3 staple article of commerce suitable for substantial noninfringing use. Google's
4 customers then directly infringe the one or more claims of the '014 Patent by
5 installing and/or using the Google Apps on the customers' devices.

6 251. As another example, Google offers for sale, sells, and/or imports
7 software updates for Hub Audio Players that meet one or more claims of the '014
8 Patent. *See, e.g.*, Exs. 29, 84, 85. These software updates are material
9 components of the Hub Audio Players that meet the one or more claims of
10 the '014 Patent. Further, Google especially made and/or adapted these software
11 updates for use in the Hub Audio Players that meet the one or more claims of
12 the '014 Patent, and these software updates are not staple articles of commerce
13 suitable for substantial noninfringing use. Google's customers then directly
14 infringe the one or more claims of the '014 Patent by installing and using software
15 updates on the Hub Audio Players.

16 252. Google's infringement of the '014 Patent is also willful because
17 Google (a) had actual knowledge of the '014 Patent or was willfully blind to its
18 existence prior to (at least as early as September 2016), and no later than, the
19 filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
20 aforementioned activity despite an objectively high likelihood that Google's
21 actions constituted infringement of the '014 Patent, and (c) this
22 objectively-defined risk was either known or so obvious that it should have been
23 known to Google.

24 253. Additional allegations regarding Google's pre-suit knowledge of
25 the '014 Patent and willful infringement will likely have evidentiary support after
26 a reasonable opportunity for discovery.

27 254. Sonos is in compliance with any applicable marking and/or notice
28 provisions of 35 U.S.C. § 287 with respect to the '014 Patent.

1 255. Sonos is entitled to recover from Google all damages that Sonos has
2 sustained as a result of Google’s infringement of the ’014 Patent, including,
3 without limitation, a reasonable royalty and lost profits.

4 256. Google’s infringement of the ’014 Patent was and continues to be
5 willful and deliberate, entitling Sonos to enhanced damages.

6 257. Google’s infringement of the ’014 Patent is exceptional and entitles
7 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
8 U.S.C. § 285.

9 258. Google’s infringement of the ’014 Patent has caused irreparable
10 harm (including the loss of market share) to Sonos and will continue to do so
11 unless enjoined by this Court.

12 **COUNT II: INFRINGEMENT OF U.S. PATENT NO. 8,588,949**

13 259. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
14 110-25 of this Second Amended Complaint as if fully set forth herein.

15 260. Google and/or users of the Google Wireless Audio System have
16 directly infringed (either literally or under the doctrine of equivalents) and have
17 continued to directly infringe up to the date of expiration of the ’949 Patent one or
18 more of the claims of the ’949 Patent, in violation of 35 U.S.C. § 271(a), by
19 making, using, offering for sale, and/or selling the Google Wireless Audio System
20 within the United States and/or importing the Google Wireless Audio System into
21 the United States without authority or license.

22 261. As just one non-limiting example, set forth below is an exemplary
23 infringement claim chart for claim 1 of the ’949 Patent in connection with the
24 Google Wireless Audio System. This claim chart is based on publicly available
25 information. Sonos reserves the right to modify this claim chart, including, for
26 example, on the basis of information about the Google Wireless Audio System
27 that it obtains during discovery.
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Claim 1	Google
<p>A multimedia controller including a processor, the controller configured to:</p>	<p>At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, and/or the Google Play Music app (where a computing device installed with at least one of these apps is referred to herein as a “Chromecast-enabled computing device”⁶) comprises a “multimedia controller including a processor,” as recited in claim 1. <i>See, e.g.</i>, Exs. 40-43, 87-92. At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max,⁷ Nest Audio, and Nest Wifi Point comprises an “independent playback device,” as recited in claim 1.</p>
<p>provide a user interface for a player group, wherein the player group includes a plurality of players in a local area network, and wherein each player is an independent</p>	<p>Each Chromecast-enabled computing device and Hub Audio Player is configured to provide a user interface for a player group that includes a plurality of Google Audio Players in a local area network (LAN), where each Google Audio Player is an independent playback device configured to playback a multimedia output from a multimedia source.</p> <p>For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to provide a user interface that facilitates forming and/or controlling one or more groups of Google Audio Players</p>

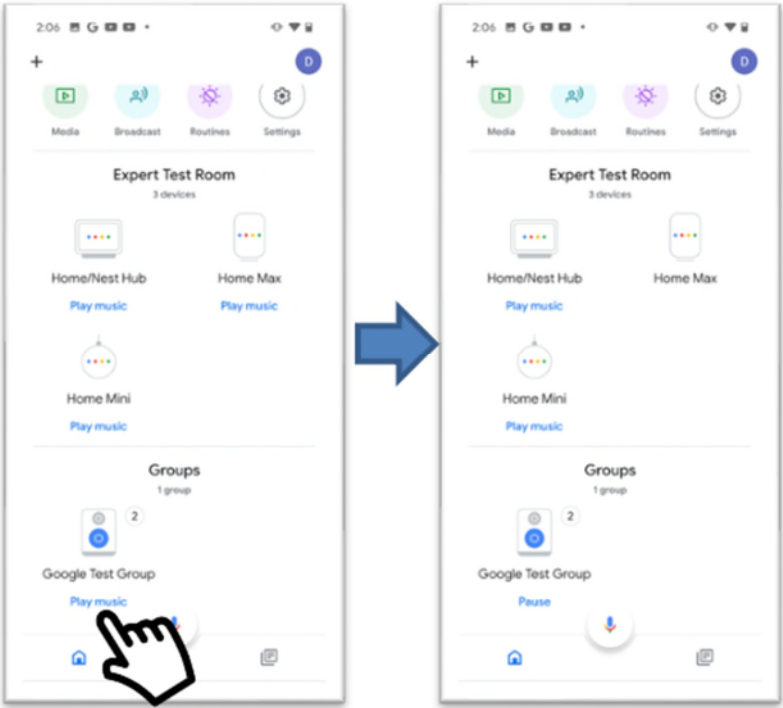
⁶ Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and the Pixelbook and Pixelbook Go laptops installed with an Android version of the Google Home app, the YouTube Music app, and/or the Google Play Music app is an example of a “Chromecast-enabled computing device.” Likewise, each other smartphone, tablet, and computer installed with an Android or iOS version of the Google Home app, the YouTube Music app, and/or the Google Play Music app is an example of a “Chromecast-enabled computing device,” including by way of example, Apple and Samsung phones and tablets.

⁷ In addition to being configured as an “independent playback device,” as recited in claim 1, each Home Hub, Nest Hub, and Nest Hub Max (referred to herein as a “Hub Audio Player”) is installed with Home/Nest Hub software such that the given Hub Audio Player is configured as a “multimedia controller,” as recited in claim 1, that is capable of facilitating forming and controlling one or more groups of two or more Google Audio Players.

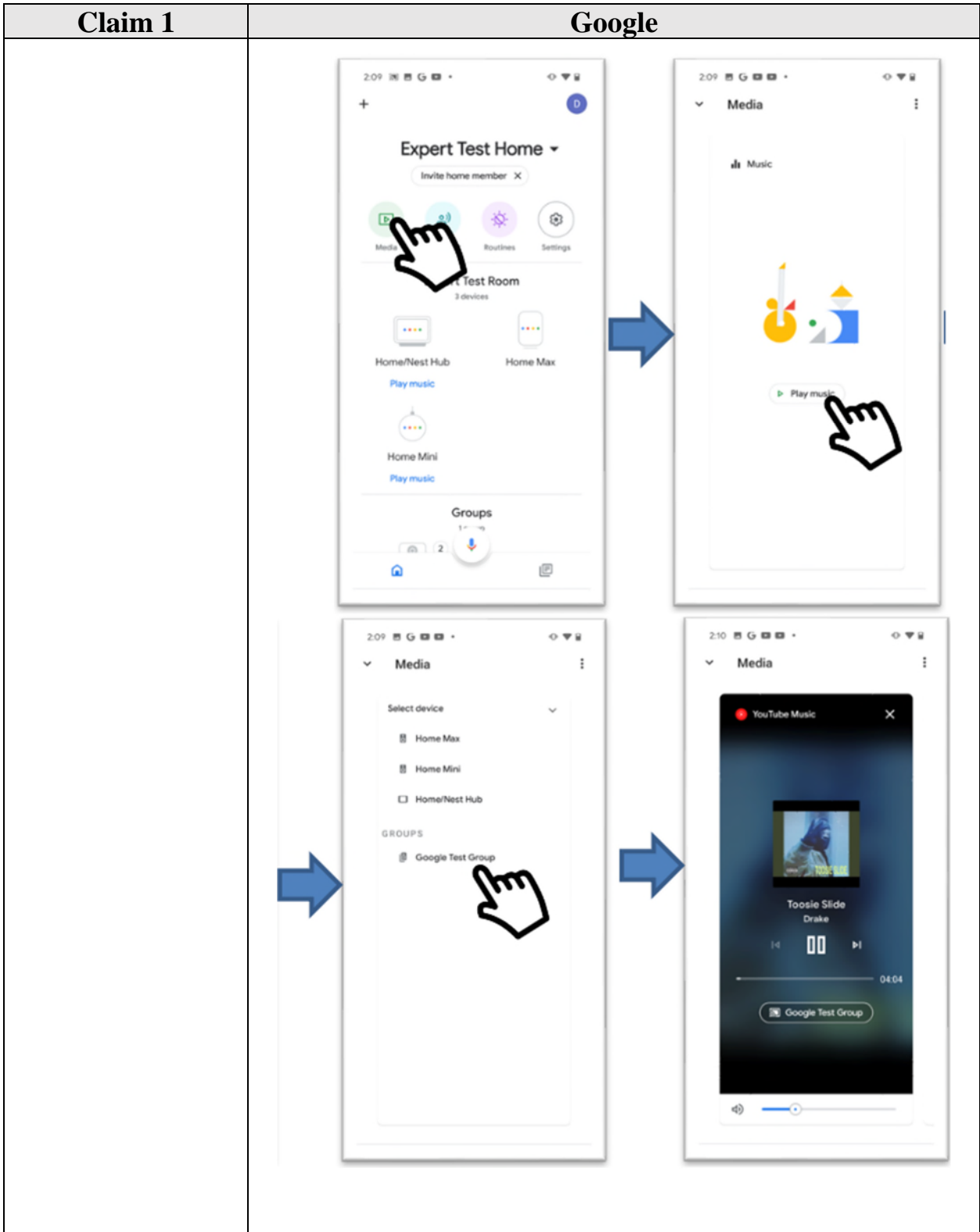
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Claim 1	Google
<p>playback device configured to playback a multimedia output from a multimedia source;</p>	<p>(<i>e.g.</i>, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface). <i>See, e.g.</i>, Exs. 29, 34, 36, 38, 93. Some exemplary screenshots of aspects of the user interface provided by a Chromecast-enabled computing device or Hub Audio Player are illustrated below.</p> <p>Each group includes two or more Google Audio Players in a local Wi-Fi network (which is a LAN) that are configured to play back audio in synchrony with one another, where each Google Audio Player is an independent playback device configured to playback at least an audio output from an audio source (<i>e.g.</i>, Google Play Music, Spotify, etc.). <i>See e.g.</i>, Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); Exs. 94, 106.</p>
<p>accept via the user interface an input to facilitate formation of the player group, wherein the input to facilitate formation of the player group indicates that at least two of the plurality of players in the local area network are to be included in the player group for synchronized playback of a multimedia output from the same</p>	<p>Each Chromecast-enabled computing device and Hub Audio Player is configured to accept via the user interface an input to facilitate formation of the player group, where the input to facilitate formation of the player group indicates that at least two of the plurality of Google Audio Players in the LAN are to be included in the player group for synchronized playback of a multimedia output from the same multimedia source.</p> <p>For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a GUI view (<i>e.g.</i>, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface) through which the Chromecast-enabled computing device or Hub Audio Player receives user input that facilitates formation of a group of at least two Google Audio Players in a local Wi-Fi network that are configured to play back audio in synchrony. <i>See, e.g.</i>, Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music</p>

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Claim 1	Google
<p>multimedia source;</p>	<p>throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); Exs. 93-94, 106. Examples of this functionality are illustrated in the following sequences of screenshots/images.</p> <p><u>Google Home app</u></p>  <p>The image shows two sequential screenshots of the Google Home app interface, connected by a blue arrow pointing from left to right. Both screenshots show a mobile phone screen with the time 2:06 and various status icons at the top. The interface is organized into sections: a top navigation bar with 'Media', 'Broadcast', 'Routines', and 'Settings' icons; a section titled 'Expert Test Room' with '3 devices' containing three smart home devices (Home/Nest Hub, Home Max, and Home Mini), each with a 'Play music' button; and a 'Groups' section with '1 group' containing a 'Google Test Group' with a 'Play music' button. In the left screenshot, a hand icon is pointing at the 'Play music' button for the 'Google Test Group'. In the right screenshot, the button for the 'Google Test Group' has changed to a 'Pause' button, and a microphone icon is visible at the bottom of the screen.</p>

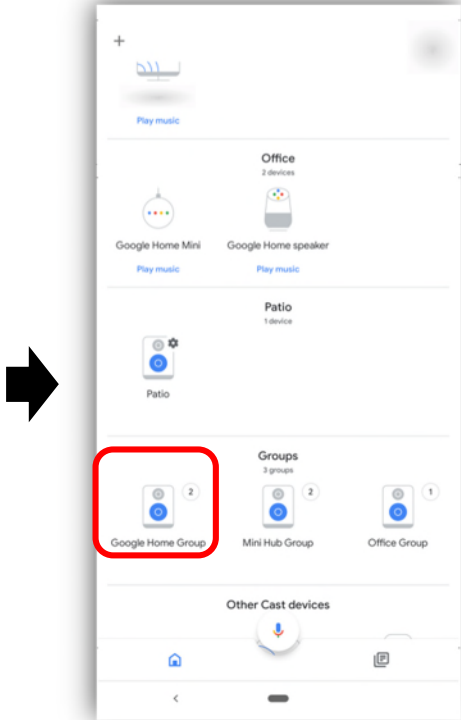
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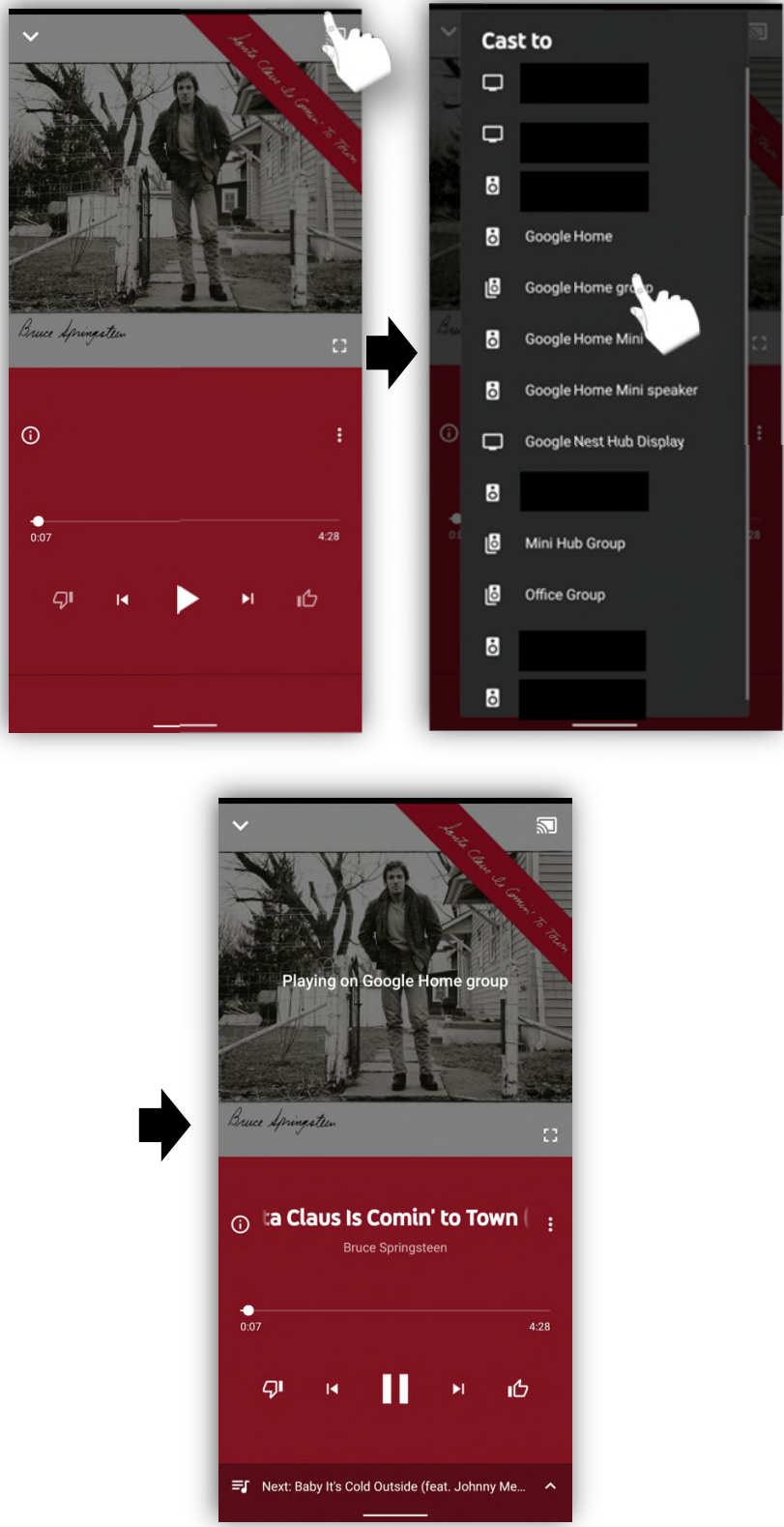
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Claim 1	Google
	<p>The sequence of screenshots illustrates the following steps:</p> <ol style="list-style-type: none">Step 1: The 'Add and manage' screen. The 'Create speaker group' option is highlighted with a hand cursor.Step 2: The 'Create a speaker group' screen. It shows two devices: 'Google Home Mini Office' and 'Google Home speaker Office'. A hand cursor is shown selecting the 'Next' button at the bottom right.Step 3: The 'Name this speaker group' screen. The text 'Google Home Group' is entered into the input field. A hand cursor is shown clicking the 'SAVE' button at the bottom.Step 4: The 'Add and manage' screen. A red box highlights a message at the bottom: 'Group is successfully created!'.

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Claim 1	Google
	 <p data-bbox="597 1018 917 1060">YouTube Music App</p>

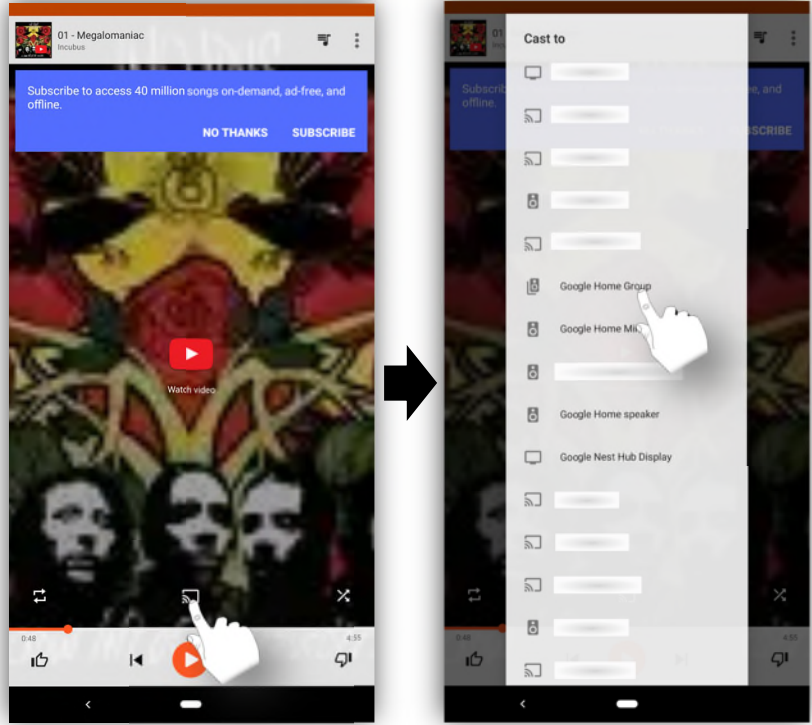
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Claim 1	Google
	 <p data-bbox="597 1864 950 1906"><u>Google Play Music app</u></p>

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Claim 1

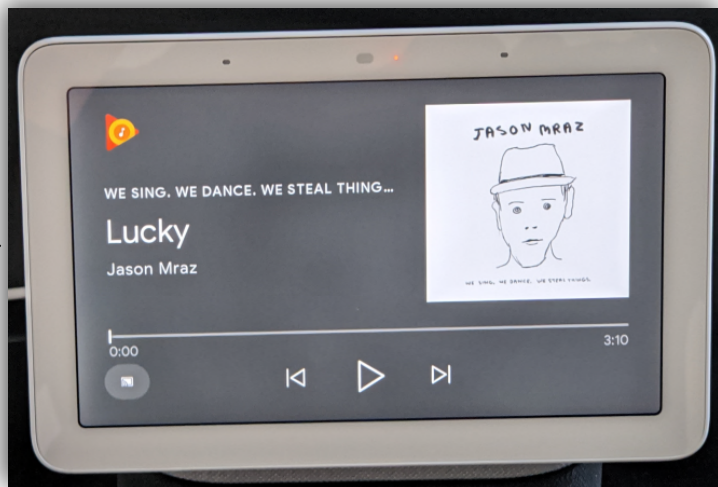
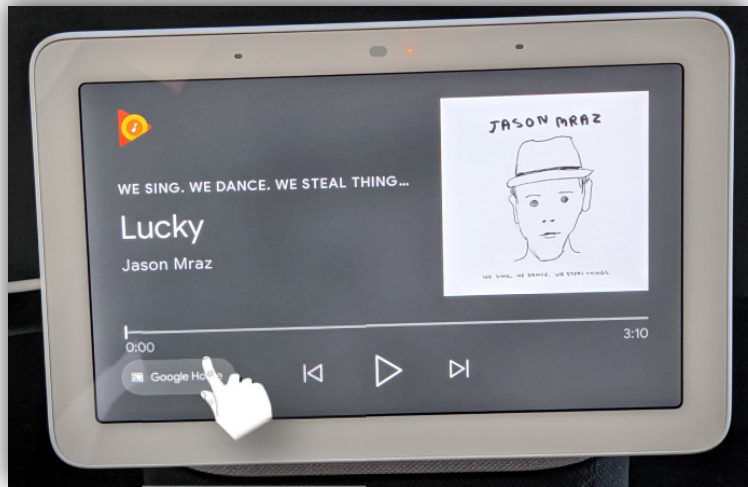
Google



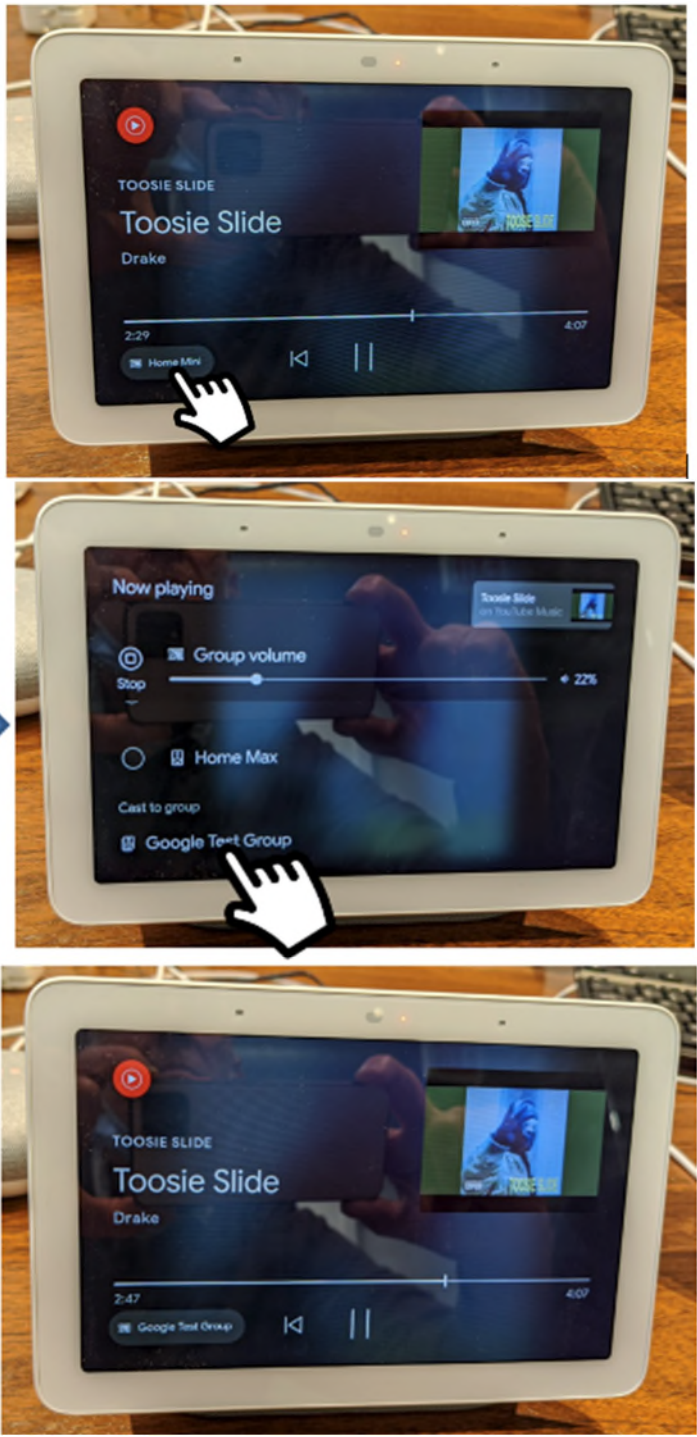
Hub Audio Player

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Claim 1 **Google**




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Claim 1	Google
	

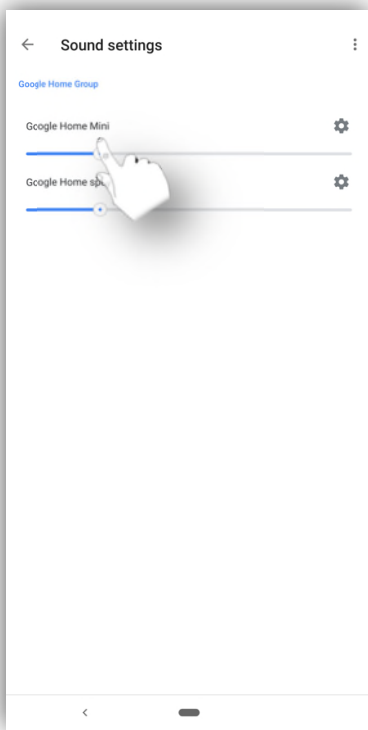
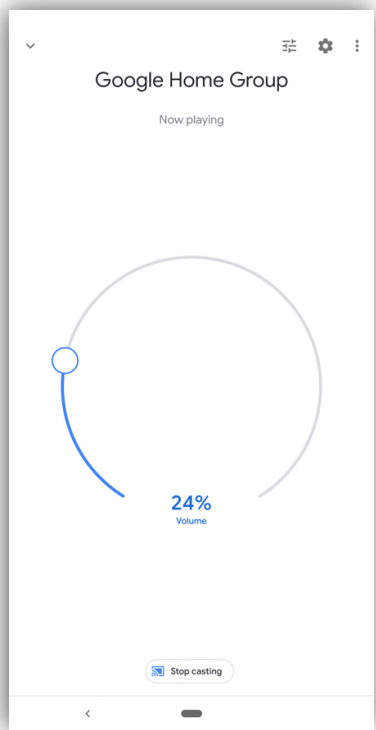
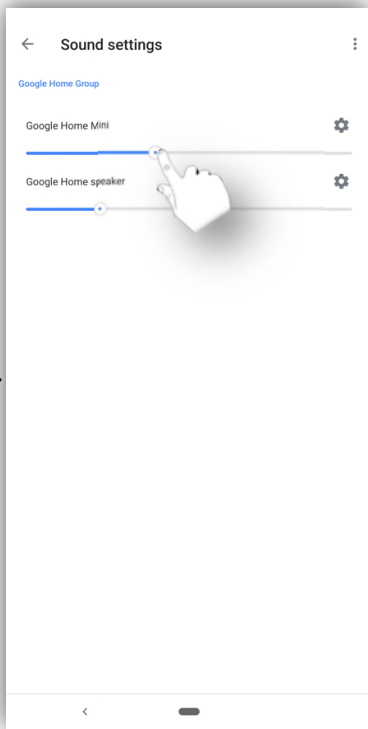
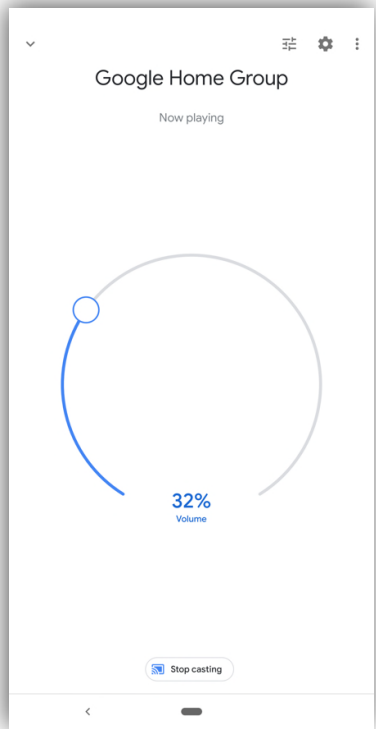
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Claim 1	Google
	 <p>The image displays three sequential screenshots of a tablet screen, illustrating a user interface for controlling music playback across multiple smart home devices. The first screenshot shows a music player interface for 'Toosie Slide' by Drake, with a 'Home Mini' button highlighted by a hand cursor. A blue arrow points to the second screenshot, which shows the 'Now playing' screen with a 'Group volume' slider set to 22% and a list of devices: 'Home/Nest Hub (this device)', 'Home Max', and 'Home Mini'. A hand cursor points to the 'Home Mini' device. A second blue arrow points to the third screenshot, where the 'Home Mini' volume is now set to 41% and the 'Home Max' volume is set to 67%.</p>

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Claim 1	Google
	
<p>for any individual player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual player, wherein the player-specific input to adjust the volume of that individual player causes that individual player to adjust its volume; and</p>	<p>Each Chromecast-enabled computing device and Hub Audio Player is configured to, for any individual Google Audio Player in the player group, accept via the user interface a player-specific input to adjust a volume of that individual Google Audio Player, where the player-specific input to adjust the volume of that individual Google Audio Player causes that individual Google Audio Player to adjust its volume.</p> <p>For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a GUI view (<i>e.g.</i>, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface) having a respective player-specific volume slider for each individual Google Audio Player in a group through which the Chromecast-enabled computing device or Hub Audio Player accepts a player-specific input to adjust a volume of an individual Google Audio Player, which in turn causes the individual Google Audio Player to adjust its volume. Examples of this functionality are illustrated in the following sequences of screenshots.</p> <p><u>Google Home app</u></p>

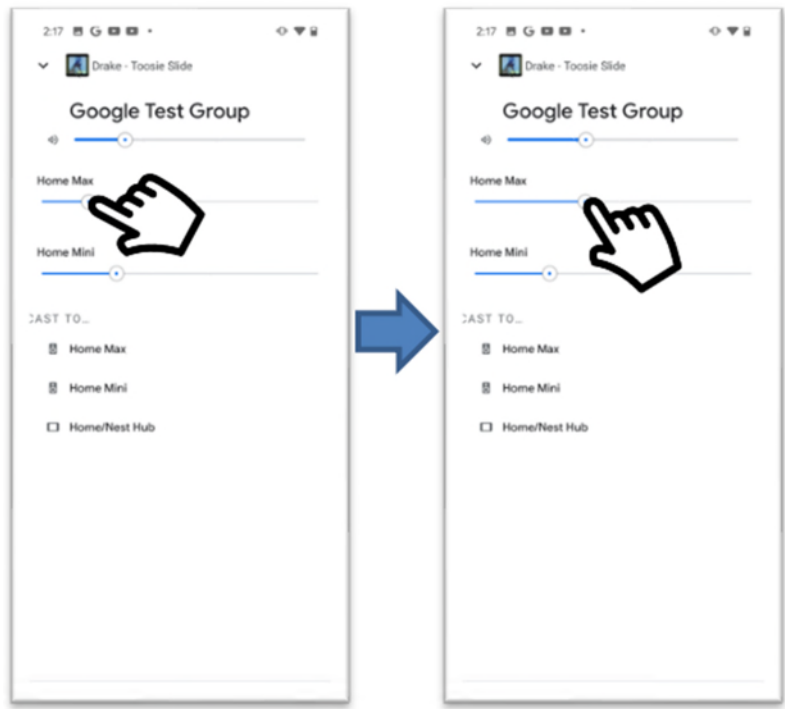
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Claim 1	Google
	   

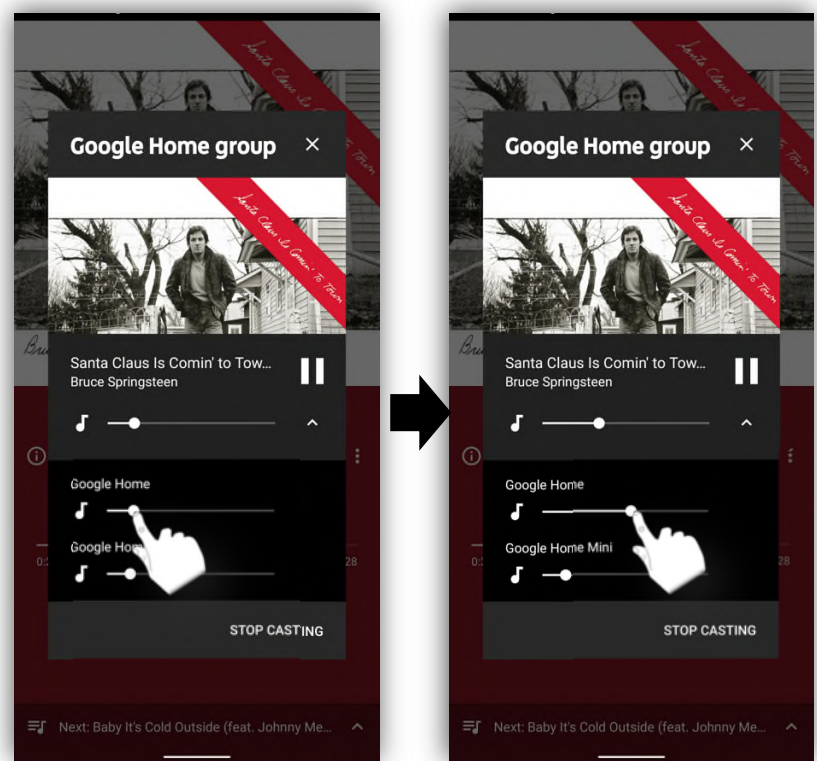


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Claim 1 **Google**



YouTube Music App



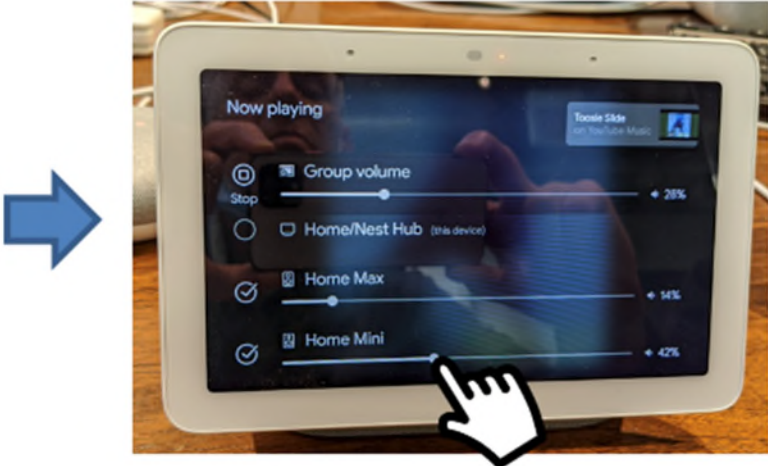
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Claim 1	Google
	<p data-bbox="597 226 950 262"><u>Google Play Music app</u></p>  <p data-bbox="597 1138 868 1176"><u>Hub Audio Player</u></p>

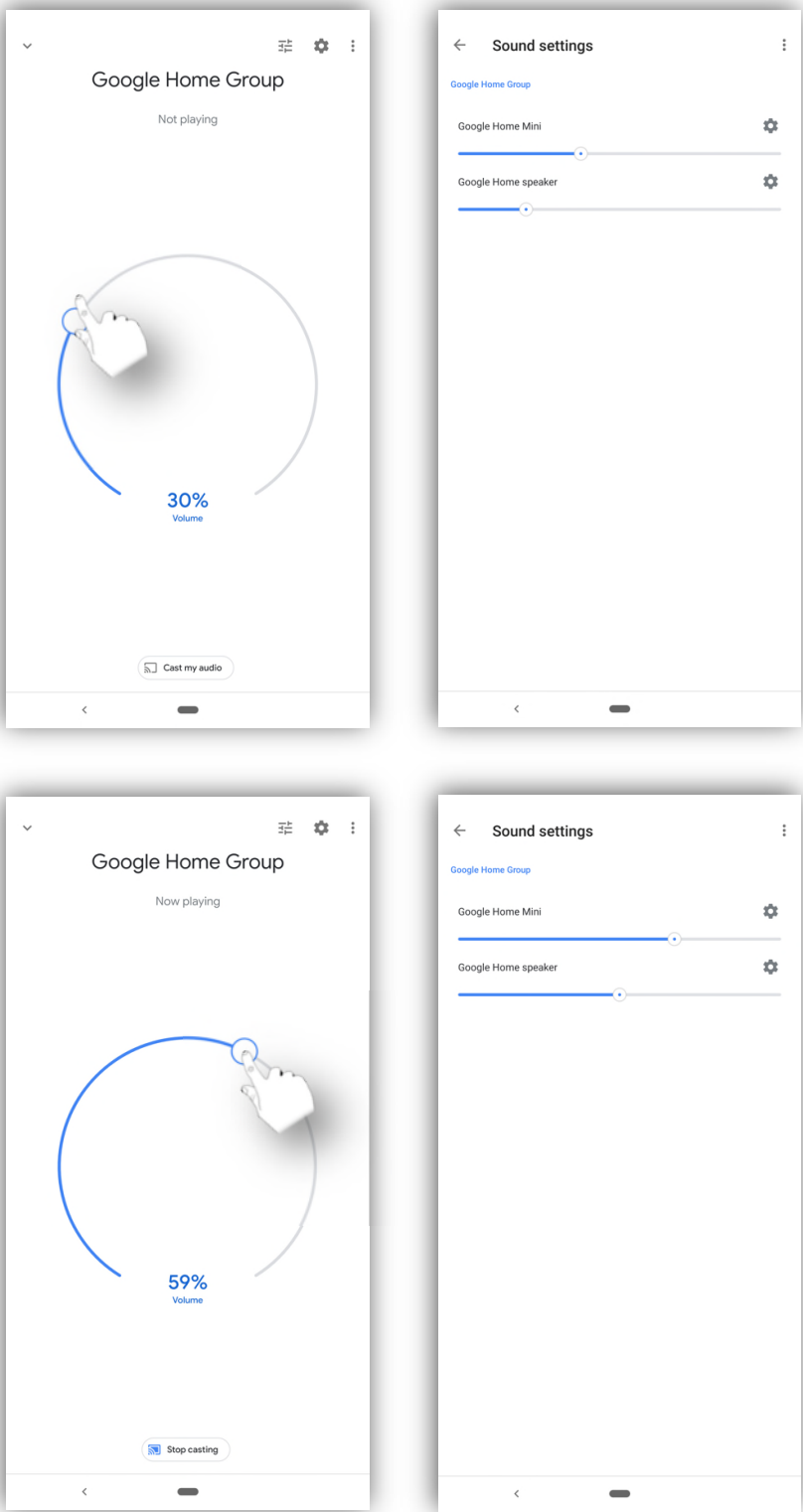
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Claim 1	Google
	

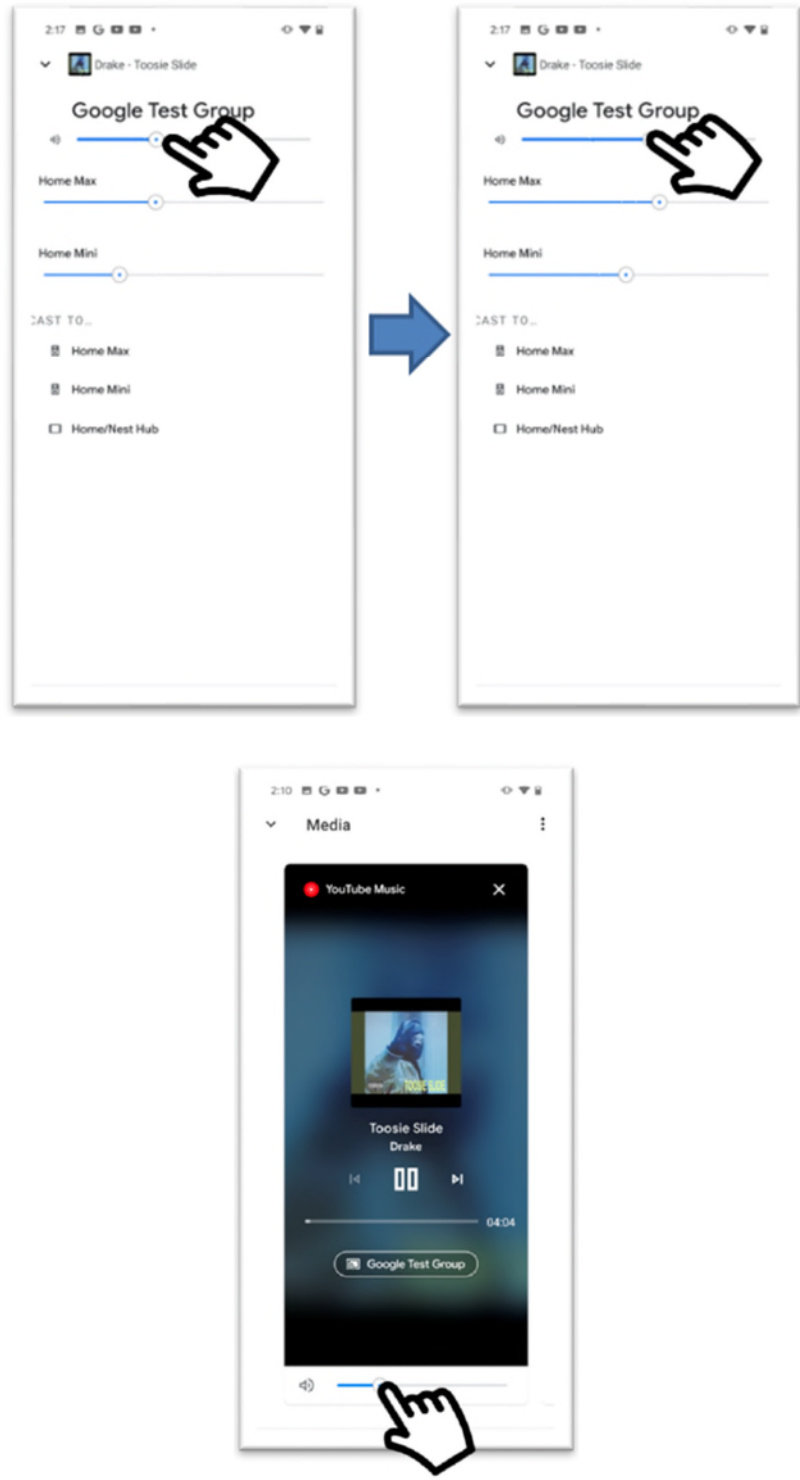
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Claim 1	Google
	 <p data-bbox="597 716 1503 926"><i>See also, e.g.,</i> Ex. 55 (“When casting to a group, there are two ways to change the volume: . . . 2. Changing a single speaker’s volume when it’s part of a group. This action will only change that individual speaker.”) (emphasis in original); Exs. 29, 84, 106.</p>
<p data-bbox="284 934 574 1648">accept via the user interface a group-level input to adjust a volume associated with the player group, wherein the group-level input to adjust the volume associated with the player group causes each of the players in the player group to adjust its respective volume.</p>	<p data-bbox="597 934 1503 1228">Each Chromecast-enabled computing device and Hub Audio Player is configured to accept via the user interface a group-level input to adjust a volume associated with the player group, where the group-level input to adjust the volume associated with the player group causes each of the Google Audio Players in the player group to adjust its respective volume.</p> <p data-bbox="597 1270 1503 1774">For instance, each Chromecast-enabled computing device and Hub Audio Player is programmed with the capability to display a GUI view (<i>e.g.</i>, via a Google Home, YouTube Music, Google Play Music, or Hub Audio Player user interface) having a “Group volume” slider for a group of Google Audio Players through which the Chromecast-enabled computing device or Hub Audio Player accepts a group-level input to adjust a volume associated with the group of Google Audio Players, which in turn causes each Google Audio Player in the group to adjust its respective volume. Examples of this functionality are illustrated in the following sequences of screenshots.</p> <p data-bbox="597 1827 873 1869"><u>Google Home app</u></p>

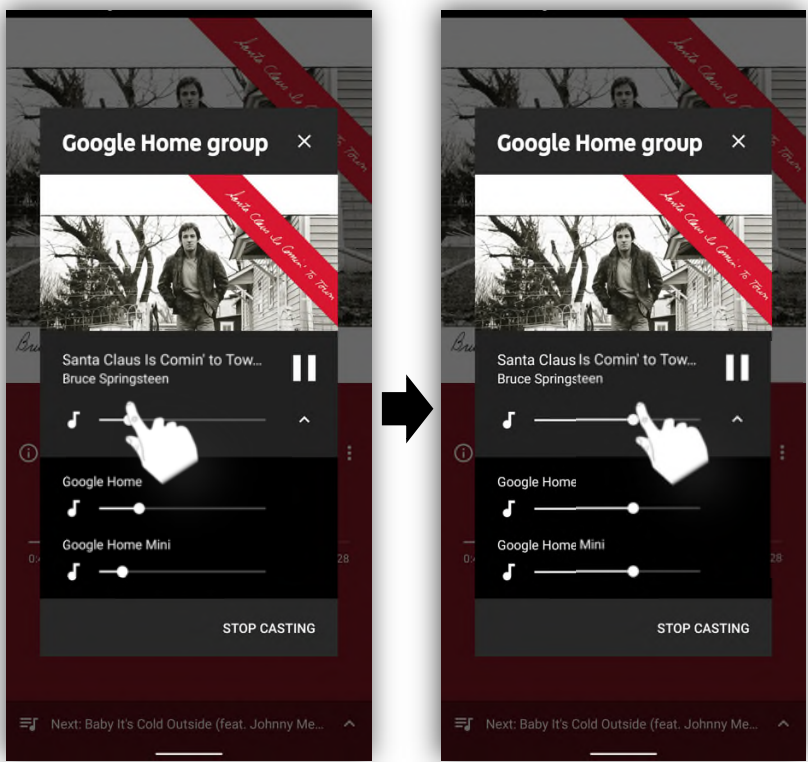
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Claim 1	Google
	 <p>The image displays four screenshots of the Google Home app interface, arranged in a 2x2 grid. The top-left screenshot shows the 'Google Home Group' screen with 'Not playing' and a volume slider at 30%. The top-right screenshot shows the 'Sound settings' screen with sliders for 'Google Home Mini' and 'Google Home speaker'. The bottom-left screenshot shows the 'Google Home Group' screen with 'Now playing' and a volume slider at 59%. The bottom-right screenshot shows the 'Sound settings' screen. A black arrow points from the left column to the bottom-left screenshot.</p>

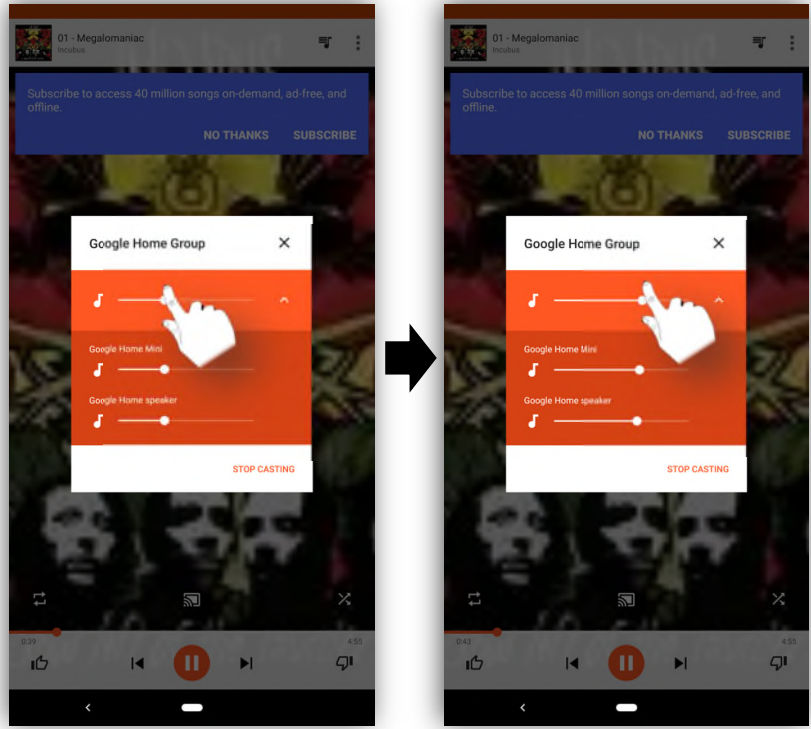
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Claim 1	Google
	 <p data-bbox="592 1753 909 1795"><u>YouTube Music app</u></p>

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Claim 1	Google
	 <p data-bbox="597 1092 950 1144"><u>Google Play Music app</u></p>

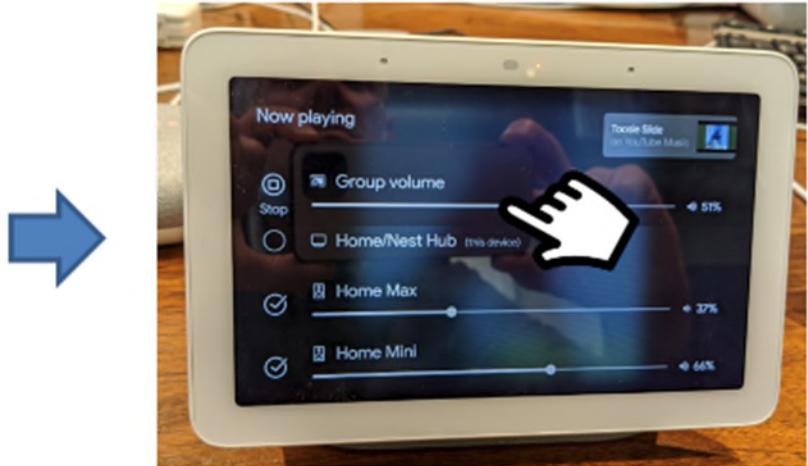
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Claim 1	Google
	 <p data-bbox="597 1066 873 1108"><u>Hub Audio Player</u></p>

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Claim 1	Google
	 <p>The figure consists of three sequential screenshots of a Google Home tablet interface, arranged vertically. A black arrow points from the first screenshot to the second. The first screenshot shows the 'Now playing' screen with 'Lucky' on Google Play. The volume sliders are: Group volume (27%), Google Home (30%), and Google Home Mini (23%). A hand cursor is positioned over the Group volume slider. The second screenshot shows the same screen, but the Group volume slider is now at 60%, Google Home is at 63%, and Google Home Mini is at 57%. The hand cursor is still over the Group volume slider. The third screenshot shows a different 'Now playing' screen with 'Yoake Slide' by The Weeknd. The volume sliders are: Group volume (28%), Home/Nest Hub (14%), Home Max (14%), and Home Mini (42%). A hand cursor is positioned over the Group volume slider.</p>

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Claim 1	Google
	 <p data-bbox="597 756 1485 924"><i>See also, e.g., Ex. 55</i> (“When casting to a group, there are two ways to change the volume: 1. Changing the group volume. This action will change the volume of all speakers within the group.”) (emphasis in original); Ex. 84.</p>

262. Additionally and/or alternatively, Google has indirectly infringed and have continued to indirectly infringe up to the date of expiration of the '949 Patent one or more claims of the '949 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe one or more claims of the '949 Patent. In particular, (a) Google had actual knowledge of the '949 Patent or was willfully blind to its existence prior to (at least as early as September 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally caused, urged, or encouraged users of the Google Wireless Audio System to directly infringe one or more claims of the '949 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses thereof, including infringing uses (*see* Exs. 29, 34-39, 55), (c) Google knew (or should have known) that its actions would induce users of the Google Wireless Audio System to directly infringe one or more claims the '949 Patent, and (d) users of the Google Wireless Audio System directly infringed one or more claims

1 of the '949 Patent. For instance, at a minimum, Google has supplied the Google
2 Apps to customers while knowing that installation and/or use of the Google Apps
3 would infringe one or more claims of the '949 Patent and that Google's customers
4 then directly infringed one or more claims of the '949 Patent by installing and/or
5 using the Google Apps in accordance with Google's product literature. *See, e.g.,*
6 *id.*

7 263. As another example, Google has supplied Hub Audio Players to
8 customers while knowing that use of these products would infringe one or more
9 claims of the '949 Patent and that Google's customers then directly infringed one
10 or more claims of the '949 Patent by using these Hub Audio Players in
11 accordance with Google's product literature. *See, e.g.,* Exs. 29, 84.

12 264. Additionally and/or alternatively, Google has indirectly infringed and
13 continued to indirectly infringe up to the date of expiration of the '949 Patent one
14 or more of the claims of the '949 Patent, in violation of 35 U.S.C. § 271(c), by
15 offering to sell or selling within the United States, and/or importing into the
16 United States, components in connection with the Google Wireless Audio System
17 that contributed to the direct infringement of the '949 Patent by users of the
18 Google Wireless Audio System. In particular, (a) Google had actual knowledge
19 of the '949 Patent or was willfully blind to its existence prior to (at least as early
20 as September 2016), and no later than, the filing of the Original Complaint (*see* ¶¶
21 38-71 above), (b) Google offered for sale, sold, and/or imported, in connection
22 with the Google Wireless Audio System, one or more material components of the
23 invention of the '949 Patent that are not staple articles of commerce suitable for
24 substantial noninfringing use, (c) Google knew (or should have known) that such
25 component(s) were especially made or especially adapted for use in an
26 infringement of the '949 Patent, and (d) users of devices that comprise such
27 material component(s) directly infringed one or more claims of the '949 Patent.
28 For instance, at a minimum, Google offered for sale, sold, and/or imported the

1 Google Apps for installation on devices (*e.g.*, smartphones, tablets, and
2 computers) that meet one or more claims of the '949 Patent. *See, e.g.*, Exs. 29,
3 34-39, 55. The Google Apps are material components of the devices that meet the
4 one or more claims of the '949 Patent. Further, Google especially made and/or
5 adapted the Google Apps for use in devices that meet the one or more claims of
6 the '949 Patent, and the Google Apps are not a staple article of commerce suitable
7 for substantial noninfringing use. Google's customers then directly infringed the
8 one or more claims of the '949 Patent by installing and/or using the Google Apps
9 on the customers' devices.

10 265. As another example, Google offered for sale, sold, and/or imported
11 software updates for Hub Audio Players that meet one or more claims of the '949
12 Patent. *See, e.g.*, Exs. 29, 84, 85. These software updates are material
13 components of the Hub Audio Players that meet the one or more claims of
14 the '949 Patent. Further, Google especially made and/or adapted these software
15 updates for use in the Hub Audio Players that meet the one or more claims of
16 the '949 Patent, and these software updates are not staple articles of commerce
17 suitable for substantial noninfringing use. Google's customers then directly
18 infringed the one or more claims of the '949 Patent by installing and using
19 software updates on the Hub Audio Players.

20 266. Google's infringement of the '949 Patent was also willful because
21 Google (a) had actual knowledge of the '949 Patent or was willfully blind to its
22 existence prior to (at least as early as October 2016), and no later than, the filing
23 of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
24 aforementioned activity despite an objectively high likelihood that Google's
25 actions constituted infringement of the '949 Patent, and (c) this
26 objectively-defined risk was either known or so obvious that it should have been
27 known to Google.
28

1 267. Additional allegations regarding Google's pre-suit knowledge of
2 the '949 Patent and willful infringement will likely have evidentiary support after
3 a reasonable opportunity for discovery.

4 268. Sonos is in compliance with any applicable marking and/or notice
5 provisions of 35 U.S.C. § 287 with respect to the '949 Patent.

6 269. Sonos is entitled to recover from Google all damages that Sonos has
7 sustained as a result of Google's infringement of the '949 Patent, including,
8 without limitation, a reasonable royalty and lost profits.

9 270. Google's infringement of the '949 Patent was willful and deliberate,
10 entitling Sonos to enhanced damages.

11 271. Google's infringement of the '949 Patent was exceptional and
12 entitles Sonos to attorneys' fees and costs incurred in prosecuting this action
13 under 35 U.S.C. § 285.

14 **COUNT III: INFRINGEMENT OF U.S. PATENT NO. 9,195,258**

15 272. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
16 126-42 of this Second Amended Complaint as if fully set forth herein.

17 273. Google and/or users of the Google Wireless Audio System have
18 directly infringed (either literally or under the doctrine of equivalents) and have
19 continued to directly infringe up to the date of expiration of the '258 Patent one or
20 more of the claims of the '258 Patent, in violation of 35 U.S.C. § 271(a), by
21 making, using, offering for sale, and/or selling the Google Wireless Audio System
22 within the United States and/or importing the Google Wireless Audio System into
23 the United States without authority or license.

24 274. As just one non-limiting example, set forth below is an exemplary
25 infringement claim chart for claim 17 of the '258 Patent in connection with the
26 Google Wireless Audio System. This claim chart is based on publicly available
27 information. Sonos reserves the right to modify this claim chart, including, for
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1 example, on the basis of information about the Google Wireless Audio System
 2 that it obtains during discovery.

Claim 17	Google
4 17. A first zone player 5 comprising: 6 7 8 9 10 11 12 13	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a “zone player,” as recited in claim 17. At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, the Google Play Music app, and/or other Chromecast-enabled apps (<i>e.g.</i> , Spotify) (where a computing device installed with at least one of these apps is referred to herein as a “Chromecast-enabled computing device”) comprises a “controller,” as recited in claim 17.
14 a network interface 15 configured to interface 16 the first zone player with at least a local area network (LAN);	Each of the foregoing Google Audio Players includes a network interface configured to interface the Google Audio Player with at least a LAN, such as a Wi-Fi interface. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
17 a device clock 18 configured to generate 19 clock time information for the first zone player;	Each of the foregoing Google Audio Players includes a device clock configured to generate clock time information for the Google Audio Player. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
20 one or more 21 processors; and	Each of the foregoing Google Audio Players includes one or more processors. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
22 a tangible, non- 23 transitory computer- 24 readable memory 25 having instructions stored thereon that, 26 when executed by the one or more 27 processors, cause the 28 first zone player to:	Each of the foregoing Google Audio Players includes a tangible, non-transitory computer-readable memory comprising executable program instructions that enable a Google Audio Player to perform the functions identified below. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.

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Claim 17	Google
<p>receive control information from any one of a plurality of controllers over the LAN via the network interface, wherein the received control information comprises a direction for the first zone player to enter into a synchrony group with at least a second zone player;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player’s one or more processors, cause that Google Audio Player to receive control information from any one of a plurality of Chromecast-enabled computing devices over the LAN via the network interface, where the received control information comprises a direction for the first Google Audio Player to enter into a synchrony group with at least a second Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to receive over a local Wi-Fi network (which is a LAN), from any of a plurality of Chromecast-enabled computing devices, a direction to enter into a group of two or more Google Audio Players that are configured to play back audio in synchrony with one another. <i>See e.g.</i>, Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); Exs. 30, 69, 94, 99, 104, 106.</p>
<p>in response to the direction, enter into the synchrony group with the second zone player,</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player’s one or more processors, cause that Google Audio Player to, in response to the direction, enter into the synchrony group with the second Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, in response to receiving a direction to enter into a group of Google Audio Players, the Google Audio Player functions to enter into the group with the one or more other Google Audio Players. <i>See e.g.</i>, Exs. 29, 30, 69, 94, 99, 104. In such a group, a first Google Audio Player is designated to serve as the “master” of the group</p>

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Claim 17	Google
	(sometimes referred to by Google as the “leader” of the group), and any other Google Audio Player in the group is designated to serve as a “slave” of the group.
<p>wherein in the synchrony group, the first and second zone players are configured to playback audio in synchrony based at least in part on (i) audio content, (ii) playback timing information associated with the audio content, wherein the playback timing information is generated by one of the first or second zone players, and (iii) clock time information for the one of the first or second zone players, and wherein the generated playback timing information and the clock time information are transmitted from the one of the first or second zone players to the other of the first or second zone players, wherein the first and second zone players remain independently clocked while playing back audio in synchrony; and</p>	<p>Once grouped, the first and second Google Audio Players are configured to play back audio in synchrony based at least in part on (i) audio content, (ii) playback timing information associated with the audio content that is generated by the first Google Audio Player that is designated to serve as the “master” of the group, and (iii) clock time information for the first Google Audio Player, where the generated playback timing information and the clock time information are transmitted from the first Google Audio Player to the second Google Audio Player that is designated to serve as a “slave” of the group, and where the Google Audio Players in the group remain independently clocked while playing back audio in synchrony.</p> <p>For instance, Google states that once its Google Audio Players have been grouped, those audio players are configured to play audio in synchrony. <i>See, e.g.</i>, Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home.”); <i>see also, e.g.</i>, Exs. 69, 99, 106.</p> <p>Further, while in a group, a first Google Audio Player that is designated to serve as the “master”/“leader” of the group receives audio content from an audio source (<i>e.g.</i>, an Internet-based audio source), and then the first Google Audio Player and a second Google Audio Player that is designated to serve as a “slave” of the group are each configured play back audio in synchrony based on the audio content, playback timing information associated with the audio content and generated by the first Google Audio Player, and clock time information for the first Google Audio Player, all of which is sent from the first Google Audio Player to the second Google Audio Player via data packets –</p>

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Claim 17	Google
	including but not limited to 62-byte UDP packets, 476-byte UDP packets, and/or encrypted TCP packets sent via port 10001. Further yet, while playing back audio in synchrony, each of the first and second Google Audio Players in the group continues to operate in accordance with its own respective clock.
transmit status information to at least one of the plurality of controllers over the LAN via the network interface, wherein the status information comprises an indication of a status of the synchrony group.	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's one or more processors, cause that Google Audio Player to transmit status information to at least one of the plurality of Chromecast-enabled computing devices over the LAN via the network interface, where the status information comprises an indication of a status of the synchrony group.</p> <p>For instance, while in a group, each Google Audio Player in the group (including the Google Audio Player that is designated to serve as the "master" of the group) functions to send status information to any Chromecast-enabled computing device on the same local Wi-Fi network as the Google Audio Players in the group (<i>e.g.</i>, via MDNS packets) that provides an indication of a status of the group, including but not limited to status information that provides an identification of a name of the group, an identification of an "elected leader" of the group, and/or an identification of the group members. <i>See also, e.g.</i>, Ex. 100 ("GCKMultizoneStatus Class" providing "[t]he status of a multizone group" including "[t]he member devices of the multizone group.").</p>

275. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe up to the date of expiration of the '258 Patent one or more of the claims of the '258 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '258 Patent. In particular, (a) Google had actual knowledge of the '258 Patent or was willfully blind to its existence prior to (at

1 least as early as September 2016), and no later than, the filing of the Original
2 Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or
3 encourages users of the Google Wireless Audio System to directly infringe one or
4 more claims of the '258 Patent by promoting, advertising, and instructing
5 customers and potential customers about the Google Wireless Audio System and
6 uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google
7 knows (or should know) that its actions will induce users of the Google Wireless
8 Audio System to directly infringe one or more claims the '258 Patent, and
9 (d) users of the Google Wireless Audio System directly infringe one or more
10 claims of the '258 Patent. For instance, at a minimum, Google has supplied and
11 continues to supply Google Audio Players to customers while knowing that use of
12 these products will infringe one or more claims of the '258 Patent and that
13 Google's customers then directly infringe one or more claims of the '258 Patent
14 by using these Google Audio Players in accordance with Google's product
15 literature. *See, e.g., id.*

16 276. Additionally and/or alternatively, Google has indirectly infringed and
17 continued to indirectly infringe up to the date of expiration of the '258 Patent one
18 or more of the claims of the '258 Patent, in violation of 35 U.S.C. § 271(c), by
19 offering to sell or selling within the United States, and/or importing into the
20 United States, components in connection with the Google Wireless Audio System
21 that contribute to the direct infringement of the '258 Patent by users of the Google
22 Wireless Audio System. In particular, (a) Google had actual knowledge of
23 the '258 Patent or was willfully blind to its existence prior to (at least as early as
24 October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-
25 71 above), (b) Google offers for sale, sells, and/or imports, in connection with the
26 Google Wireless Audio System, one or more material components of the
27 invention of the '258 Patent that are not staple articles of commerce suitable for
28 substantial noninfringing use, (c) Google knows (or should know) that such

1 component(s) were especially made or especially adapted for use in an
2 infringement of the '258 Patent, and (d) users of devices that comprise such
3 material component(s) directly infringe one or more claims of the '258 Patent.
4 For instance, at a minimum, Google offers for sale, sells, and/or imports software
5 updates for Google Audio Players that meet one or more claims of the '258
6 Patent. *See, e.g.*, Ex. 20, 29, 60, 61, 85. These software updates are material
7 components of the Google Audio Players that meet the one or more claims of
8 the '258 Patent. Further, Google especially made and/or adapted these software
9 updates for use in the Google Audio Players that meet the one or more claims of
10 the '258 Patent, and these software updates are not staple articles of commerce
11 suitable for substantial noninfringing use. Google's customers then directly
12 infringe the one or more claims of the '258 Patent by installing and using software
13 updates on the Google Audio Players.

14 277. Google's infringement of the '258 Patent is also willful because
15 Google (a) had actual knowledge of the '258 Patent or was willfully blind to its
16 existence prior to (at least as early as October 2016), and no later than, the filing
17 of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
18 aforementioned activity despite an objectively high likelihood that Google's
19 actions constituted infringement of the '258 Patent, and (c) this
20 objectively-defined risk was either known or so obvious that it should have been
21 known to Google.

22 278. Additional allegations regarding Google's pre-suit knowledge of
23 the '258 Patent and willful infringement will likely have evidentiary support after
24 a reasonable opportunity for discovery.

25 279. Sonos is in compliance with any applicable marking and/or notice
26 provisions of 35 U.S.C. § 287 with respect to the '258 Patent.

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1 280. Sonos is entitled to recover from Google all damages that Sonos has
2 sustained as a result of Google’s infringement of the ’258 Patent, including,
3 without limitation, a reasonable royalty and lost profits.

4 281. Google’s infringement of the ’258 Patent was and continued to be
5 willful and deliberate, entitling Sonos to enhanced damages.

6 282. Google’s infringement of the ’258 Patent is exceptional and entitles
7 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
8 U.S.C. § 285.

9 **COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 9,219,959**

10 283. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
11 143-161 of this Second Amended Complaint as if fully set forth herein.

12 284. Google and/or users of the Google Wireless Audio System have
13 directly infringed (either literally or under the doctrine of equivalents) and
14 continued to directly infringe one or more of the claims of the ’959 Patent up to
15 the date that Google pushed a firmware update removing the functionality
16 identified below, in violation of 35 U.S.C. § 271(a), by making, using, offering
17 for sale, and/or selling the Google Wireless Audio System within the United
18 States and/or importing the Google Wireless Audio System into the United States
19 without authority or license.

20 285. As just one non-limiting example, set forth below is an infringement
21 claim chart of exemplary claim 10 of the ’959 Patent in connection with the
22 Google Wireless Audio System. This claim chart is based on publicly available
23 information. Sonos reserves the right to modify this claim chart, including, for
24 example, on the basis of information about the Google Wireless Audio System
25 that it obtains during discovery.

Claim 10	Google
10. A playback device configured to	At least each Google Home Max and Nest Audio comprises a “playback device configured to output audio

1 Claim 10	Google
2 output audio in a 3 multi-channel 4 listening 5 environment, the 6 playback device 7 comprising:	in a multi-channel listening environment,” as recited in claim 10. At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with at least the Google Home app is referred to herein as a “Chromecast-enabled computing device”) comprises a “controller,” as recited in claim 10.
8 a network interface 9 configured to 10 receive audio data 11 over a network;	Each of the foregoing Google Audio Players includes a network interface configured to receive audio data over a network, such as a Wi-Fi interface. <i>See, e.g.,</i> Ex. 96 (“802.11b/g/n/ac (2.4GHz/5Ghz) Wi-Fi for high-performance streaming”); Ex. 68 (same); Ex. 112.
12 a plurality of 13 speaker drivers 14 configured to output 15 audio based on the 16 audio data;	Each of the foregoing Google Audio Players includes a plurality of speaker drivers configured to output audio based on the audio data. <i>See, e.g.,</i> Ex. 68 (“Two 4.5 in (114 mm) high-excursion (+/- 11 mm) dual voice-coil woofers . . . Two 0.7 in (18 mm) custom tweeters”); Ex. 96 (same); Ex. 112.
17 one or more 18 processors; and	Each of the foregoing Google Audio Players includes one or more processors. <i>See, e.g.,</i> Ex. 68 (“Processor[:] 1.5GHz 64-bit quad-core ARM® Cortex™ A53”); Ex. 96 (same); Ex. 112.
19 tangible, non- 20 transitory, computer 21 readable memory 22 comprising 23 instructions encoded 24 therein, wherein the 25 instructions, when 26 executed by the one 27 or more processors, 28 cause the playback device to	Each of the foregoing Google Audio Players includes tangible, non-transitory, computer-readable memory comprising executable program instructions that enable the Google Audio Player to perform the functions identified below. <i>See, e.g.,</i> Exs. 68, 96, 112.
(i) receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player’s one or more processors, cause the Google Audio Player to receive a signal from a controller over a network, where the signal comprises an instruction for the Google Audio Player to pair with one or more other Google Audio Players.

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Claim 10	Google
<p>pair with one or more playback devices,</p>	<p>For instance, each of the foregoing Google Audio Players is programmed with the capability to receive, from a Chromecast-enabled computing device over a Wi-Fi network that the Google Audio Player is connected to, an instruction to begin operating as part of a “speaker pair” configuration for “stereo sound” (also referred to by Google as a “stereo pairing”) with another Google Audio Player of the same model as the Google Audio Player, which is a configuration involving two or more Google Audio Players having different playback roles. <i>See, e.g.</i>, Ex. 69 (“Pair Google Home Max speakers[:] You can pair two Google Home Max speakers (devices) for stereo sound and an immersive experience for music and casting.... Step 1. Place speakers in the best position in your room Step 2. Set up both Google Home Max speakers Step 3. Pair the speakers Step 4. Control the speaker pair”); Ex. 68 (“Wireless stereo pairing”); Ex. 132 (“For an immersive music and media experience, you can connect 2 speakers to set up stereo sound. Stereo sound pairing is available on Google Home, Google Nest Mini (2nd gen), Google Home Mini (1st gen), Google Home Max, and Google Nest Audio.”).</p> <p>In a “speaker pair” configuration, one Google Audio Player has the role of playing back the left audio channel, and the other Google Audio Player has the role of playing back the right audio channel. <i>See, e.g.</i>, Ex. 69 (“Tap Left or Right to match the location of the blinking speaker”) (emphasis in original).</p> <p>For example, at the time that a user inputs a request to create a given “speaker pair” via a Chromecast-enabled computing device, the Chromecast-enabled computing device transmits control packets to at least a first Google Audio Player in the given “speaker pair.” On information and belief, these control packets include an instruction for the first Google Audio Player to begin operating as part of the given “speaker pair” with at least a second Google Audio Player of the same model as the first Google Audio</p>

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Claim 10	Google
	<p>Player. <i>See, e.g.</i>, Ex. 69 (“When two speakers are paired, your Assistant lives and responds on the left speaker. To use your Assistant on the right speaker, unpair the speakers using the steps below. Then you can use your Assistant on both speakers.”) (emphasis in original); Ex. 132.</p>
<p>(ii) process the audio data before the playback device outputs audio from the plurality of speaker drivers,</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player’s one or more processors, cause the Google Audio Player to process the audio data before the Google Audio Player outputs audio from the plurality of speaker drivers.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to perform various types of audio processing on received audio data before outputting audio based on that audio data, examples of which may include digital-to-analog conversion, decompression, decryption, etc. <i>See, e.g.</i>, Ex. 96 (listing various “[s]upported [a]udio [f]ormats”); Ex. 107.</p>
<p>(iii) determine that a type of pairing of the playback device comprises one of at least a first type of pairing or a second type of pairing[.]</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player’s one or more processors, cause the Google Audio Player to determine that a type of pairing of the Google Audio Player comprises one of at least a first type of pairing or a second type of pairing.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to operate in accordance with a particular type of pairing, such as a “no pairing” type of pairing or a “speaker pair” type of pairing. <i>See, e.g.</i>, Ex. 69 (“Pair the speakers Unpair speakers”); Ex. 68 (“Wireless stereo pairing”); Ex. 132.</p> <p>Further, each of the foregoing Google Audio Players is programmed with the capability to determine its type of pairing at various times, including but not limited to when the Google Audio Player receives an instruction to begin or stop operating as part of a “speaker pair” with another</p>

Claim 10	Google
	Google Audio Player, when the Google Audio Player is performing certain functions in accordance with its current “pairing type,” and/or when the Google Audio Player powers up. <i>See, e.g., id.</i>
(iv) configure the playback device to perform a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the first type of pairing, and	Each of the foregoing Google Audio Players comprises program instructions that, when executed by a Google Audio Player’s one or more processors, cause the Google Audio Player to configure itself to (i) perform a first equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the first type of pairing and (ii) perform a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the second type of pairing.
(v) configure the playback device to perform a second equalization of the audio data before outputting audio based on the audio data from the plurality of speaker drivers when the type of pairing is determined to comprise the second type of pairing.	For instance, each of the foregoing Google Audio Players is programmed with the capability to change its equalization when its type of pairing changes from one of the aforementioned types of pairing to another of the aforementioned types of pairing. <i>See, e.g., Ex. 69</i> (“Pair the speakers Unpair speakers”); <i>Ex. 132.</i>
	As one example to illustrate, as discussed above, each of the foregoing Google Audio Players is programmed with the capability to operate in accordance with either a “no pairing” type of pairing or a “speaker pair” type of pairing. When operating in accordance with a “no pairing” type of pairing, a Google Audio Player is configured to perform a first equalization of audio data that is specific to the “no pairing” type of pairing, which at least involves using a first set of bass and/or treble settings as specified in the Google Audio Player’s “Equalizer” setting tab of the Google Home app. <i>See, e.g., Ex. 133.</i> On the other hand, when operating in accordance with a “speaker pair” type of pairing, a Google Audio Player designated a “follower” of the “speaker pair” is configured to perform a second equalization of audio data that is specific to the “speaker pair” type of pairing, which at

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Claim 10	Google
	least involves using a second set of bass and/or treble settings that match those settings of the Google Audio Player designated the “leader” of the “speaker pair.” <i>See, e.g., Ex. 134, p.101-103.</i>

286. Additionally and/or alternatively, Google has indirectly infringed and continued to indirectly infringe one or more of the claims of the '959 Patent up to the date that Google pushed a firmware update removing the functionality identified below, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '959 Patent. In particular, (a) Google had actual knowledge of the '959 Patent or was willfully blind to its existence prior to (at least as early as October 2016), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally caused, urged, or encouraged users of the Google Wireless Audio System to directly infringe one or more claims of the '959 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 67-70, Ex. 132), (c) Google knew (or should have known) that its actions would induce users of the Google Wireless Audio System to directly infringe one or more claims the '959 Patent, and (d) users of the Google Wireless Audio System directly infringed one or more claims of the '959 Patent. For instance, at a minimum, Google has supplied the Google Home Max and Nest Audio to customers while knowing that use of these products would infringe one or more claims of the '959 Patent and that Google’s customers then directly infringed one or more claims of the '959 Patent by using these Google Audio Players in accordance with Google’s product literature. *See, e.g., id.*

1 287. Additionally and/or alternatively, Google has indirectly infringed and
2 continued to indirectly infringe one or more of the claims of the '959 Patent up to
3 the date that Google pushed a firmware update removing the functionality
4 identified below, in violation of 35 U.S.C. § 271(c), by offering to sell or selling
5 within the United States, and/or importing into the United States, components in
6 connection with the Google Wireless Audio System that contributed to the direct
7 infringement of the '959 Patent by users of the Google Wireless Audio System.
8 In particular, (a) Google had actual knowledge of the '959 Patent or was willfully
9 blind to its existence prior to (at least as early as October 2016), and no later than,
10 the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google offered for
11 sale, sold, and/or imported, in connection with the Google Wireless Audio
12 System, one or more material components of the invention of the '959 Patent that
13 were not staple articles of commerce suitable for substantial noninfringing use, (c)
14 Google knew (or should have known) that such component(s) were especially
15 made or especially adapted for use in an infringement of the '959 Patent, and
16 (d) users of devices that comprise such material component(s) directly infringed
17 one or more claims of the '959 Patent. For instance, at a minimum, Google
18 offered for sale, sold, and/or imported software updates for the Google Home
19 Max and Nest Audio that met one or more claims of the '959 Patent. *See, e.g.*,
20 Exs. 67-70, 85. These software updates were material components of these
21 Google Audio Players that met the one or more claims of the '959 Patent.
22 Further, Google especially made and/or adapted these software updates for use in
23 the Google Audio Players that met the one or more claims of the '959 Patent, and
24 these software updates were not staple articles of commerce suitable for
25 substantial noninfringing use. Google's customers then directly infringed the one
26 or more claims of the '959 Patent by installing and using software updates on the
27 Google Audio Players.

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1 288. Google's infringement of the '959 Patent was also willful because
2 Google (a) had actual knowledge of the '959 Patent or was willfully blind to its
3 existence prior to (at least as early as October 2016), and no later than, the filing
4 of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
5 aforementioned activity despite an objectively high likelihood that Google's
6 actions constituted infringement of the '959 Patent, and (c) this
7 objectively-defined risk was either known or so obvious that it should have been
8 known to Google.

9 289. Additional allegations regarding Google's pre-suit knowledge of
10 the '959 Patent and willful infringement will likely have evidentiary support after
11 a reasonable opportunity for discovery.

12 290. Sonos is in compliance with any applicable marking and/or notice
13 provisions of 35 U.S.C. § 287 with respect to the '959 Patent.

14 291. Sonos is entitled to recover from Google all damages that Sonos has
15 sustained as a result of Google's infringement of the '959 Patent, including,
16 without limitation, a reasonable royalty and lost profits.

17 292. Google's infringement of the '959 Patent was and continued to be
18 willful and deliberate, entitling Sonos to enhanced damages.

19 293. Google's infringement of the '959 Patent was exceptional and
20 entitles Sonos to attorneys' fees and costs incurred in prosecuting this action
21 under 35 U.S.C. § 285.

22 **COUNT V: INFRINGEMENT OF U.S. PATENT NO. 10,031,715**

23 294. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
24 162-73 of this Second Amended Complaint as if fully set forth herein.

25 295. Google and/or users of the Google Wireless Audio System have
26 directly infringed (either literally or under the doctrine of equivalents) and
27 continue to directly infringe one or more of the claims of the '715 Patent, in
28 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling

1 the Google Wireless Audio System within the United States and/or importing the
 2 Google Wireless Audio System into the United States without authority or
 3 license.

4 296. As just one non-limiting example, set forth below is an exemplary
 5 infringement claim chart for claim 7 of the '715 Patent in connection with the
 6 Google Wireless Audio System. This claim chart is based on publicly available
 7 information. Sonos reserves the right to modify this claim chart, including, for
 8 example, on the basis of information about the Google Wireless Audio System
 9 that it obtains during discovery.

Claim 7	Google
7. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a “zone player,” as recited in claim 7. At least each smartphone, tablet, and computer installed with the Google Home app, the YouTube Music app, the Google Play Music app, and/or other Chromecast-enabled apps (<i>e.g.</i> , Spotify) (where a computing device installed with at least one of these apps is referred to herein as a “Chromecast-enabled computing device”) comprises a “controller device,” as recited in claim 7.
one or more processors;	Each of the foregoing Google Audio Players includes one or more processors. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
at least one network interface; and	Each of the foregoing Google Audio Players includes at least one network interface, such as a Wi-Fi interface. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
tangible, non-transitory computer-readable media having instructions encoded therein, wherein the instructions, when	Each of the foregoing Google Audio Players includes tangible, non-transitory computer-readable media having executable instructions encoded therein that enable a Google Audio Player to perform the functions identified below. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.

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Claim 7	Google
<p>executed by the first zone player, cause the first zone player to perform functions comprising:</p>	
<p>performing a master device role for a synchrony group comprising the first zone player and a second zone player, wherein in the master device role, the first zone player is configured to control synchronous playback of audio information by both the first zone player and the second zone player in response to playback commands received from a controller device via a network interface of the first zone player;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to perform a master device role for a synchrony group comprising the first Google Audio Player and a second Google Audio Player, where in the master device role, the first Google Audio Player is configured to control synchronous playback of audio information by both the first Google Audio Player and the second Google Audio Player in response to playback commands received from a Chromecast-enabled computing device via a network interface of the first Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to enter into a group of two or more Google Audio Players that are configured to play back audio in synchrony. <i>See, e.g.</i>, Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); Exs. 30, 69, 94, 99, 104, 106.</p> <p>In such a group, one of the Google Audio Players will be designated to serve as the “master” of the group (sometimes referred to by Google as the “leader” of the group) and every other Google Audio Player will be designated to serve as a “slave” of the group (sometimes referred to by Google as a “follower” of the group). <i>See, e.g.</i>, Ex. 122, 1277:10-13, 1278:1-6.</p>

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Claim 7	Google
	<p>Further, each of the foregoing Google Audio Players is programmed such that, while operating as a “master” of a group, the Google Audio Player is configured to control synchronous audio playback by both the “master” Google Audio Player and each “slave” Google Audio Player in the group in response to playback commands received from a Chromecast-enabled computing device on the same LAN as the Google Audio Player. <i>See, e.g.</i>, Ex. 122, 1300:6-15 (“[S]o in order to play media onto a group, one of the devices in the group has to be the leader. That will be the device that actually will launch the application that you would like to listen to, and that is what downloads the media from the internet and then distributes the audio to the rest of the devices.”); <i>id.</i>, 1259:20-1260:5, 1268:23-1269:8, 1315:5-10.</p>
<p>while performing the master device role, evaluating one or more operational performance metrics of the one or more processors or the at least one network interface indicating potential degradation in performance of synchronous playback of audio information by both the first and second zone player, and based on the evaluation, determining that the second zone player should perform the master device role for the synchrony group;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, while performing a master device role, evaluate one or more operational performance metrics of the one or more processors or the at least one network interface indicating potential degradation in performance of synchronous playback of audio information by both the first and second Google Audio Players, and based on the evaluation, determine that the second Google Audio Player should perform the master device role for the synchrony group instead of the first Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, while operating as a “master”/“leader” of a group, the Google Audio Player is configured to (i) evaluate one or more metrics related to the performance of the synchronous audio playback by the Google Audio Players in the group, including but not limited to one or more metrics related to the wireless signal quality detected by the Google Audio Players in the group (e.g., as reflected in “SRV (Server Selection)” fields contained within MDNS packets</p>

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Claim 7	Google
	<p>exchanged between the Google Audio Players in the group), and (ii) based on the evaluation, determine that a different Google Audio Player in the group should take over as the “master” of the group. <i>See also</i> RFC 2782.</p> <p>Public testimony from Google’s engineers evidences this functionality. For example, as explained by Google’s engineers, Google Audio Players “continuously” engage in a “leader election process” in which each player (i) broadcasts a respective “leader quality number” that “tells the other [players] in the network how good that [player] would be as a leader for the group,” where the “quality is in part based on the Wi-Fi signal strength of each device,” and (ii) evaluates its own leader quality relative to the respective leader quality of each other player. <i>See</i> Ex. 122, 1247:14-24, 1248:3-1249:1, 1249:20-1250:9, 1251:3-1252:9, 1253:4-23, 1300:16-1301:4. In this way, “over time,” “the [player] that’s chosen as the leader... may change at any time.” <i>Id.</i>, 1253:19-23; <i>see also id.</i>, 1247:2-7, 1251:3-1252:9.</p>
<p>in response to determining that the second zone player should perform the master device role for the synchrony group, initiating migration of the master device role from the first zone player to the second zone player; and</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, in response to a determination that a second Google Audio Player should perform the master device role for the synchrony group instead of the first Google Audio Player, initiate migration of the master device role from the first Google Audio Player to the second Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, after determining that one of the “slave” Google Audio Players in the group should take over the Google Audio Player’s role as the “master”/“leader” of a group, the “master” Google Audio Player initiates migrating the “master” role to the one “slave” Google Audio Player.</p>

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Claim 7	Google
	<p>Public documentation from Google evidences this functionality. For example, one of Google’s patent publications related to the Google Audio Players explains that, when the “leader” role is to be migrated, the current “leader” performs a “deregistration” process so that another player can take over the “leader” role. <i>See, e.g.</i>, US20180262792, ¶52; <i>see also id.</i>, ¶51, 64. As another example, a technical document (TX6454) Google published during a jury trial (Ex. 122, 1238:10-24) states “[i]f a new, better group leader comes online, the old group leader should send a goodbye packet to indicate to the SDK that it is no longer the leader.” Ex. 127, GOOG-SONOSWDTX-00048968.</p>
<p>after migration of the master device role from the first zone player to the second zone player, ceasing to perform the master device role for the synchrony group, and playing back audio information in synchrony with the second zone player while the second zone player is performing the master device role for the synchrony group.</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, after migration of the master device role from the first Google Audio Player to a second Google Audio Player, cease to perform the master device role for the synchrony group and play back audio information in synchrony with the second Google Audio Player while the second Google Audio Player is performing the master device role for the synchrony group.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, after migration of the “master”/“leader” role of a group, the former “master” Google Audio Player begins operating as a “slave”/“follower” of the group. In this respect, while operating as a “slave” of the group, the Google Audio Player is configured to play back audio in synchrony with the new “master” Google Audio Player in the group.</p> <p>Public testimony from Google’s engineers evidences this functionality. For example, one of Google’s engineers described scenarios in which the “leader” role of a group was migrated to a “follower” of the group and thereafter, the former “leader” transitioned to</p>

Claim 7	Google
	operate as a “follower” of the group. <i>See, e.g.</i> , Ex. 122, 1247:13-1251:24.

297. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ’715 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the ’715 Patent. In particular, (a) Google had actual knowledge of the ’715 Patent or was willfully blind to its existence prior to (at least as early as February 2019), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the ’715 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the ’715 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the ’715 Patent. For instance, at a minimum, Google has supplied and continues to supply Google Audio Players to customers while knowing that use of these products will infringe one or more claims of the ’715 Patent and that Google’s customers then directly infringe one or more claims of the ’715 Patent by using these Google Audio Players in accordance with Google’s product literature. *See, e.g., id.*

298. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ’715 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 Google Wireless Audio System that contribute to the direct infringement of

1 the '715 Patent by users of the Google Wireless Audio System. In particular, (a)
2 Google had actual knowledge of the '715 Patent or was willfully blind to its
3 existence prior to (at least as early as February 2019), and no later than, the filing
4 of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale,
5 sells, and/or imports, in connection with the Google Wireless Audio System, one
6 or more material components of the invention of the '715 Patent that are not
7 staple articles of commerce suitable for substantial noninfringing use, (c) Google
8 knows (or should know) that such component(s) were especially made or
9 especially adapted for use in an infringement of the '715 Patent, and (d) users of
10 devices that comprise such material component(s) directly infringe one or more
11 claims of the '715 Patent. For instance, at a minimum, Google offers for sale,
12 sells, and/or imports software updates for Google Audio Players that meet one or
13 more claims of the '715 Patent. *See, e.g.*, Ex. 20, 29, 60, 61, 85. These software
14 updates are material components of the Google Audio Players that meet the one or
15 more claims of the '715 Patent. Further, Google especially made and/or adapted
16 these software updates for use in the Google Audio Players that meet the one or
17 more claims of the '715 Patent, and these software updates are not staple articles
18 of commerce suitable for substantial noninfringing use. Google's customers then
19 directly infringe the one or more claims of the '715 Patent by installing and using
20 software updates on the Google Audio Players.

21 299. Google's infringement of the '715 Patent is also willful because
22 Google (a) had actual knowledge of the '715 Patent or was willfully blind to its
23 existence prior to (at least as early as February 2019), and no later than, the filing
24 of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
25 aforementioned activity despite an objectively high likelihood that Google's
26 actions constituted infringement of the '715 Patent, and (c) this
27 objectively-defined risk was either known or so obvious that it should have been
28 known to Google.

1 300. Additional allegations regarding Google's pre-suit knowledge of
2 the '715 Patent and willful infringement will likely have evidentiary support after
3 a reasonable opportunity for discovery.

4 301. Sonos is in compliance with any applicable marking and/or notice
5 provisions of 35 U.S.C. § 287 with respect to the '715 Patent.

6 302. Sonos is entitled to recover from Google all damages that Sonos has
7 sustained as a result of Google's infringement of the '715 Patent, including,
8 without limitation, a reasonable royalty and lost profits.

9 303. Google's infringement of the '715 Patent was and continues to be
10 willful and deliberate, entitling Sonos to enhanced damages.

11 304. Google's infringement of the '715 Patent is exceptional and entitles
12 Sonos to attorneys' fees and costs incurred in prosecuting this action under 35
13 U.S.C. § 285.

14 305. Google's infringement of the '715 Patent has caused irreparable
15 harm (including the loss of market share) to Sonos and will continue to do so
16 unless enjoined by this Court.

17 **COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 10,209,953**

18 306. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
19 174-86 of this Second Amended Complaint as if fully set forth herein.

20 307. Google and/or users of the Google Wireless Audio System have
21 directly infringed (either literally or under the doctrine of equivalents) and
22 continued to directly infringe up to the date of expiration of the '953 Patent one or
23 more of the claims of the '953 Patent, in violation of 35 U.S.C. § 271(a), by
24 making, using, offering for sale, and/or selling the Google Wireless Audio System
25 within the United States and/or importing the Google Wireless Audio System into
26 the United States without authority or license.

27 308. As just one non-limiting example, set forth below is an exemplary
28 infringement claim chart for claim 7 of the '953 Patent in connection with the

1 Google Wireless Audio System. This claim chart is based on publicly available
 2 information. Sonos reserves the right to modify this claim chart, including, for
 3 example, on the basis of information about the Google Wireless Audio System
 4 that it obtains during discovery.

Claim 7	Google
7. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a “zone player,” as recited in claim 7. These Google Audio Players are controlled by smartphones, tablets, and computers installed with the Google Home app, the Google Play Music app, the YouTube Music app, and/or other Chromecast-enabled apps (e.g., Spotify) (where a computing device installed with at least one of these apps is referred to herein as a “Chromecast-enabled computing device”).
a network interface that is configured to provide an interconnection with at least one data network;	Each of the foregoing Google Audio Players includes a network interface that is configured to provide an interconnection with at least one data network, such as a Wi-Fi interface. <i>See, e.g.,</i> Exs. 68, 95-98, 111-113.
a clock that is configured to provide a clock time of the first zone player;	Each of the foregoing Google Audio Players includes a clock that is configured to provide a clock time of the Google Audio Player. <i>See, e.g.,</i> Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. <i>See, e.g.,</i> Exs. 68, 95-98, 111-113.
a tangible, non-transitory computer-readable medium; and program instructions stored on the tangible, non-transitory computer-	Each of the foregoing Google Audio Players includes a tangible, non-transitory computer-readable medium comprising executable program instructions that enable a Google Audio Player to perform the functions identified below. <i>See, e.g.,</i> Exs. 68, 85, 95-98, 111-113.

Claim 7	Google
<p>1 readable medium that 2 are executable by the 3 at least one processor 4 to cause the first zone 5 player to perform 6 functions comprising:</p>	
<p>6 receiving a request to 7 enter into a 8 synchrony group with 9 at least a second zone 10 player that is 11 communicatively 12 coupled with the first 13 zone player over a 14 local area network 15 (LAN);</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to receive a request to enter into a synchrony group with at least a second Google Audio Player that is communicatively coupled with the first Google Audio Player over a LAN.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to receive over a local Wi-Fi network (which is a LAN) a request to enter into a group of two or more Google Audio Players that are configured to play back audio in synchrony with one another, where such a direction is from a Chromecast-enabled computing device on the local Wi-Fi network or a Google voice-server that is communicatively coupled to the local Wi-Fi network, among other possibilities. <i>See e.g.</i>, Ex. 29 ("Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream."); Exs. 30, 69, 94, 99, 104, 106.</p>
<p>22 in response to 23 receiving the request 24 to enter into the 25 synchrony group, 26 entering into the 27 synchrony group with 28 the second zone player, wherein the first zone player is</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player's at least one processor, cause that Google Audio Player to, in response to receiving the request to enter into the synchrony group, enter into the synchrony group with the second Google Audio Player, where the first Google Audio Player is selected to begin operating as a slave of the synchrony group and the second Google Audio Player is selected to begin</p>

Claim 7	Google
<p>1 selected to begin 2 operating as a slave 3 of the synchrony 4 group and the second 5 zone player is 6 selected to begin 7 operating as a master 8 of the synchrony 9 group, and wherein 10 the clock time of the 11 first zone player 12 differs from a clock 13 time of the second 14 zone player;</p>	<p>operating as a master of the synchrony group, and where the clock time of the first Google Audio Player differs from a clock time of the second Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, in response to receiving a request to enter into a group of Google Audio Players, the Google Audio Player functions to enter into the group with the one or more other Google Audio Players. <i>See e.g.</i>, Exs. 29, 30, 69, 94, 99, 104, 106. In such a group, a first Google Audio Player is designated to operate as a “slave” of the group, and a second Google Audio Player is designated to operate as the “master” of the group (sometimes referred to by Google as the “leader” of the group). Moreover, the respective clock times of the first and second Google Audio Players differ.</p>
<p>15 after beginning to 16 operate as the slave 17 of the synchrony 18 group:</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player’s at least one processor, cause that Google Audio Player to perform the following functions after beginning to operate as the slave of the synchrony group.</p>
<p>19 receiving, from the 20 second zone player 21 over the LAN, clock 22 timing information 23 that comprises at 24 least one reading of 25 the clock time of the 26 second zone player; 27 based on the received 28 clock timing information, determining a differential between the clock time of the first zone player and</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player’s at least one processor, cause that Google Audio Player to, after beginning to operate as the slave of the synchrony group, (i) receive, from the second Google Audio Player over the LAN, clock timing information that comprises at least one reading of the clock time of the second Google Audio Player and (ii) based on the received clock timing information, determine a differential between the clock time of the first Google Audio Player and the clock time of the second Google Audio Player.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, after beginning to operate as a “slave” of a group, the Google Audio Player</p>

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Claim 7	Google
the clock time of the second zone player;	is configured to (i) receive, from the “master” Google Audio Player of the group, clock timing information that comprises at least one reading of the clock time of the “master” player via data packets, such as 62-byte UDP packets, and (ii) based on the received clock timing information, determine a differential between its own clock time and the clock time of the “master” Google Audio Player.
receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player’s at least one processor, cause that Google Audio Player to, after beginning to operate as the slave of the synchrony group, receive, from the second Google Audio Player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second Google Audio Player, at which the first and second Google Audio Players are to initiate synchronous playback of the audio information for the first audio track.</p> <p>For instance, each of the foregoing Google Audio Players is programmed such that, after beginning to operate as a “slave” of a group, the Google Audio Player is configured to receive, from the “master” Google Audio Player of the group, audio information for at least a first audio track and associated playback timing information that includes an indicator of a first future time, relative to the clock time of the “master” Google Audio Player, at which the Google Audio Players of the group are to initiate synchronous playback of the audio information for the first audio track, where such information is received via various types of data packets sent by the “master” Google Audio Player – including but not limited to 476-byte UDP packets and/or encrypted TCP packets sent via port 10001. <i>See also, e.g., Ex. 29; Ex. 69, 99, 106.</i></p>

1	Claim 7	Google
2	updating the first	Each of the foregoing Google Audio Players comprises
3	future time to account	program instructions that, when executed by a first
4	for the determined	Google Audio Player's at least one processor, cause that
5	differential between	Google Audio Player to, after beginning to operate as the
6	the clock time of the	slave of the synchrony group, (i) update the first future
7	first zone player and	time to account for the determined differential between
8	the clock time of the	the clock time of the first Google Audio Player and the
9	second zone player;	clock time of the second Google Audio Player and (ii)
10	and	when the clock time of the first Google Audio Player
11	when the clock time	reaches the updated first future time, initiate synchronous
12	of the first zone	playback of the received audio information with the
13	player reaches the	second Google Audio Player.
14	updated first future	For instance, each of the foregoing Google Audio
15	time, initiating	Players is programmed such that, after beginning to
16	synchronous	operate as a "slave" of a group, the Google Audio Player
17	playback of the	is configured to (i) update a first future time of playback
18	received audio	timing information received from the "master" Google
19	information with the	Audio Player of the group to account for a determined
20	second zone player.	differential between the "slave" Google Audio Player's
21		own clock time and clock time of the "master" Google
22		Audio Player and (ii) when the clock time of the "slave"
23		Google Audio Player reaches the updated first future
24		time, initiate synchronous playback of the received audio
25		information with the "master" Google Audio Player.
26		<i>See, e.g., Ex. 29; Ex. 69, 99, 106.</i>
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20 309. Additionally and/or alternatively, Google has indirectly infringed and
21 continued to indirectly infringe up to the date of expiration of the '953 Patent one
22 or more of the claims of the '953 Patent, in violation of 35 U.S.C. § 271(b), by
23 actively inducing users of the Google Wireless Audio System to directly infringe
24 the one or more claims of the '953 Patent. In particular, (a) Google had actual
25 knowledge of the '953 Patent or was willfully blind to its existence prior to (at
26 least as early as February 2019), and no later than, the filing of the Original
27 Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or
28 encourages users of the Google Wireless Audio System to directly infringe one or

1 more claims of the '953 Patent by promoting, advertising, and instructing
2 customers and potential customers about the Google Wireless Audio System and
3 uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google
4 knows (or should know) that its actions will induce users of the Google Wireless
5 Audio System to directly infringe one or more claims the '953 Patent, and
6 (d) users of the Google Wireless Audio System directly infringe one or more
7 claims of the '953 Patent. For instance, at a minimum, Google has supplied and
8 continues to supply Google Audio Players to customers while knowing that use of
9 these products will infringe one or more claims of the '953 Patent, and that
10 Google's customers then directly infringe one or more claims of the '953 Patent
11 by using these Google Audio Players in accordance with Google's product
12 literature. *See, e.g., id.*

13 310. Additionally and/or alternatively, Google has indirectly infringed and
14 continued to indirectly infringe up to the date of expiration of the '953 Patent one
15 or more of the claims of the '953 Patent, in violation of 35 U.S.C. § 271(c), by
16 offering to sell or selling within the United States, and/or importing into the
17 United States, components in connection with the Google Wireless Audio System
18 that contribute to the direct infringement of the '953 Patent by users of the Google
19 Wireless Audio System. In particular, (a) Google had actual knowledge of
20 the '953 Patent or was willfully blind to its existence prior to (at least as early as
21 February 2019), and no later than, the filing of the Original Complaint (*see* ¶¶ 38-
22 71 above), (b) Google offers for sale, sells, and/or imports, in connection with the
23 Google Wireless Audio System, one or more material components of the
24 invention of the '953 Patent that are not staple articles of commerce suitable for
25 substantial noninfringing use, (c) Google knows (or should know) that such
26 component(s) were especially made or especially adapted for use in an
27 infringement of the '953 Patent, and (d) users of devices that comprise such
28 material component(s) directly infringe one or more claims of the '953 Patent.

1 For instance, at a minimum, Google offers for sale, sells, and/or imports software
2 updates for Google Audio Players that meet one or more claims of the '953
3 Patent. *See, e.g.*, Exs. 20, 29, 60, 61, 85. These software updates are material
4 components of the Google Audio Players that meet the one or more claims of
5 the '953 Patent. Further, Google especially made and/or adapted these software
6 updates for use in the Google Audio Players that meet the one or more claims of
7 the '953 Patent, and these software updates are not staple articles of commerce
8 suitable for substantial noninfringing use. Google's customers then directly
9 infringe the one or more claims of the '953 Patent by installing and using software
10 updates on the Google Audio Players.

11 311. Google's infringement of the '953 Patent is also willful because
12 Google (a) had actual knowledge of the '953 Patent or was willfully blind to its
13 existence prior to (at least as early as February 2019), and no later than, the filing
14 of the Original Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
15 aforementioned activity despite an objectively high likelihood that Google's
16 actions constituted infringement of the '953 Patent, and (c) this
17 objectively-defined risk was either known or so obvious that it should have been
18 known to Google.

19 312. Additional allegations regarding Google's pre-suit knowledge of
20 the '953 Patent and willful infringement will likely have evidentiary support after
21 a reasonable opportunity for discovery.

22 313. Sonos is in compliance with any applicable marking and/or notice
23 provisions of 35 U.S.C. § 287 with respect to the '953 Patent.

24 314. Sonos is entitled to recover from Google all damages that Sonos has
25 sustained as a result of Google's infringement of the '953 Patent, including,
26 without limitation, a reasonable royalty and lost profits.

27 315. Google's infringement of the '953 Patent was and continued to be
28 willful and deliberate, entitling Sonos to enhanced damages.

1 316. Google’s infringement of the ’953 Patent is exceptional and entitles
2 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
3 U.S.C. § 285.

4 **COUNT VII: INFRINGEMENT OF U.S. PATENT NO. 10,439,896**

5 317. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
6 187-204 of this Second Amended Complaint as if fully set forth herein.

7 318. Google and/or users of the Google Wireless Audio System have
8 directly infringed (either literally or under the doctrine of equivalents) and
9 continue to directly infringe one or more of the claims of the ’896 Patent, in
10 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling
11 the Google Wireless Audio System within the United States and/or importing the
12 Google Wireless Audio System into the United States without authority or
13 license.

14 319. As just one non-limiting example, set forth below is an exemplary
15 infringement claim chart for claim 1 of the ’896 Patent in connection with the
16 Google Wireless Audio System. This claim chart is based on publicly available
17 information. Sonos reserves the right to modify this claim chart, including, for
18 example, on the basis of information about the Google Wireless Audio System
19 that it obtains during discovery.

Claim 1	Google
1. A computing device comprising:	At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with at least the Google Home app is referred to herein as a “Chromecast-enabled computing device” ⁸)

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25 ⁸ Each of the Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel
26 4a, Pixel 4a (5G), Pixel 5, Pixel 5a, Pixel 6, Pixel 6 Pro, Pixel 6a, Pixel 7, Pixel 7
27 Pro, Pixel 7a, Pixel Fold, Pixel 8, Pixel 8 Pro, Pixel 8a, Pixel 9, Pixel 9 Pro, Pixel
28 9 Pro XL, and Pixel 9 Pro Fold phones, the Pixel Slate and Pixel Tablet tablets, and
the Pixelbook and Pixelbook Go laptops installed with an Android version of the
Google Home app is an example of a “Chromecast-enabled computing device.”
(Footnote continues on next page.)

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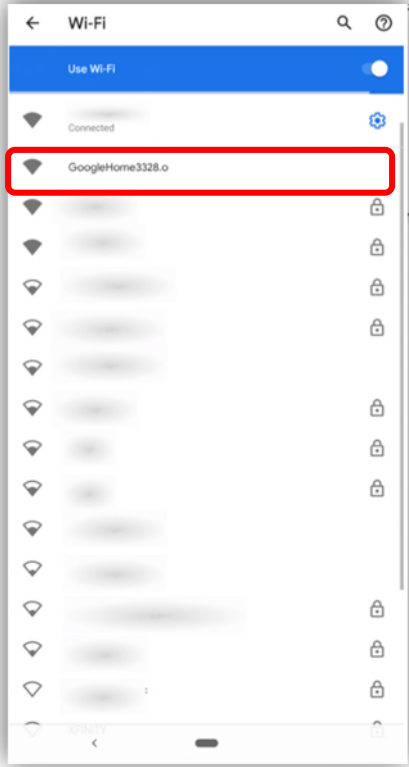
Claim 1	Google
	comprises a “computing device,” as recited in claim 1. At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a “playback device,” as recited in claim 1.
a user interface;	Each Chromecast-enabled computing device includes a user interface, such as a touchscreen and one or more physical buttons. <i>See, e.g.</i> , Exs. 40-43, 87-92.
a network interface;	Each Chromecast-enabled computing device includes a network interface, such as a Wi-Fi interface. <i>See, e.g.</i> , Exs. 40-43, 87-92.
at least one processor;	Each Chromecast-enabled computing device includes at least one processor. <i>See, e.g.</i> , Exs. 40-43, 87-92.
a non-transitory computer-readable medium; and program instructions stored on the non-transitory computer-readable medium that, when executed by the at least one processor, cause the computing device to perform functions comprising:	Each Chromecast-enabled computing device includes a non-transitory computer-readable medium and program instructions stored on the non-transitory computer-readable medium that, when executed by the Chromecast-enabled computing device’s at least one processor, cause the Chromecast-enabled computing device to perform the functions identified below. <i>See, e.g.</i> , Exs. 34, 35, 40-43, 87-92.

Likewise, each other smartphone, tablet, and computer installed with an Android or iOS version of the Google Home app is an example of a “Chromecast-enabled computing device,” including by way of example, Apple and Samsung phones and tablets.

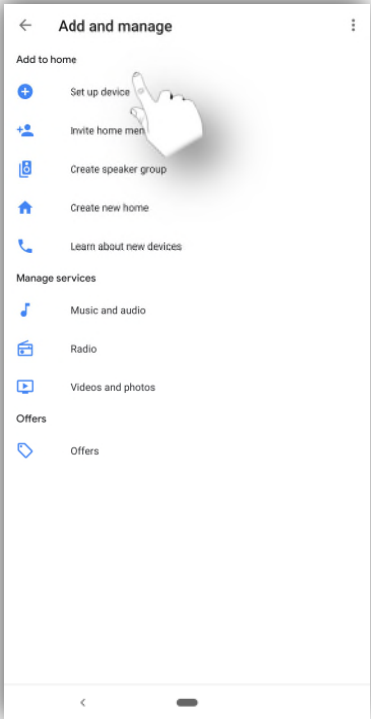

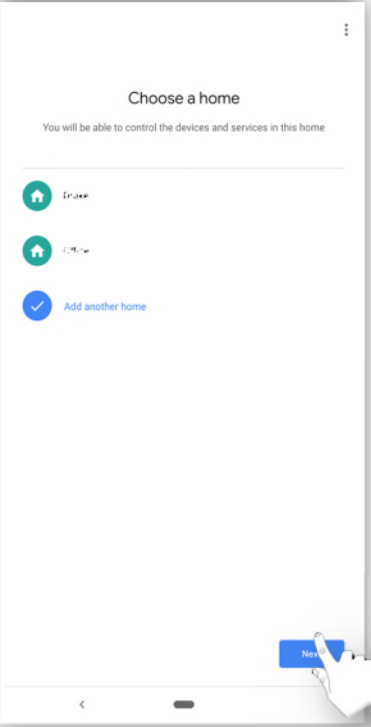
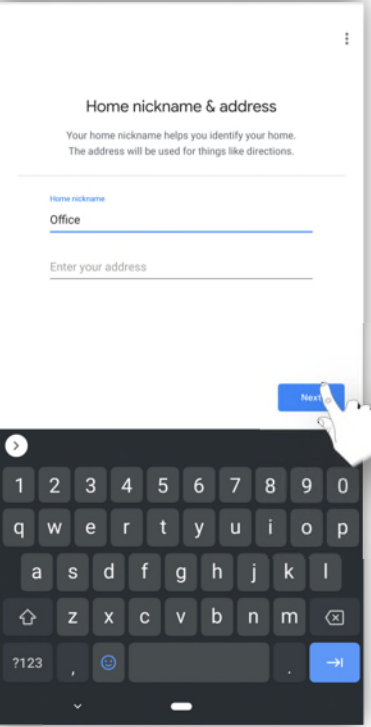
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Claim 1	Google
<p>while operating on a secure wireless local area network (WLAN) that is defined by an access point, (a) receiving, via a graphical user interface (GUI) associated with an application for controlling one or more playback devices, user input indicating that a user wishes to set up a playback device to operate on the secure WLAN and (b) receiving a first message indicating that a given playback device is available for setup;</p>	<p>Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device’s at least one processor, cause that Chromecast-enabled computing device to, while operating on a secure WLAN that is defined by an access point, (a) receive, via a GUI associated with an application for controlling one or more Google Audio Players, user input indicating that a user wishes to set up a Google Audio Player to operate on the secure WLAN and (b) receive a first message indicating that a given Google Audio Player is available for setup.</p> <p>For instance, each Chromecast-enabled computing device is programmed with the capability to run the Google Home app to set up and control Google Audio Players on a secure local Wi-Fi network (which is a WLAN) that is defined by an access point (<i>e.g.</i>, a router) to which the Chromecast-enabled computing device is communicatively coupled. <i>See, e.g.</i>, Ex. 101 (“The Google Home app will walk you through the steps to set up Google Home. . . . Choose the Wi-Fi network you want to connect to your device. . . . Access your music and movie services.”); Ex. 135 (“The Google Home app  will walk you through the steps to set up your Google Nest or Home speaker or display. . . . Important: Make sure your setup device is connected to the Wi-Fi network you want to connect your Nest speaker or display to.”); Exs. 80, 102, 103, 136.</p> <p>In this regard, while communicatively coupled to a secure local Wi-Fi network, the Chromecast-enabled computing device is capable of receiving, via a GUI presented by the Google Home app, user input indicating that a user wishes to set up a Google Audio Player to operate on the secure local Wi-Fi network. While that Google Audio Player is operating in a setup mode (<i>e.g.</i>, after being plugged into a wall socket for the first time out of the box or after being factory reset), the Chromecast-enabled computing device functions to receive, from the Google Audio Player, a message indicating that the Google Audio Player is available for setup (<i>e.g.</i>, a Bluetooth advertisement</p>

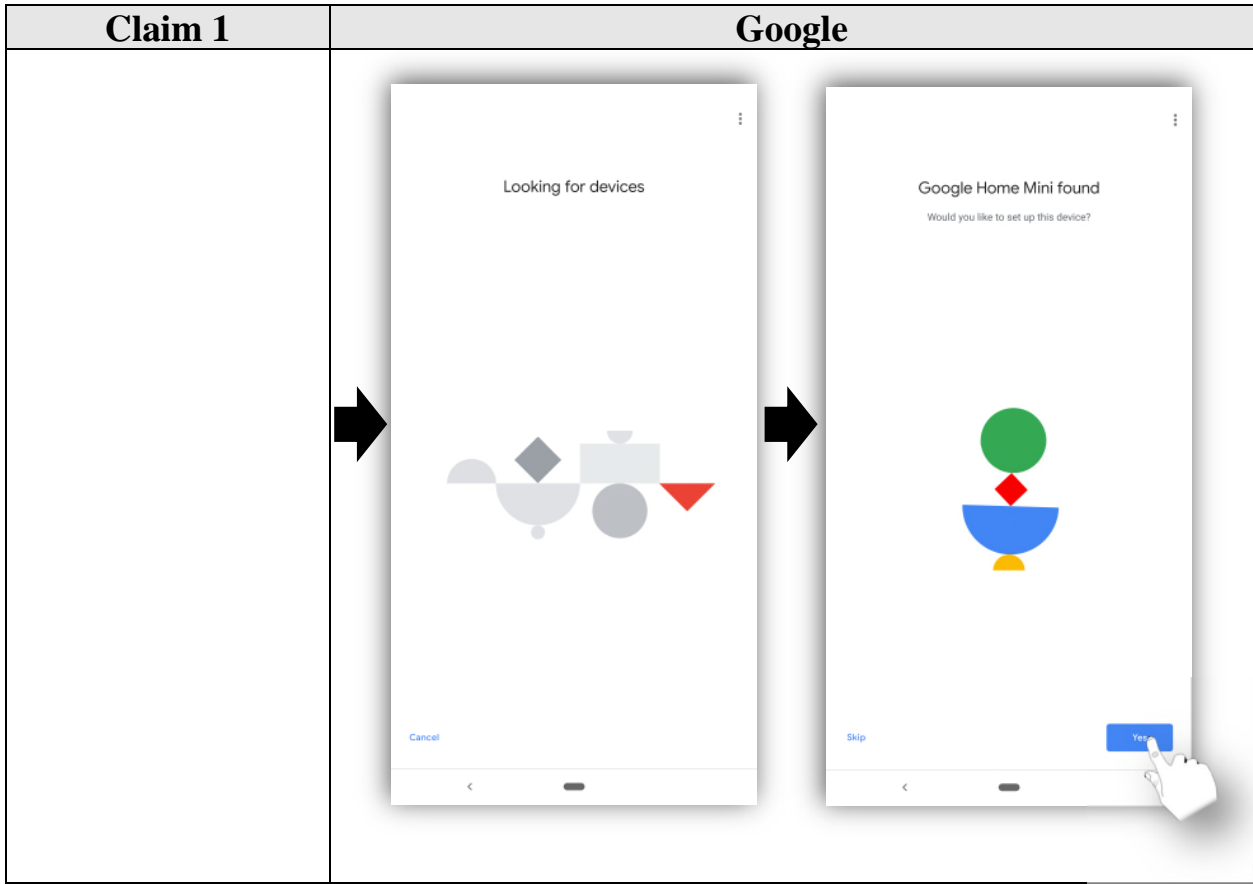
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Claim 1	Google
	<p data-bbox="609 226 1453 346">message or a Wi-Fi message comprising an SSID for an unsecure Wi-Fi network provided by the Google Audio Player).</p> <p data-bbox="609 394 1502 472">Examples of these functions are illustrated in the following screenshots.</p>  <p>The screenshot shows the 'Wi-Fi' settings page on an Android device. At the top, there is a toggle for 'Use Wi-Fi' which is turned on. Below this, there is a list of Wi-Fi networks. The first network is labeled 'Connected' and has a gear icon to its right. The second network is 'GoogleHome3328.o', which is highlighted with a red rectangular box. Below it, there are several other networks, each with a lock icon to its right, indicating they are secured. The background of the screenshot is slightly blurred.</p>

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Claim 1	Google
	 
	 

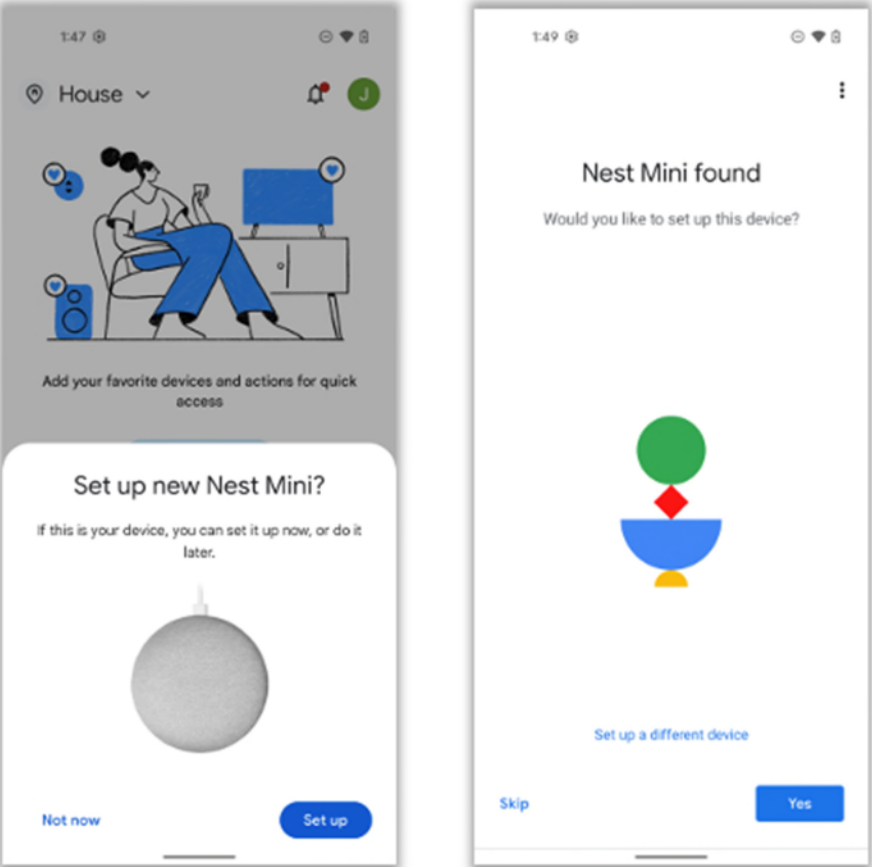
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Claim 1	Google
	<p>The image contains two screenshots from an Android phone. The left screenshot is titled "Pair new device" and shows a list of available devices. The device "NestMini4865" is highlighted with a red rectangular box. The right screenshot is titled "Internet" and shows the Wi-Fi settings. The network "NestMini4865.ynm." is highlighted with a red rectangular box.</p>

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Claim 1	Google
	 <p>The image displays two screenshots from the Google Home mobile application. The left screenshot shows a home screen with a person sitting at a desk and a smart speaker. A dialog box titled "Set up new Nest Mini?" is overlaid, asking if the user wants to set up a new device now or later. It features a "Not now" link and a blue "Set up" button. The right screenshot shows a notification titled "Nest Mini found" with the question "Would you like to set up this device?". It includes a colorful graphic of a smart speaker and two buttons: "Skip" and a blue "Yes" button.</p>

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Claim 1	Google
	<p>The sequence of screenshots illustrates the following steps:</p> <ol style="list-style-type: none">Set up new Nest Mini?: A screen asking if the user wants to set up a new device. It includes a "Set up" button and a "Not now" link.Choose a home: A screen where the user selects a home to associate with the device. It lists several homes and includes a "Next" button.Looking for devices...: A screen showing the app is searching for nearby devices. It includes a "Cancel" button.Nest Mini found: A screen displaying a colorful icon of the device and asking "Would you like to set up this device?". It includes a "Yes" button and a "Skip" link.

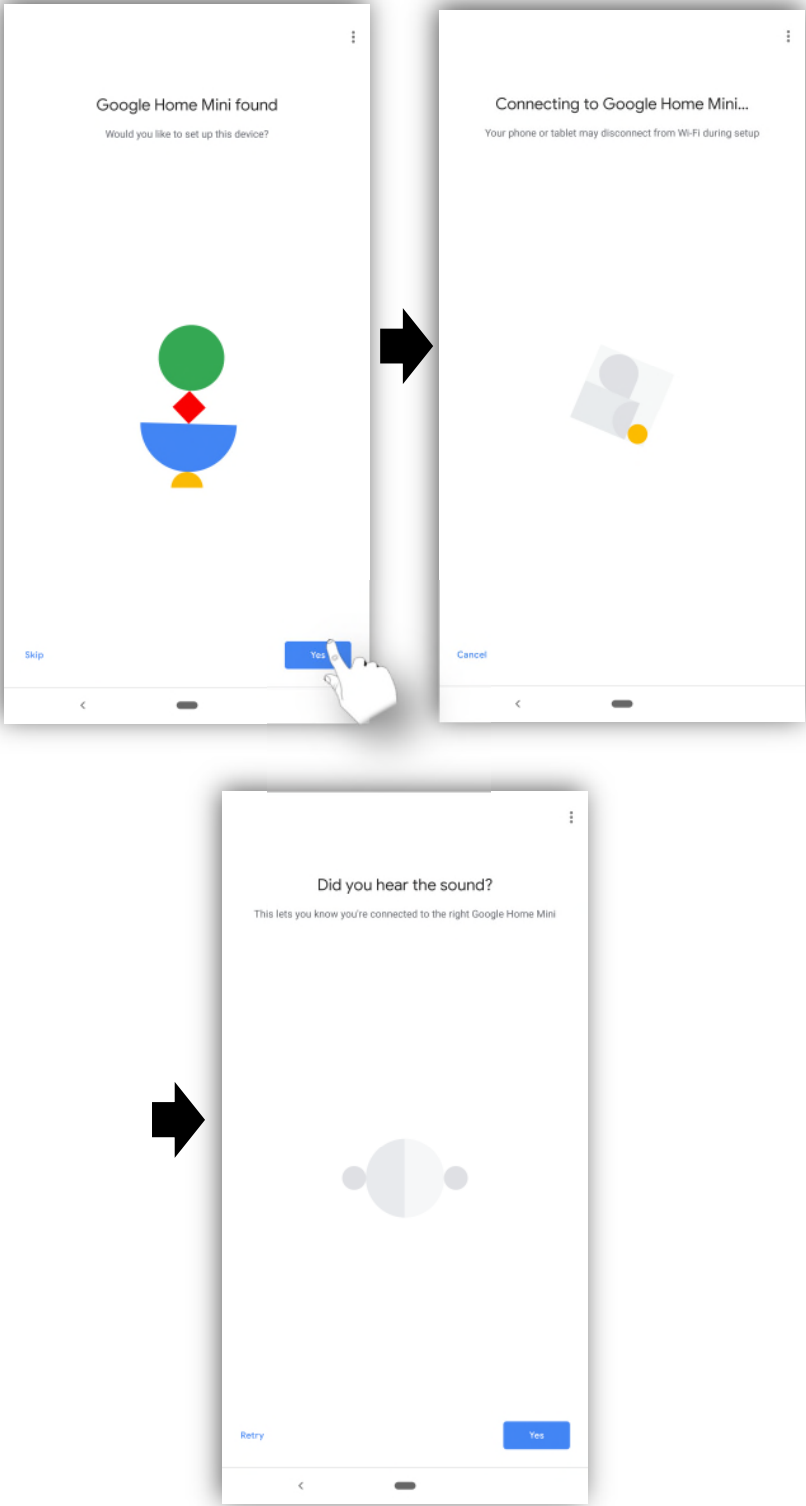
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Claim 1	Google
	<p><i>See also, e.g., Ex. 101 (“1. Plug in Google Home. . . . 7. Scanning for Google Home devices: The Google Home app scans for nearby devices that are plugged in and ready to set up. Tap the home you want to add the device to > Next.”); Ex. 135 (“What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on. . . . 1. Plug in your Nest speaker or display. •If the device has been used before, factory reset your speaker or display before you continue.”); Ex. 136.</i></p>
<p>after receiving the user input and receiving the first message, transmitting a response to the first message that facilitates establishing an initial communication path with the given playback device, wherein the initial communication path with the given playback device does not traverse the access point;</p>	<p>Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device’s at least one processor, cause that Chromecast-enabled computing device to, after receiving the user input and receiving the first message, transmit a response to the first message that facilitates establishing an initial communication path with the given Google Audio Player, where the initial communication path with the given Google Audio Player does not traverse the access point.</p> <p>For instance, each Chromecast-enabled computing device is programmed such that, after receiving user input indicating that a user wishes to set up a Google Audio Player to operate on a secure local Wi-Fi network defined by an access point and a message indicating that the Google Audio Player is available for setup, the Chromecast-enabled computing device functions to transmit a response to the message that facilitates establishing an initial communication path with the Google Audio Player, where the initial communication path is established directly between the Google Audio Player and the Chromecast-enabled computing device (<i>e.g.</i>, via Bluetooth or via an unsecure Wi-Fi network provided by the Google Audio Player), as opposed to traversing the access point for the secure local Wi-Fi network. <i>See, e.g., Ex. 101 (“8. Connecting to your new device: The app will now connect your phone to your new Google Home so that you can configure it. Note: You will be prompted with the</i></p>

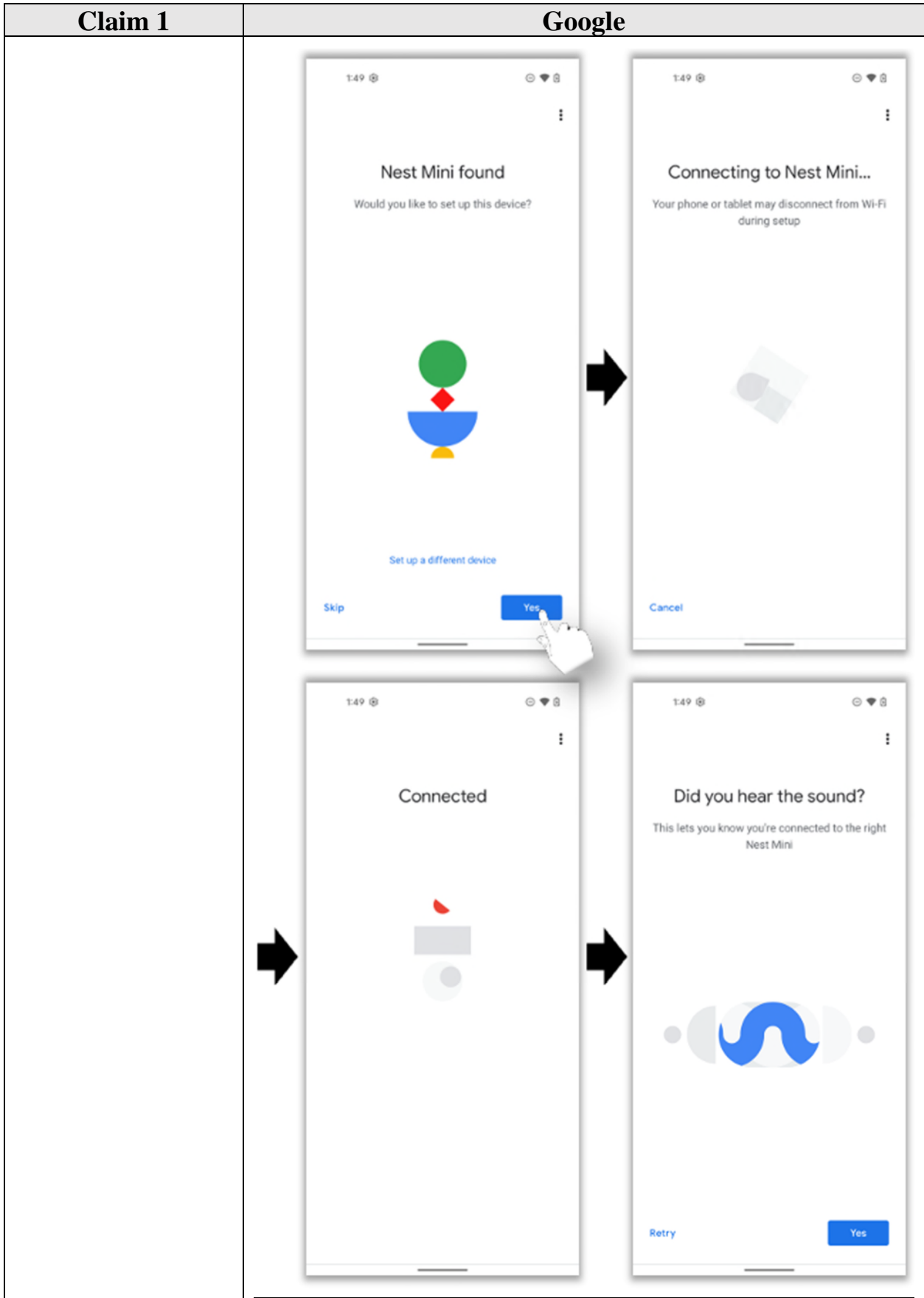
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Claim 1	Google
	following notification during this step, ‘Your phone may disconnect from Wi-Fi during setup’. 9. Making a connection: We’ll play a sound on the device to make sure you’re setting up the right device. When you hear the sound, tap Yes.”); Ex. 135 (“What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on.”); Ex. 136. An example of this functionality is illustrated in the screenshots below.

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Claim 1	Google
	 <p>The image displays three sequential screenshots from a mobile application used for setting up a Google Home Mini device. The first screenshot shows a notification that the device has been found and asks if the user wants to set it up, with a 'Yes' button highlighted by a hand cursor. The second screenshot shows the connection process, warning that the phone or tablet may disconnect from Wi-Fi, with a 'Cancel' button. The third screenshot asks if the user heard a sound to confirm they are connected to the correct device, with 'Retry' and 'Yes' buttons.</p>

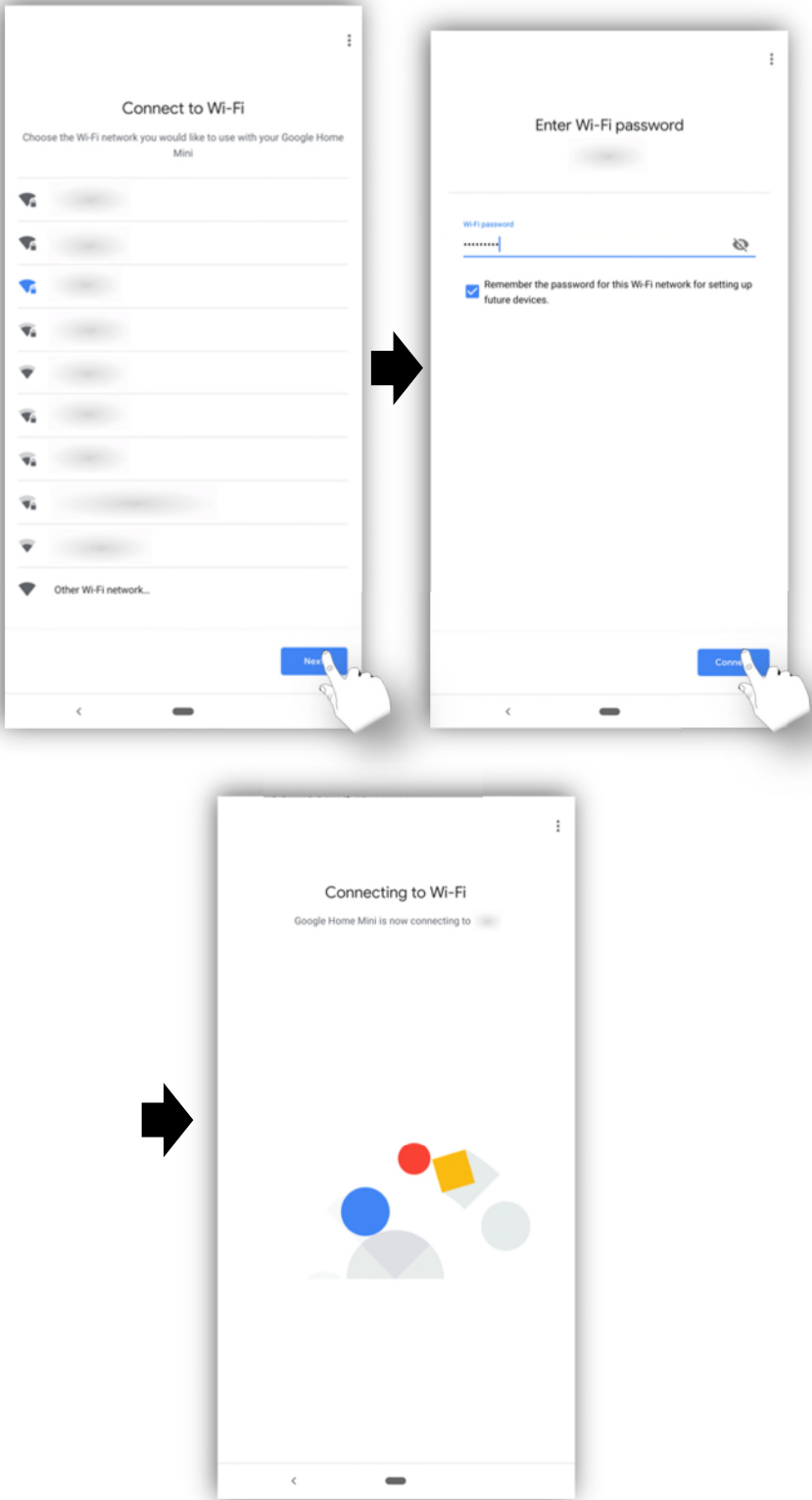
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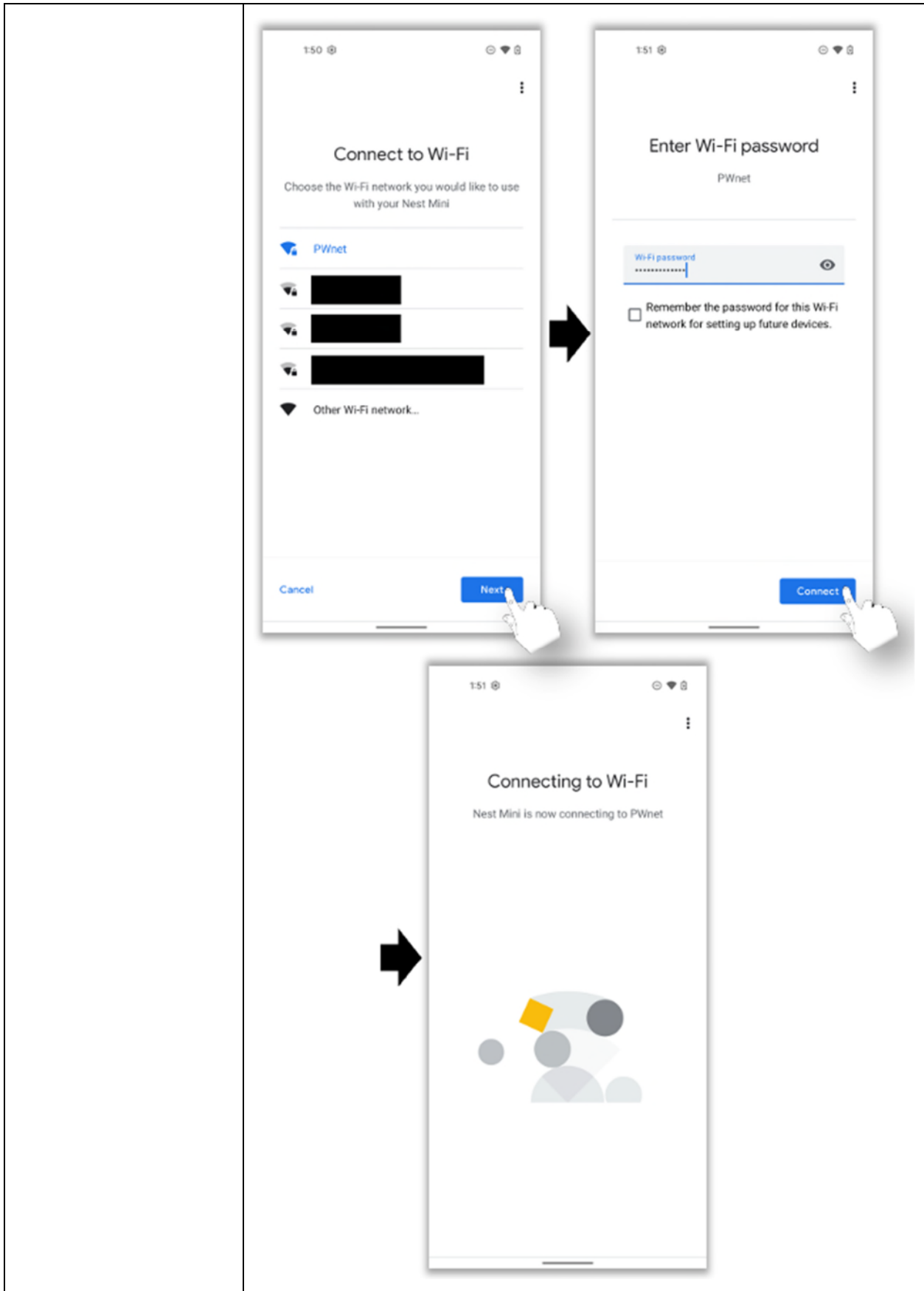
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Claim 1	Google
transmitting, to the given playback device via the initial communication path, at least a second message containing network configuration parameters, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN;	<p>Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device's at least one processor, cause that Chromecast-enabled computing device to transmit, to the given Google Audio Player via the initial communication path, at least a second message containing network configuration parameters, where the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN.</p> <p>For instance, each Chromecast-enabled computing device is programmed such that, after establishing an initial communication path with a Google Audio Player that is being set up to operate on a secure local Wi-Fi network, the Chromecast-enabled computing device functions to transmit, to the Google Audio Player via the initial communication path, one or more messages containing network configuration parameters for the secure local Wi-Fi network that include an identifier of the secure local Wi-Fi network and a security key for the secure local Wi-Fi network. An example of this functionality is illustrated below.</p>

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Claim 1	Google
	

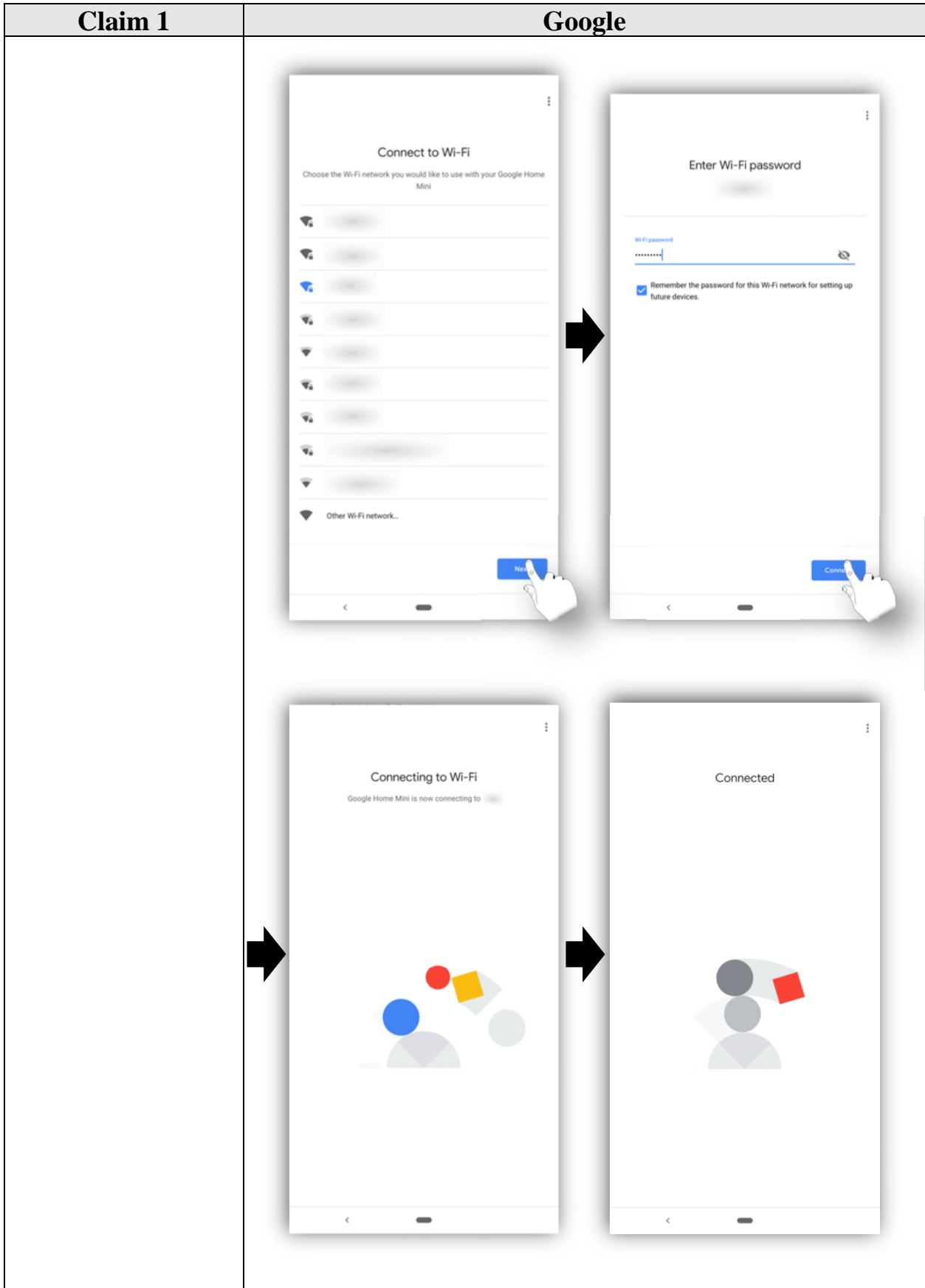
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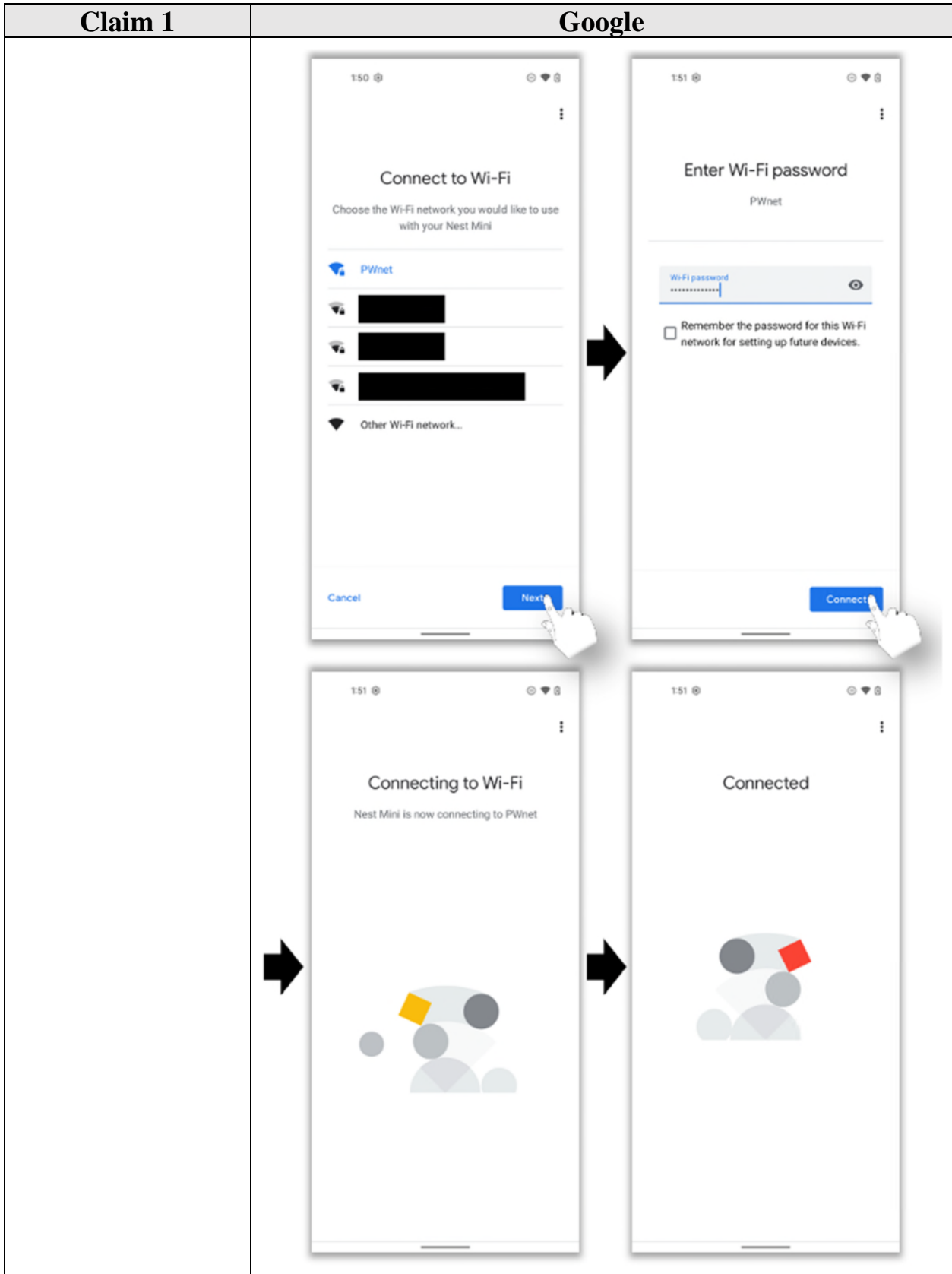
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Claim 1	Google
	<p><i>See also, e.g., Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”).</i></p>
<p>after transmitting at least the second message containing the network configuration parameters, detecting an indication that the given playback device has successfully received the network configuration parameters; and</p>	<p>Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device’s at least one processor, cause that Chromecast-enabled computing device to, after transmitting at least the second message containing the network configuration parameters, detect an indication that the given Google Audio Player has successfully received the network configuration parameters.</p> <p>For instance, each Chromecast-enabled computing device is programmed such that, after transmitting to a Google Audio Player one or more messages containing network configuration parameters for a secure local Wi-Fi network, the Chromecast-enabled computing device functions to detect an indication that the Google Audio Player successfully received the network configuration parameters. An example of this functionality is illustrated in the following screenshots.</p>

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Claim 1	Google
<p>after detecting the indication, transitioning from communicating with the given playback device via the initial communication path to communicating with the given playback device via the secure WLAN that is defined by the access point.</p>	<p>Each Chromecast-enabled computing device comprises program instructions that, when executed by a Chromecast-enabled computing device’s at least one processor, cause that Chromecast-enabled computing device to, after detecting the indication, transition from communicating with the given Google Audio Player via the initial communication path to communicating with the given Google Audio Player via the secure WLAN that is defined by the access point.</p> <p>For instance, each Chromecast-enabled computing device is programmed such that, after detecting an indication that a Google Audio Player successfully received network configuration parameters for a secure local Wi-Fi network defined by an access point, the Chromecast-enabled computing device functions to transition from communicating with the Google Audio Player via the initial communication path to communicating with the Google Audio Player via the secure local Wi-Fi network. <i>See, e.g.</i>, Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”).</p> <p>As illustrative examples, after the Chromecast-enabled computing device transitions from communicating with the Google Audio Player via the initial communication path to communicating with the Google Audio Player via the secure local Wi-Fi network, the Chromecast-enabled computing device is capable of transmitting commands to the Google Audio Player via the secure local Wi-Fi network, such as a command for the Google Audio Player to adjust its audio volume or a command for the Google Audio Player to retrieve audio content for playback from an Internet-based music service (<i>e.g.</i>, YouTube Music, Spotify, Pandora, Google Play Music, Deezer, TuneIn, iHeartRadio, etc.) that in turn causes the Google Audio Player to retrieve the audio content from the Internet-based music service via a communication path including the</p>

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Claim 1	Google
	secure local Wi-Fi network and the Internet. <i>See, e.g., Ex. 30</i> (“Other ways to control music . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is connected to the same Wi-Fi as your speaker or display. 2. Open the Google Home app  . 3. Tap Play music under the name of the device that you want to use. Your device will play music from your default music provider. You can pause, resume, change volume and skip forward or backward in the song.”) (emphasis in original); <i>Ex. 101</i> (“Media services: Access your music and movie services. . . Default music service: If you have more than one music service linked, you will be asked to select a Default music service: Tap the service you want to use as default > Next.”); <i>Ex. 124</i> (“Other ways to control music . . . You can also start and control music from the Google Home app. . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is linked to the same account as your speaker or display. 2. Open the Google Home app  . 3. Tap Favorites  . Tap the current media session for: <ul style="list-style-type: none"> •Playback controls •Volume control (media and Google Assistant) •Playback device selection”); <i>Exs. 104, 105.</i>

320. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ’896 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the ’896 Patent. In particular, (a) Google had actual knowledge of the ’896 Patent or was willfully blind to its existence prior to, and no later than, the filing of the Original Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the ’896 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses thereof, including infringing uses (*see Exs. 34, 35, 79, 80, 101, 135, 136*), (c)

1 Google knows (or should know) that its actions will induce users of the Google
2 Wireless Audio System to directly infringe one or more claims the '896 Patent,
3 and (d) users of the Google Wireless Audio System directly infringe one or more
4 claims of the '896 Patent. For instance, at a minimum, Google has supplied and
5 continues to supply the Google Home app to customers while knowing that
6 installation and/or use of this app will infringe one or more claims of the '896
7 Patent, and that Google's customers then directly infringe one or more claims of
8 the '896 Patent by installing and/or using the Google Home app in accordance
9 with Google's product literature. *See, e.g., id.*

10 321. Additionally and/or alternatively, Google has indirectly infringed and
11 continues to indirectly infringe one or more of the claims of the '896 Patent, in
12 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
13 States, and/or importing into the United States, components in connection with the
14 Google Wireless Audio System that contribute to the direct infringement of
15 the '896 Patent by users of the Google Wireless Audio System. In particular, (a)
16 Google had actual knowledge of the '896 Patent or was willfully blind to its
17 existence prior to, and no later than, the filing of the Original Complaint (*see* ¶¶
18 38-71 above), (b) Google offers for sale, sells, and/or imports, in connection with
19 the Google Wireless Audio System, one or more material components of the
20 invention of the '896 Patent that are not staple articles of commerce suitable for
21 substantial noninfringing use, (c) Google knows (or should know) that such
22 component(s) were especially made or especially adapted for use in an
23 infringement of the '896 Patent, and (d) users of devices that comprise such
24 material component(s) directly infringe one or more claims of the '896 Patent.
25 For instance, at a minimum, Google offers for sale, sells, and/or imports the
26 Google Home app for installation on devices (*e.g.*, smartphones, tablets, and
27 computers) that meet one or more claims of the '896 Patent. *See, e.g., Ex. 34, 35,*
28 *79, 80.* The Google Home app is a material component of the devices that meet

1 the one or more claims of the '896 Patent. Further, Google especially made
2 and/or adapted the Google Home app for use in devices that meet the one or more
3 claims of the '896 Patent, and this app is not a staple article of commerce suitable
4 for substantial noninfringing use. Google's customers then directly infringe the
5 one or more claims of the '896 Patent by installing and/or using the Google Home
6 app on the customers' devices.

7 322. Google's infringement of the '896 Patent is also willful because
8 Google (a) had actual knowledge of the '896 Patent or was willfully blind to its
9 existence prior to, and no later than, the filing of the Original Complaint (*see* ¶¶
10 38-71 above), (b) engaged in the aforementioned activity despite an objectively
11 high likelihood that Google's actions constituted infringement of the '896 Patent,
12 and (c) this objectively-defined risk was either known or so obvious that it should
13 have been known to Google.

14 323. Additional allegations regarding Google's pre-suit knowledge of
15 the '896 Patent and willful infringement will likely have evidentiary support after
16 a reasonable opportunity for discovery.

17 324. Sonos is in compliance with any applicable marking and/or notice
18 provisions of 35 U.S.C. § 287 with respect to the '896 Patent.

19 325. Sonos is entitled to recover from Google all damages that Sonos has
20 sustained as a result of Google's infringement of the '896 Patent, including,
21 without limitation, a reasonable royalty and lost profits.

22 326. Google's infringement of the '896 Patent was and continues to be
23 willful and deliberate, entitling Sonos to enhanced damages.

24 327. Google's infringement of the '896 Patent is exceptional and entitles
25 Sonos to attorneys' fees and costs incurred in prosecuting this action under 35
26 U.S.C. § 285.

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1 328. Google’s infringement of the ’896 Patent has caused irreparable
 2 harm (including the loss of market share) to Sonos and will continue to do so
 3 unless enjoined by this Court.

4 **COUNT VIII: INFRINGEMENT OF U.S. PATENT NO. 11,080,001**

5 329. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
 6 205-220 of this Second Amended Complaint as if fully set forth herein.

7 330. Google and/or users of the Google Wireless Audio System have
 8 directly infringed (either literally or under the doctrine of equivalents) and
 9 continue to directly infringe one or more of the claims of the ’001 Patent, in
 10 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling
 11 the Google Wireless Audio System within the United States and/or importing the
 12 Google Wireless Audio System into the United States without authority or
 13 license.

14 331. As just one non-limiting example, set forth below is an exemplary
 15 infringement claim chart for claim 12 of the ’001 Patent in connection with the
 16 Google Wireless Audio System. This claim chart is based on publicly available
 17 information. Sonos reserves the right to modify this claim chart, including, for
 18 example, on the basis of information about the Google Wireless Audio System
 19 that it obtains during discovery.

Claim 12	Google
12. A first zone player comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a “zone player,” as recited in claim 12.
a network interface that is configured to communicatively couple the first zone	Each of the foregoing Google Audio Players includes a network interface that is configured to communicatively couple a Google Audio Player to at least one data network, such as a Wi-Fi interface

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Claim 12	Google
player to at least one data network;	configured to communicatively couple the Google Audio Player to a Wi-Fi network. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
a tangible, non-transitory computer-readable medium; and program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor such that the first zone player is configured to perform functions comprising:	Each of the foregoing Google Audio Players includes a tangible, non-transitory computer-readable medium having executable program instructions that enable a Google Audio Player to perform the functions identified below. <i>See, e.g.</i> , Exs. 68, 85, 95-98, 111-113.
receiving, via the network interface, a request to engage in synchronous playback of audio content as part of a synchrony group that includes at least a second zone player that is communicatively coupled to the first zone player via the at least one data network;	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to receive, via its network interface, a request to engage in synchronous playback of audio content as part of a synchrony group that includes at least a second Google Audio Player that is communicatively coupled to the first Google Audio Player via the at least one data network.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to receive over a Wi-Fi network a request to engage in synchronous playback of audio content as part of a “group” that includes at least another Google Audio Player that is on the same Wi-Fi network as the Google Audio Player, where the request is from a Chromecast-enabled computing device on the Wi-Fi network or a Google cloud server that is communicatively coupled to the Wi-Fi network, among other possibilities. <i>See e.g.</i>,</p>

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Claim 12	Google
	<p>Ex. 29 (“Group any combination of Google Nest or Google Home speakers and displays, Chromecast devices, and speakers with Chromecast built-in together for synchronous music throughout the home. Your favorite music and audio from Chromecast-enabled apps are instantly available to stream.”); Exs. 30, 69, 94, 99, 104, 106.</p> <p>Public testimony from Google’s engineers evidences this functionality. For example, as explained by Google’s engineers, Google Audio Players receive a “JoinGroup” request from a user device running the Google Home app after user input to “create a group[.]” <i>See, e.g., Ex. 122, 1245:12-25.</i></p>
<p>after receiving the request to engage in synchronous playback of audio content as part of the synchrony group: detecting an indication that the first zone player is to operate in (a) one of a control-master mode or a control-slave mode for the synchrony group and (b) one of an audio-master mode or an audio-slave mode for the synchrony group; and beginning to operate in the synchrony group in accordance with the indication;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by a first Google Audio Player, cause the first Google Audio Player to, after receiving the request to engage in synchronous playback of audio content as part of the synchrony group: (i) detect an indication that the Google Audio Player is to operate in (a) one of a control-master mode or a control-slave mode for the synchrony group and (b) one of an audio-master mode or an audio-slave mode for the synchrony group and (ii) begin to operate in the synchrony group in accordance with the indication.</p> <p>For instance, as noted above, each of the foregoing Google Audio Players is programmed with the capability to receive a request to engage in synchronous playback of audio content as part of a “group.”</p> <p>In such a group, one of the Google Audio Players will be designated to serve as the “master” of the group (sometimes referred to by Google as the “leader” of the group) and every other Google Audio Player will be designated to serve as a “slave” of the group (sometimes referred to by Google as a “follower” of the group). <i>See, e.g., Ex. 122, 1277:10-13, 1278:1-6.</i> Such designations are the result of each Google Audio Player</p>

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Claim 12	Google
	<p>of the group (i) evaluating one or more metrics related to the performance of the synchronous audio playback by the Google Audio Players in the group, including but not limited to one or more metrics related to the wireless signal quality detected by the Google Audio Players in the group (e.g., as reflected in “SRV (Server Selection)” fields contained within MDNS packets exchanged between the Google Audio Players in the group) and (ii) based on the evaluation, determining whether the Google Audio Player has the best metric(s) and should therefore operate as the “master”/“leader” of the group or otherwise, should operate as a “slave”/“follower” of the group.</p> <p>As discussed below, the “master”/“leader” of a group of Google Audio Players operates in the claimed “control-master mode” and “audio-master mode” and each “slave”/“follower” of the group of Google Audio Players operates in the claimed “control-slave mode” and “audio-slave mode.”</p> <p>Each of the foregoing Google Audio Players is programmed with the capability to (i) detect an indication that the Google Audio Player is to operate as either a “master”/“leader” or a “slave”/“follower” at various times after receiving a request to engage in synchronous playback of audio content as part of a group of Google Audio Players and (ii) begin to operate in the group in accordance with the detected indication.</p> <p>Public testimony from Google’s engineers evidences this functionality. For example, as explained by Google’s engineers, Google Audio Players “continuously” engage in a “leader election process” in which each player (i) broadcasts a respective “leader quality number” that “tells the other [players] in the network how good that [player] would be as a leader for the group,” where the “quality is in part based on the Wi-Fi signal strength of each device,” and (ii) evaluates its own leader quality relative to the</p>

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Claim 12	Google
	<p>respective leader quality of each other player. <i>See</i> Ex. 122, 1247:14-24, 1248:3-1249:1, 1249:20-1250:9, 1251:3-1252:9, 1253:4-23, 1300:16-1301:4. In this way, “over time,” “the [player] that’s chosen as the leader... may change at any time.” <i>Id.</i>, 1253:19-23; <i>see also id.</i>, 1247:2-7, 1251:3-1252:9.</p>
<p>wherein, while operating in the control-master mode for the synchrony group, the first zone player is configured to: receive, via the network interface, first control information for the synchrony group from a network device that is communicatively coupled to the first zone player; and based on the first control information, cause, via the network interface, at least one playback action to be applied in the synchrony group;</p>	<p>While operating in the control-master mode for the synchrony group, a first Google Audio Player is configured to: (i) receive, via its network interface, first control information for the synchrony group from a network device that is communicatively coupled to the first Google Audio Player; and (ii) based on the first control information, cause, via its network interface, at least one playback action to be applied in the synchrony group.</p> <p>Each of the foregoing Google Audio Players is programmed such that, while operating as the “master” of a group, a first Google Audio Player functions to (i) receive from a Chromecast-enabled computing device on the same Wi-Fi network as the first Google Audio Player or a Google cloud server that is communicatively coupled to the Wi-Fi network, among other possibilities, control information for the group, such as control information indicating that the group should initiate playing back media, and (ii) based on such control information, transmit one or more messages to the “slave” Google Audio Player(s) via the “master” Google Audio Player’s network interface that cause the “slave” Google Audio Player(s) to perform at least one playback action. <i>See, e.g.</i>, Ex. 122, 1259:20-1260:5, 1268:23-1269:8, 1300:6-15, 1315:5-10.</p>
<p>wherein, while operating in the control-slave mode for the synchrony group, the first zone player is configured to:</p>	<p>While operating in the control-slave mode for the synchrony group, a first Google Audio Player is configured to: (i) receive, via it network interface, second control information from another Google Audio Player; and (ii) perform one or more playback actions in accordance with the second control information.</p>

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Claim 12	Google
<p>receive, via the network interface, second control information from another zone player; and perform one or more playback actions in accordance with the second control information;</p>	<p>Each of the foregoing Google Audio Players is programmed such that, while operating as the “slave” of a group, a first Google Audio Player functions to receive via its network interface control information from the group’s “master” Google Audio Player and perform one or more playback actions (e.g., initiating playback of media) in accordance with the control information. <i>See, e.g.,</i> Ex. 122, 1259:20-1260:5, 1268:23-1269:8, 1300:6-15.</p>
<p>wherein, while operating in the audio-master mode for the synchrony group, the first zone player is configured to:</p> <ul style="list-style-type: none"> obtain audio information that is representative of the audio content; generate playback timing information associated with the obtained audio information that is indicative of at least one future time that is relative to a reference clock time and denotes a time at which at least the first and second zone players are to engage in synchronous playback of a corresponding portion of the 	<p>While operating in the audio-master mode for the synchrony group, a first Google Audio Player is configured to: (i) obtain audio information that is representative of the audio content; (ii) generate playback timing information associated with the obtained audio information that is indicative of at least one future time that is relative to a reference clock time and denotes a time at which at least the first and second Google Audio Players are to engage in synchronous playback of a corresponding portion of the obtained audio information; and (iii) transmit, via its network interface, the obtained audio information and the generated playback timing information to the second Google Audio Player.</p> <p>Each of the foregoing Google Audio Players is programmed such that, while operating as the “master” of a group, a first Google Audio Player functions to obtain audio information representative of the audio content from an audio source (e.g., an Internet-based audio source) and transmits to at least one “slave” Google Audio Player the audio information and playback timing information that is (a) associated with the audio information, (b) generated by the first Google Audio Player, and (c) indicative of at least one future time that is relative to a reference clock time (e.g., the first Google Audio Player’s clock time) and denotes a time at which the Google Audio Players of the group</p>

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Claim 12	Google
<p>obtained audio information; and transmit, via the network interface, the obtained audio information and the generated playback timing information to the second zone player; and</p>	<p>are to engage in synchronous playback of a corresponding portion of the audio information.</p> <p>Public testimony from Google’s engineers and public documentation evidence this functionality. For example, as explained by Google’s engineers, “in order to play media onto a group, one of the devices in the group has to be the leader. That will be the device that actually will launch the application that you would like to listen to, and that is what downloads the media from the internet and then distributes the audio to the rest of the devices.” Ex. 122, 1300:6-15. As another example, a technical document (TX6454) Google published during a jury trial (Ex. 122, 1238:10-24) states the “leader” is responsible for “distributing the audio stream to the follower devices,” where the “audio stream would consist of audio frames with timestamps from the leader’s monotonic system clock,” and “the leader should designate a ‘synchronous start time’ where all followers that have good time sync start playing.” Ex. 127, GOOG-SONOSWDTX-00048969; <i>see also id.</i>, GOOG-SONOSWDTX-00048970 (“Each [audio] packet has an associated expiry time (ie, the time that it should be played at).”).</p>
<p>wherein, while operating in the audio-slave mode for the synchrony group, the first zone player is configured to:</p> <ul style="list-style-type: none"> receive, via the network interface, audio information and playback timing information associated with the received audio information from another zone player; and 	<p>While operating in the audio-slave mode for the synchrony group, a first Google Audio Player is configured to (i) receive, via its network interface, audio information and playback timing information associated with the received audio information from another Google Audio Player; and (ii) engage in synchronous playback of the received audio information with at least the second Google Audio Player based on the received playback timing information associated with the received audio information while a local clock time of the first Google Audio Player differs from a local clock time of the second Google Audio Player.</p> <p>Each of the foregoing Google Audio Players is programmed such that, while operating as the “slave”</p>

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Claim 12	Google
engage in synchronous playback of the received audio information with at least the second zone player based on the received playback timing information associated with the received audio information while a local clock time of the first zone player differs from a local clock time of the second zone player.	of a group, a first Google Audio Player functions to (i) receive from the “master” Google Audio Player, via its network interface, audio information and associated playback timing information and (ii) engage in synchronous playback of the received audio information with at least the “master” Google Audio Player based on the received playback timing information associated with the received audio information while a local clock time of the “slave” Google Audio Player differs from a local clock time of the “master” Google Audio Player. <i>See, e.g., Ex. 127, GOOG-SONOSWDTX-00048969</i> (“On each follower, the time sync will track the offset between the leader’s monotonic clock and the follower’s monotonic clock; the follower can therefore adjust the timestamp for each incoming [audio] frame appropriately. Audio frames will then be output as usual....”).

332. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the ’001 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the ’001 Patent. In particular, (a) Google had actual knowledge of the ’001 Patent or was willfully blind to its existence prior to (at least as early as August 2021), and no later than, the filing of the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the ’001 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 20, 29, 60, 61), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the ’001 Patent, and (d) users of the Google Wireless Audio System

1 directly infringe one or more claims of the '001 Patent. For instance, at a
2 minimum, Google has supplied and continues to supply Google Audio Players to
3 customers while knowing that use of these products will infringe one or more
4 claims of the '001 Patent and that Google's customers then directly infringe one
5 or more claims of the '001 Patent by using these Google Audio Players in
6 accordance with Google's product literature. *See, e.g., id.*

7 333. Additionally and/or alternatively, Google has indirectly infringed and
8 continues to indirectly infringe one or more of the claims of the '001 Patent, in
9 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
10 States, and/or importing into the United States, components in connection with the
11 Google Wireless Audio System that contribute to the direct infringement of
12 the '001 Patent by users of the Google Wireless Audio System. In particular, (a)
13 Google had actual knowledge of the '001 Patent or was willfully blind to its
14 existence prior to (at least as early as August 2021), and no later than, the filing of
15 the First Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers for sale,
16 sells, and/or imports, in connection with the Google Wireless Audio System, one
17 or more material components of the invention of the '001 Patent that are not
18 staple articles of commerce suitable for substantial noninfringing use, (c) Google
19 knows (or should know) that such component(s) were especially made or
20 especially adapted for use in an infringement of the '001 Patent, and (d) users of
21 devices that comprise such material component(s) directly infringe one or more
22 claims of the '001 Patent. For instance, at a minimum, Google offers for sale,
23 sells, and/or imports software updates for Google Audio Players that meet one or
24 more claims of the '001 Patent. *See, e.g., Ex. 20, 29, 60, 61, 85.* These software
25 updates are material components of the Google Audio Players that meet the one or
26 more claims of the '001 Patent. Further, Google especially made and/or adapted
27 these software updates for use in the Google Audio Players that meet the one or
28 more claims of the '001 Patent, and these software updates are not staple articles

1 of commerce suitable for substantial noninfringing use. Google's customers then
2 directly infringe the one or more claims of the '001 Patent by installing and using
3 software updates on the Google Audio Players.

4 334. Google's infringement of the '001 Patent is also willful because
5 Google (a) had actual knowledge of the '001 Patent or was willfully blind to its
6 existence prior to (at least as early as August 2021), and no later than, the filing of
7 the First Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in the
8 aforementioned activity despite an objectively high likelihood that Google's
9 actions constituted infringement of the '001 Patent, and (c) this
10 objectively-defined risk was either known or so obvious that it should have been
11 known to Google.

12 335. Additional allegations regarding Google's pre-suit knowledge of
13 the '001 Patent and willful infringement will likely have evidentiary support after
14 a reasonable opportunity for discovery.

15 336. Sonos is in compliance with any applicable marking and/or notice
16 provisions of 35 U.S.C. § 287 with respect to the '001 Patent.

17 337. Sonos is entitled to recover from Google all damages that Sonos has
18 sustained as a result of Google's infringement of the '001 Patent, including,
19 without limitation, a reasonable royalty and lost profits.

20 338. Google's infringement of the '001 Patent was and continues to be
21 willful and deliberate, entitling Sonos to enhanced damages.

22 339. Google's infringement of the '001 Patent is exceptional and entitles
23 Sonos to attorneys' fees and costs incurred in prosecuting this action under 35
24 U.S.C. § 285.

25 340. Google's infringement of the '001 Patent has caused irreparable
26 harm (including the loss of market share) to Sonos and will continue to do so
27 unless enjoined by this Court.
28

1 **COUNT IX: INFRINGEMENT OF U.S. PATENT NO. 10,966,025**

2 341. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
3 221-232 of this Second Amended Complaint as if fully set forth herein.

4 342. Google and/or users of the Google Wireless Audio System have
5 directly infringed (either literally or under the doctrine of equivalents) and
6 continue to directly infringe one or more of the claims of the '025 Patent, in
7 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling
8 the Google Wireless Audio System within the United States and/or importing the
9 Google Wireless Audio System into the United States without authority or
10 license.

11 343. As just one non-limiting example, set forth below is an exemplary
12 infringement claim chart for claim 1 of the '025 Patent in connection with the
13 Google Wireless Audio System. This claim chart is based on publicly available
14 information. Sonos reserves the right to modify this claim chart, including, for
15 example, on the basis of information about the Google Wireless Audio System
16 that it obtains during discovery.

Claim 1	Google
1. A playback device comprising:	At least each Google Home, Home Mini, Home Max, Nest Mini, and Nest Audio comprises a “playback device,” as recited in claim 1. At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with at least the Google Home app is referred to herein as a “Chromecast-enabled computing device”) comprises a “controller,” as recited in claim 1.
a network interface configured to receive audio data over a network;	Each of the foregoing Google Audio Players includes a network interface configured to receive audio data over a network, such as a Wi-Fi interface. <i>See, e.g., Ex. 112.</i>
one or more speaker drivers configured to output audio	Each of the foregoing Google Audio Players includes one or more speaker drivers configured to output audio based on the audio data. <i>See, e.g., Ex. 112.</i>

Claim 1	Google
based on the audio data;	
one or more processors; and	Each of the foregoing Google Audio Players includes one or more processors. <i>See, e.g., Ex. 112.</i>
tangible, non-transitory, computer readable memory comprising instructions encoded therein, wherein the instructions, when executed by the one or more processors, cause the playback device to:	Each of the foregoing Google Audio Players includes tangible, non-transitory, computer-readable memory comprising executable program instructions that enable the Google Audio Player to perform the functions identified below. <i>See, e.g., Ex. 112.</i>
receive a signal from a controller over the network, wherein the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles; and	<p>Each of the foregoing Google Audio Player comprises program instructions that, when executed by the Google Audio Player's one or more processors, cause the Google Audio Player to receive a signal from a Chromecast-enabled computing device over the network, where the signal comprises an instruction for the Google Audio Player to become paired with one or more other Google Audio Players such that, after pairing, the Google Audio Player and the one or more other Google Audio Players have different playback roles.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to receive, from a Chromecast-enabled computing device over a Wi-Fi network that the Google Audio Player is connected to, an instruction to begin operating as part of a "speaker pair" configuration for "stereo sound" (also referred to by Google as a "stereo pairing") with another Google Audio Player of the same model as the Google Audio Player, which is a configuration involving two or more Google Audio Players having different playback roles. <i>See, e.g., Ex. 69</i> ("Pair Google Home Max speakers[:] You can pair two Google Home Max speakers (devices) for stereo sound and an immersive experience for music and</p>

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Claim 1	Google
	<p>casting.... Step 1. Place speakers in the best position in your room Step 2. Set up both Google Home Max speakers Step 3. Pair the speakers Step 4. Control the speaker pair”); Ex. 132 (“For an immersive music and media experience, you can connect 2 speakers to set up stereo sound. Stereo sound pairing is available on Google Home, Google Nest Mini (2nd gen), Google Home Mini (1st gen), Google Home Max, and Google Nest Audio.”).</p> <p>In a “speaker pair” configuration, one Google Audio Player has the role of playing back the left audio channel, and the other Google Audio Player has the role of playing back the right audio channel. <i>See, e.g.</i>, Ex. 69 (“Tap Left or Right to match the location of the blinking speaker”) (emphasis in original).</p> <p>For example, at the time that a user inputs a request to create a given “speaker pair” via a Chromecast-enabled computing device, the Chromecast-enabled computing device transmits control packets to at least a first Google Audio Player in the given “speaker pair.” On information and belief, these control packets include an instruction for the first Google Audio Player to begin operating as part of the given “speaker pair” with at least a second Google Audio Player of the same model as the first Google Audio Player. <i>See, e.g.</i>, Ex. 69 (“When two speakers are paired, your Assistant lives and responds on the left speaker. To use your Assistant on the right speaker, unpair the speakers using the steps below. Then you can use your Assistant on both speakers.”) (emphasis in original); Ex. 132.</p>
<p>(i) determine that either (a) the playback device is not paired with the one or more other playback devices or (b) that the playback device is paired with the one or more</p>	<p>Each of the foregoing Google Audio Player comprises program instructions that, when executed by the Google Audio Player’s one or more processors, cause the Google Audio Player to (i) determine that either (a) the Google Audio Player is not paired with the one or more other Google Audio Players or (b) that the Google Audio Player is paired with the one or more other Google Audio Players such that the Google Audio Player and the one or more other Google Audio Players have the different playback</p>

1	Claim 1	Google
<p>2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28</p>	<p>other playback devices such that the playback device and the one or more other playback devices have the different playback roles, (ii) configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices, and (iii) change the configuration of the playback device by configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices.</p>	<p>roles, (ii) configure the Google Audio Player to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the Google Audio Player has determined it is not paired with the one or more other Google Audio Players, and (iii) change the configuration of the Google Audio Player by configuring the Google Audio Player to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the Google Audio Player has determined it is paired with the one or more other Google Audio Players.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to operate as part of a “speaker pair” configuration or not as part of such a configuration. <i>See, e.g.</i>, Ex. 69 (“Pair the speakers Unpair speakers”); Ex. 132.</p> <p>Moreover, each of the foregoing Google Audio Players is programmed with the capability to determine whether it is “paired” or not at various times, including but not limited to when the Google Audio Player receives an instruction to begin or stop operating as part of a “speaker pair” with another Google Audio Player, when the Google Audio Player is performing certain functions in accordance with its current “pairing type,” and/or when the Google Audio Player powers up. <i>See, e.g., id.</i></p> <p>Further, each of the foregoing Google Audio Players is programmed with the capability to change how it processes audio data received over Wi-Fi (including but not limited to its channel output) when it is “paired” versus when it is not “paired”. <i>See, e.g.</i>, Ex. 69 (“Pair the speakers Unpair speakers”); Ex. 132.</p> <p>As one example to illustrate, as discussed above, each of the foregoing Google Audio Players is programmed with the capability to operate as part of a “speaker pair” configuration or not as part of such a configuration.</p>

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Claim 1	Google
	<p>When not in a “speaker pair” configuration, the Google Audio Player is configured to perform a first processing of audio data so as to output two-channel audio (e.g., both the left and right channels of audio) from its one or more speaker drivers. <i>See, e.g.</i>, Ex. 69, Ex. 132. On the other hand, when in a “speaker pair” configuration, the Google Audio Player is configured to perform a second processing of audio data so as to output one-channel audio (e.g., only the left or right channel of audio) from its one or more speaker drivers. <i>See, e.g., id.</i></p>

344. Additionally and/or alternatively, Google has indirectly infringed and continues to indirectly infringe one or more of the claims of the '025 Patent, in violation of 35 U.S.C. § 271(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the '025 Patent. In particular, (a) Google had actual knowledge of the '025 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the '025 Patent by promoting, advertising, and instructing customers and potential customers about the Google Wireless Audio System and uses of the system, including infringing uses (*see* Exs. 67-70, Ex. 132), (c) Google knows (or should know) that its actions will induce users of the Google Wireless Audio System to directly infringe one or more claims the '025 Patent, and (d) users of the Google Wireless Audio System directly infringe one or more claims of the '025 Patent. For instance, at a minimum, Google has supplied and continues to supply the Google Audio Players to customers while knowing that use of this product will infringe one or more claims of the '025 Patent and that Google’s customers then directly infringe one

1 or more claims of the '025 Patent by using these Google Audio Players in
2 accordance with Google's product literature. *See, e.g., id.*

3 345. Additionally and/or alternatively, Google has indirectly infringed and
4 continues to indirectly infringe one or more of the claims of the '025 Patent, in
5 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
6 States, and/or importing into the United States, components in connection with the
7 Google Wireless Audio System that contribute to the direct infringement of
8 the '025 Patent by users of the Google Wireless Audio System. In particular, (a)
9 Google had actual knowledge of the '025 Patent or was willfully blind to its
10 existence prior to (at least as early as August 13, 2021), and no later than, the
11 filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers
12 for sale, sells, and/or imports, in connection with the Google Wireless Audio
13 System, one or more material components of the invention of the '025 Patent that
14 are not staple articles of commerce suitable for substantial noninfringing use, (c)
15 Google knows (or should know) that such component(s) were especially made or
16 especially adapted for use in an infringement of the '025 Patent, and (d) users of
17 devices that comprise such material component(s) directly infringe one or more
18 claims of the '025 Patent. For instance, at a minimum, Google offers for sale,
19 sells, and/or imports software updates for Google Audio Players that meet one or
20 more claims of the '025 Patent. *See, e.g., Exs. 67-70, 85, Ex. 132.* These
21 software updates are material components of the Google Audio Players that meet
22 the one or more claims of the '025 Patent. Further, Google especially made
23 and/or adapted these software updates for use in the Google Audio Players that
24 meet the one or more claims of the '025 Patent, and these software updates are not
25 staple articles of commerce suitable for substantial noninfringing use. Google's
26 customers then directly infringe the one or more claims of the '025 Patent by
27 installing and using software updates on the Google Audio Players.

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1 346. Google’s infringement of the ’025 Patent is also willful because
2 Google (a) had actual knowledge of the ’025 Patent or was willfully blind to its
3 existence prior to (at least as early as August 13, 2021), and no later than, the
4 filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in
5 the aforementioned activity despite an objectively high likelihood that Google’s
6 actions constituted infringement of the ’025 Patent, and (c) this
7 objectively-defined risk was either known or so obvious that it should have been
8 known to Google.

9 347. Additional allegations regarding Google’s pre-suit knowledge of
10 the ’025 Patent and willful infringement will likely have evidentiary support after
11 a reasonable opportunity for discovery.

12 348. Sonos is in compliance with any applicable marking and/or notice
13 provisions of 35 U.S.C. § 287 with respect to the ’025 Patent.

14 349. Sonos is entitled to recover from Google all damages that Sonos has
15 sustained as a result of Google’s infringement of the ’025 Patent, including,
16 without limitation, a reasonable royalty and lost profits.

17 350. Google’s infringement of the ’025 Patent was and continues to be
18 willful and deliberate, entitling Sonos to enhanced damages.

19 351. Google’s infringement of the ’025 Patent is exceptional and entitles
20 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
21 U.S.C. § 285.

22 352. Google’s infringement of the ’025 Patent has caused irreparable
23 harm (including the loss of market share) to Sonos and will continue to do so
24 unless enjoined by this Court.

25 **COUNT X: INFRINGEMENT OF U.S. PATENT NO. 10,541,883**

26 353. Sonos incorporates by reference and re-alleges paragraphs 85-93 and
27 233-244 of this Second Amended Complaint as if fully set forth herein.
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1 354. Google and/or users of the Google Wireless Audio System have
 2 directly infringed (either literally or under the doctrine of equivalents) and
 3 continue to directly infringe one or more of the claims of the '883 Patent, in
 4 violation of 35 U.S.C. § 271(a), by making, using, offering for sale, and/or selling
 5 the Google Wireless Audio System within the United States and/or importing the
 6 Google Wireless Audio System into the United States without authority or
 7 license.

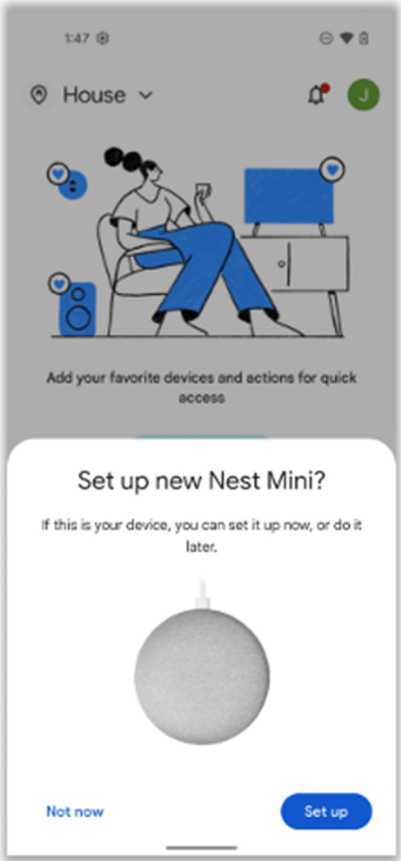
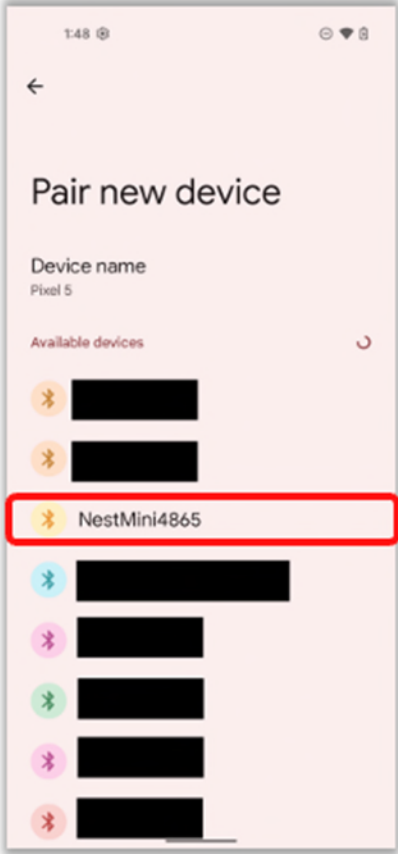
8 355. As just one non-limiting example, set forth below is an exemplary
 9 infringement claim chart for claim 1 of the '883 Patent in connection with the
 10 Google Wireless Audio System. This claim chart is based on publicly available
 11 information. Sonos reserves the right to modify this claim chart, including, for
 12 example, on the basis of information about the Google Wireless Audio System
 13 that it obtains during discovery.

Claim 1	Google
1. A playback device comprising:	At least each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point comprises a “playback device,” as recited in claim 1. At least each smartphone, tablet, and computer installed with the Google Home app (where a computing device installed with Google Home app is referred to herein as a “Chromecast-enabled computing device”) comprises a “computing device,” as recited in claim 1.
a network interface that is configured to provide an interconnection with at least one data network;	Each of the foregoing Google Audio Players includes a network interface that is configured to provide an interconnection with at least one data network, such as a Wi-Fi interface. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.
at least one processor;	Each of the foregoing Google Audio Players includes at least one processor. <i>See, e.g.</i> , Exs. 68, 95-98, 111-113.

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Claim 1	Google
<p>a non-transitory computer-readable medium; and</p> <p>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:</p>	<p>Each of the foregoing Google Audio Players includes a non-transitory computer-readable medium and program instructions stored on the non-transitory computer-readable medium that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to perform the functions identified below. <i>See, e.g.</i>, Exs. 68, 85, 95-98, 111-113.</p>
<p>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;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to detect a triggering event that causes the Google Audio Player to enter a setup mode in which Google Audio Player transmits at least a first message indicating that the Google Audio Player is available for setup.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to detect a triggering event, such as the Google Audio Player being powered on for the first time out of the box or being factory reset, that causes the Google Audio Player to enter a setup mode in which the Google Audio Player transmits a message indicating that the Google Audio Player is available for setup (e.g., a Bluetooth advertisement message).</p> <p>This functionality is evidenced by the exemplary screenshots below.</p>

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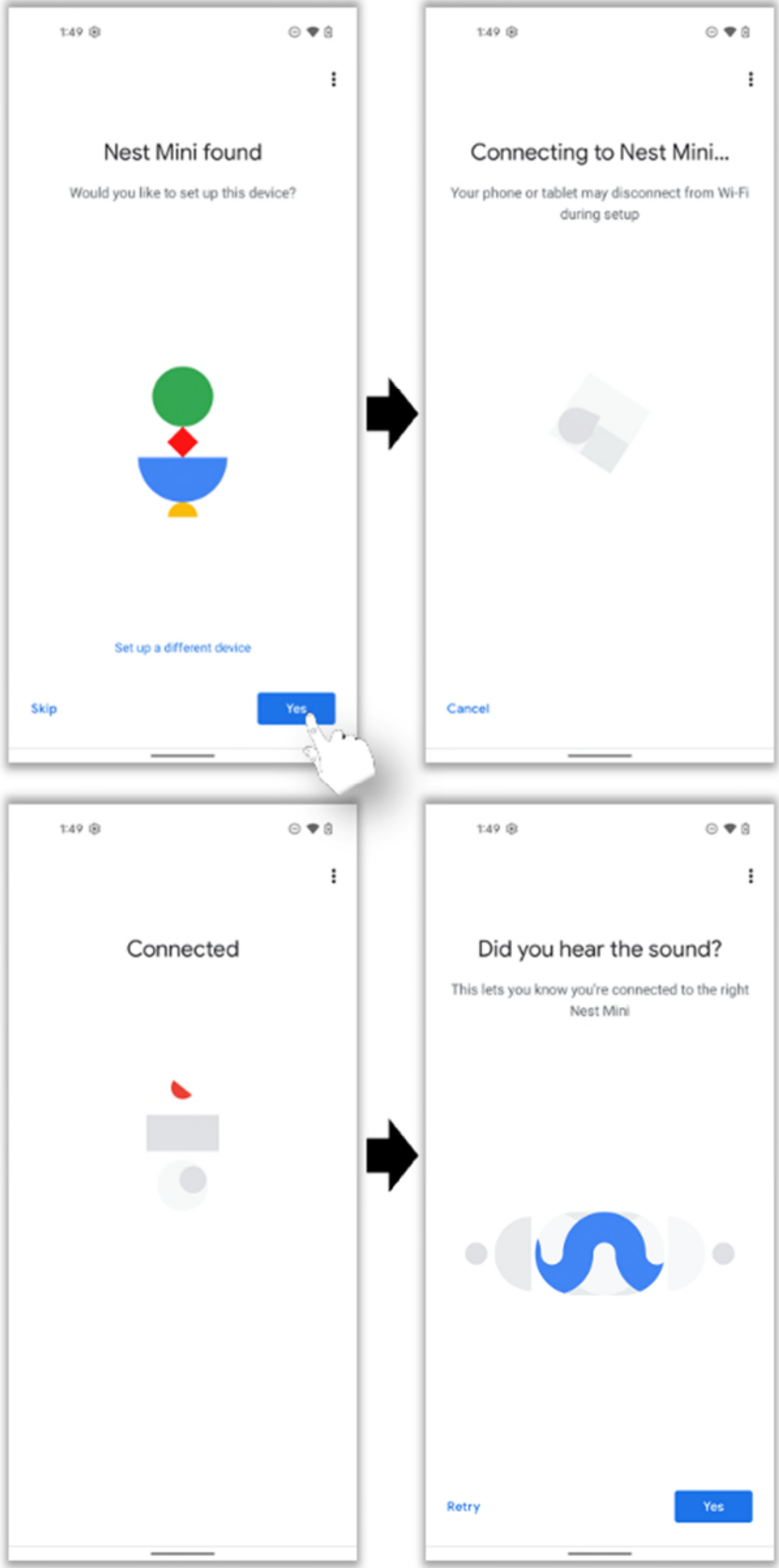
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Claim 1	Google
	<p><i>See also, e.g., Ex. 101</i> (“1. Plug in Google Home. . . . 7. Scanning for Google Home devices: The Google Home app scans for nearby devices that are plugged in and ready to set up. Tap the home you want to add the device to > Next.”); <i>Ex. 135</i> (“What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on. . . . 1. Plug in your Nest speaker or display. •If the device has been used before, factory reset your speaker or display before you continue.”); <i>Ex. 136</i>.</p>
<p>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 computing device does not traverse the access point;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player’s at least one processor, cause the Google Audio Player to, while in the setup mode, receive a response to the first message that facilitates establishing an initial communication path with a Chromecast-enabled computing device that is installed with an application for controlling the playback device, where the Chromecast-enabled 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.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to be set up and controlled on a secure local Wi-Fi network (which is a WLAN) that is defined by an access point (e.g., a router) with the assistance of a Chromecast-enabled computing device that is running the Google Home app and that is communicatively coupled to the secure local Wi-Fi network. <i>See, e.g., Ex. 101</i> (“The Google Home app will walk you through the steps to set up Google Home. . . . Choose the Wi-Fi network you want to connect to your device. . . . Access your music and movie services.”); <i>Ex. 135</i> (“The Google Home app  will walk you through the steps to set up your Google Nest or Home speaker or display. . . . Important: Make sure your setup device is connected to the Wi-Fi network you want to connect your Nest speaker or display to.”); <i>Exs. 80, 102, 10, 136</i>.</p>

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Claim 1	Google
	<p>In this regard, each of the foregoing Google Audio Players is programmed with the capability to, while in a setup mode, receive a response to a message transmitted by the Google Audio Player indicating that the Google Audio Player is available for setup, where the response facilitates establishing an initial communication path with a Chromecast-enabled computing device that is running the Google Home app and that is communicatively coupled to a secure local Wi-Fi network that is defined by an access point, and where the initial communication path is established directly between the Google Audio Player and the Chromecast-enabled computing device (<i>e.g.</i>, via Bluetooth), as opposed to traversing the access point for the secure local Wi-Fi network. <i>See, e.g.</i>, Ex. 101 (“8. Connecting to your new device: The app will now connect your phone to your new Google Home so that you can configure it. Note: You will be prompted with the following notification during this step, ‘Your phone may disconnect from Wi-Fi during setup’. 9. Making a connection: We’ll play a sound on the device to make sure you’re setting up the right device. When you hear the sound, tap Yes.”); Ex. 135 (“What you need to get started[:] . . . An Android phone or tablet that . . . [h]as Bluetooth turned on.”); Ex. 136.</p> <p>This functionality is evidenced by the exemplary screenshots below.</p>

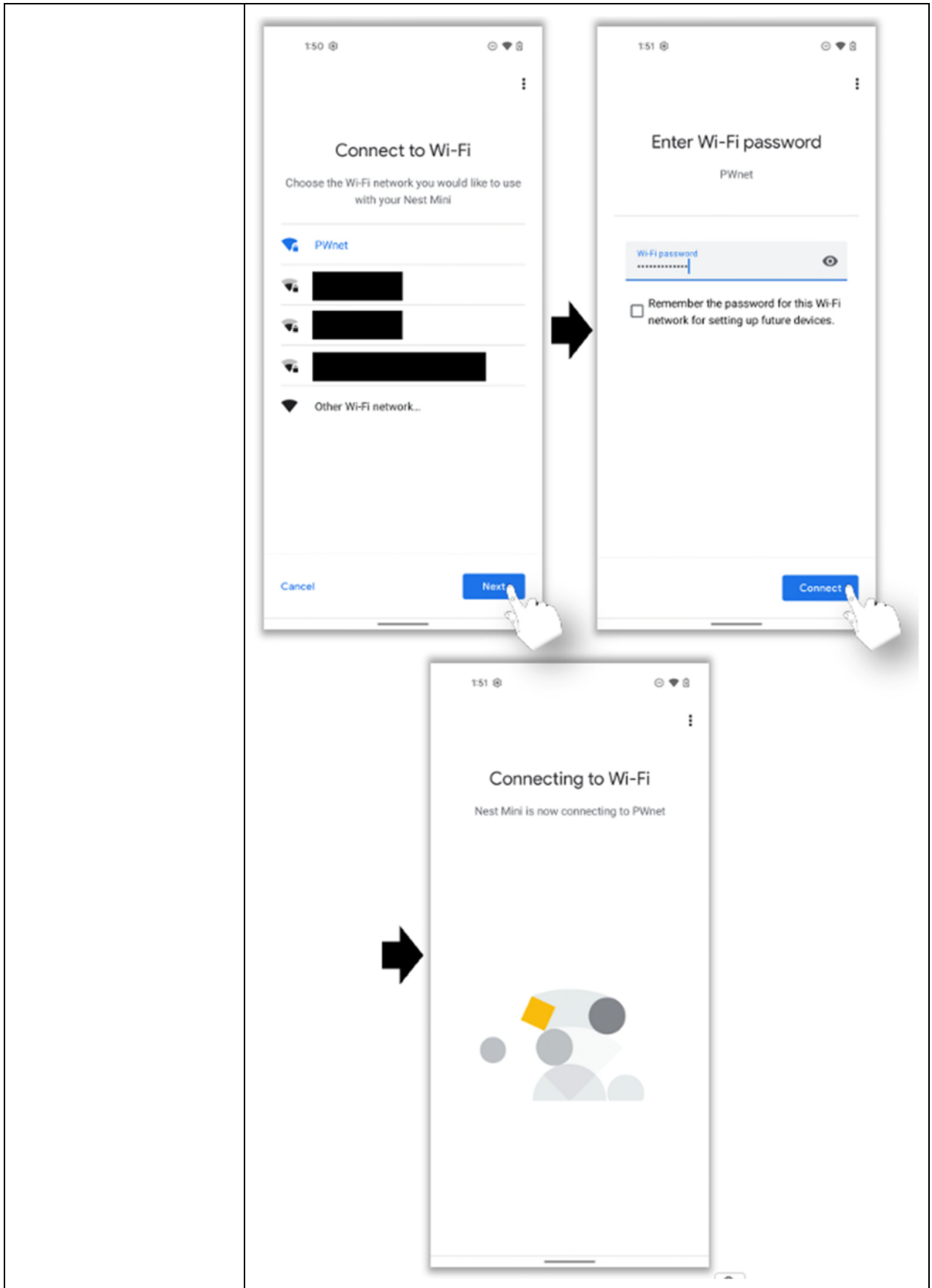
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Claim 1	Google
	

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Claim 1	Google
<p>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;</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player's at least one processor, cause the Google Audio Player to receive, from the Chromecast-enabled computing device 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.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to, after establishing an initial communication path with a Chromecast-enabled computing device, receive, from the Chromecast-enabled computing device via the initial communication path, one or more messages containing network configuration parameters for the secure local Wi-Fi network that include an identifier of the secure local Wi-Fi network and a security key for the secure local Wi-Fi network.</p> <p>This functionality is evidenced by the exemplary screenshots below.</p>

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Claim 1	Google
	<p><i>See also, e.g., Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”).</i></p>
<p>using the network configuration parameters to connect to the secure WLAN that is defined by the access point; and</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player’s at least one processor, cause the Google Audio Player to use the network configuration parameters to connect to the secure WLAN that is defined by the access point.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to, after receiving network configuration parameters for a secure local Wi-Fi network that is defined by an access point, use the network configuration parameters to connect to the secure local Wi-Fi network.</p> <p>This functionality is evidenced by the exemplary screenshots below.</p>




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Claim 1	Google
	<p>See also, e.g., Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap</p>

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Claim 1	Google
	OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”).
<p>transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point.</p>	<p>Each of the foregoing Google Audio Players comprises program instructions that, when executed by the Google Audio Player’s at least one processor, cause the Google Audio Player to transition from communicating with the Chromecast-enabled computing device via the initial communication path to communicating with the Chromecast-enabled computing device via the secure WLAN that is defined by the access point.</p> <p>For instance, each of the foregoing Google Audio Players is programmed with the capability to, after using network configuration parameters received from a Chromecast-enabled computing device via an initial communication path to connect to a secure local Wi-Fi network that is defined by an access point, transition from communicating with the Chromecast-enabled computing device via the initial communication path to communicating with the Chromecast-enabled computing device via the secure local Wi-Fi network. <i>See, e.g.</i>, Ex. 101 (“13. Wi-Fi connection: Choose the Wi-Fi network you want to connect to your device. . . . Tap OK to use the password you have saved in your phone [or] [t]o manually enter the password, tap Enter manually > type in password > Connect.”).</p> <p>As illustrative examples, after the Google Audio Player transitions from communicating with the Chromecast-enabled computing device via the initial communication path to communicating with the Chromecast-enabled computing device via the secure local Wi-Fi network, the Google Audio Player is capable of receiving commands from the Chromecast-enabled computing device via the secure local Wi-Fi network, such as a command for the Google Audio Player to adjust its audio volume or a command for the Google Audio Player to retrieve audio content for playback from an Internet-based audio service (<i>e.g.</i>, YouTube Music, Spotify, Pandora, Google Play Music, Deezer, TuneIn, iHeartRadio, etc.) that in turn</p>

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Claim 1	Google
	<p>causes the Google Audio Player to retrieve the audio content from the Internet-based audio service via a communication path including the secure local Wi-Fi network and the Internet. <i>See, e.g.</i>, Ex. 30 (“Other ways to control music . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is connected to the same Wi-Fi as your speaker or display. 2. Open the Google Home app . 3. Tap Play music under the name of the device that you want to use. Your device will play music from your default music provider. You can pause, resume, change volume and skip forward or backward in the song.”) (emphasis in original); Ex. 101 (“Media services: Access your music and movie services. . . . Default music service: If you have more than one music service linked, you will be asked to select a Default music service: Tap the service you want to use as default > Next.”); Ex. 124 (“Other ways to control music . . . You can also start and control music from the Google Home app. . . . From the Google Home app[:] 1. Make sure your mobile device or tablet is linked to the same account as your speaker or display. 2. Open the Google Home app . 3. Tap Favorites . Tap the current media session for: •Playback controls •Volume control (media and Google Assistant) •Playback device selection”); Exs. 104, 105.</p>

356. Additionally and/or alternatively, Google 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(b), by actively inducing users of the Google Wireless Audio System to directly infringe the one or more claims of the ’883 Patent. In particular, (a) Google had actual knowledge of the ’883 Patent or was willfully blind to its existence prior to (at least as early as August 13, 2021), and no later than, the filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google intentionally causes, urges, or encourages users of the Google Wireless Audio System to directly infringe one or more claims of the ’883 Patent by

1 promoting, advertising, and instructing customers and potential customers about
2 the Google Wireless Audio System and uses of the system, including infringing
3 uses (*see* Exs. 34, 35, 79, 80, 101, 135, 136), (c) Google knows (or should know)
4 that its actions will induce users of the Google Wireless Audio System to directly
5 infringe one or more claims the '883 Patent, and (d) users of the Google Wireless
6 Audio System directly infringe one or more claims of the '883 Patent. For
7 instance, at a minimum, Google has supplied and continues to supply Google
8 Audio Players to customers while knowing that use of these products will infringe
9 one or more claims of the '883 Patent and that Google's customers then directly
10 infringe one or more claims of the '883 Patent by using these Google Audio
11 Players in accordance with Google's product literature. *See, e.g., id.*

12 357. Additionally and/or alternatively, Google has indirectly infringed and
13 continues to indirectly infringe one or more of the claims of the '883 Patent, in
14 violation of 35 U.S.C. § 271(c), by offering to sell or selling within the United
15 States, and/or importing into the United States, components in connection with the
16 Google Wireless Audio System that contribute to the direct infringement of
17 the '883 Patent by users of the Google Wireless Audio System. In particular, (a)
18 Google had actual knowledge of the '883 Patent or was willfully blind to its
19 existence prior to (at least as early as August 13, 2021), and no later than, the
20 filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) Google offers
21 for sale, sells, and/or imports, in connection with the Google Wireless Audio
22 System, one or more material components of the invention of the '883 Patent that
23 are not staple articles of commerce suitable for substantial noninfringing use, (c)
24 Google knows (or should know) that such component(s) were especially made or
25 especially adapted for use in an infringement of the '883 Patent, and (d) users of
26 devices that comprise such material component(s) directly infringe one or more
27 claims of the '883 Patent. For instance, at a minimum, Google offers for sale,
28 sells, and/or imports software updates for Google Audio Players that meet one or

1 more claims of the '883 Patent. *See, e.g.*, Ex. 34, 35, 79, 80, 101, 135, 136, 85.
2 These software updates are material components of the Google Audio Players that
3 meet the one or more claims of the '883 Patent. Further, Google especially made
4 and/or adapted these software updates for use in the Google Audio Players that
5 meet the one or more claims of the '883 Patent, and these software updates are not
6 staple articles of commerce suitable for substantial noninfringing use. Google's
7 customers then directly infringe the one or more claims of the '883 Patent by
8 installing and using software updates on the Google Audio Players.

9 358. Google's infringement of the '883 Patent is also willful because
10 Google (a) had actual knowledge of the '883 Patent or was willfully blind to its
11 existence prior to (at least as early as August 13, 2021), and no later than, the
12 filing of this Second Amended Complaint (*see* ¶¶ 38-71 above), (b) engaged in
13 the aforementioned activity despite an objectively high likelihood that Google's
14 actions constituted infringement of the '883 Patent, and (c) this
15 objectively-defined risk was either known or so obvious that it should have been
16 known to Google.

17 359. Additional allegations regarding Google's pre-suit knowledge of
18 the '883 Patent and willful infringement will likely have evidentiary support after
19 a reasonable opportunity for discovery.

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

22 361. Sonos is entitled to recover from Google all damages that Sonos has
23 sustained as a result of Google's infringement of the '883 Patent, including,
24 without limitation, a reasonable royalty and lost profits.

25 362. Google's infringement of the '883 Patent was and continues to be
26 willful and deliberate, entitling Sonos to enhanced damages.

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1 363. Google’s infringement of the ’883 Patent is exceptional and entitles
2 Sonos to attorneys’ fees and costs incurred in prosecuting this action under 35
3 U.S.C. § 285.

4 364. Google’s infringement of the ’883 Patent has caused irreparable
5 harm (including the loss of market share) to Sonos and will continue to do so
6 unless enjoined by this Court.

7 **PRAYER FOR RELIEF**

8 365. WHEREFORE, Sonos respectfully requests:

9 366. That Judgment be entered that Google has infringed at least one or
10 more claims of the patents-in-suit, directly and/or indirectly, literally and/or under
11 the doctrine of equivalents, and that such infringement is willful;

12 367. An injunction enjoining Google, its officers, agents, servants,
13 employees and attorneys, and other persons in active concert or participation with
14 Google, and its parents, subsidiaries, divisions, successors and assigns, from
15 further infringement of the ’014 Patent, the ’959 Patent, the ’715 Patent, the ’896
16 Patent, the ’001 Patent, the ’025 Patent, and the ’883 Patent.

17 368. An award of damages sufficient to compensate Sonos for Google’s
18 infringement under 35 U.S.C. § 284, including an enhancement of damages on
19 account of Google’s willful infringement;

20 369. That the case be found exceptional under 35 U.S.C. § 285 and that
21 Sonos be awarded its reasonable attorneys’ fees;

22 370. Costs and expenses in this action;

23 371. An award of prejudgment and post-judgment interest; and

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

25 **DEMAND FOR JURY TRIAL**

26 Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Sonos
27 respectfully demands a trial by jury on all issues triable by jury.

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Dated: November 26, 2024

Respectfully submitted,

ORRICK HERRINGTON & SUTCLIFFE LLP
and
LEE SULLIVAN SHEA & SMITH LLP

By: /s/ Alyssa Caridis
ALYSSA CARIDIS
Attorneys for Plaintiff Sonos, Inc.