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UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

SONOS, INC., Plaintiff, v. GOOGLE LLC, Defendant.	Case No. 2:20-cv-00169-JAK (DFMx) **SONOS, INC.'S CORRECTED DISCLOSURE OF ASSERTED CLAIMS AND INFRINGEMENT CONTENTIONS** **JURY TRIAL DEMANDED**

Pursuant to the parties' agreement and Standing Patent Rule (S.P.R.) 2.1, Plaintiff Sonos, Inc. ("Sonos") hereby submits this Disclosure of Asserted Claims and Infringement Contentions for U.S. Patent Nos. 7,571,014 (the "'014 Patent"), 8,588,949 (the "'949 Patent"), 9,195,258 (the "'258 Patent"), 9,219,959 (the "'959 Patent"), 10,031,715 (the "'715 Patent"), 10,209,953 (the "'953 Patent"), 10,439,896 (the "'896 Patent"), 10,541,883 (the "'883 Patent"), 10,966,025 (the "'025 Patent"), and 11,080,001 (the "'001 Patent") (collectively, "the Asserted Patents").

Sonos bases these contentions on the publicly available information known to Sonos as of the date of these contentions. Sonos has not yet begun, much less completed, its non-public investigation, collection of information, discovery, or analysis relating to this action, and additional discovery, including discovery from Google and third parties, may lead Sonos to further amend, revise, and/or supplement these contentions. Indeed, the accused functionalities of the accused instrumentalities are implemented, at least in part, by proprietary and specialized electronics, firmware, and/or other software, and the precise designs, processes, and algorithms used to perform the accused functionalities are held secret, at least in part, and are not publicly available in their entirety. As such, an analysis of non-publicly-available documentation and source code, including that of Google and/or third-parties may be necessary to fully and accurately describe every infringing functionality.

For at least these reasons, Sonos specifically reserves the right to further amend, revise, and/or supplement these contentions and/or accompanying exhibits (including but not limited to adding and/or dropping asserted claims) in accordance with any Orders of record in this matter, S.P.R. 4.1, and Federal Rule of Civil Procedure 26(e), as additional documents and information become available and as discovery and investigation proceed. Sonos also reserves the right to supplement, modify or amend these contentions to include additional products or services made, used, sold, or offered for sale in or imported into the United States by Google.

The information in these contentions is not an admission regarding the scope of any claims or the proper construction of those claims or any terms contained therein. Google has not indicated whether it intends to advance in this case any construction of any claim pursuant to

S.P.R. 3.4. In the event Google advances any constructions under S.P.R. 3.4, Sonos reserves the right to revise or supplement these contentions to address such a construction.

I. Disclosure of Asserted Claims & Infringement Contentions

A. Identification of Asserted Claims Pursuant to S.P.R. 2.1.1

Based on the public information currently in its possession, Sonos asserts the following claims (collectively, the "Asserted Claims") literally and/or under the Doctrine of Equivalents. Sonos expressly reserves the right to amend and/or supplement its identification of Asserted Claims should discovery (including Google's technical documentation, source code, and witnesses) reveal additional, relevant information.

U.S. Patent No.	Asserted Claims	35 U.S.C. § 271 Subsection(s)
7,571,014	25, 32, 35, 38, 42, 43	§ 271(a), (b), (c), (f)(1), (f)(2)
8,588,949	1, 2, 4, 5, 8, 9, 11, 12	§ 271(a), (b), (c), (f)(1), (f)(2)
9,195,258	17, 21, 22, 23, 24, 26	§ 271(a), (b), (c), (f)(1), (f)(2)
9,219,959	5, 10, 29	§ 271(a), (b), (c), (f)(1), (f)(2)
10,031,715	7, 9, 11, 13, 15, 17	§ 271(a), (b), (c), (f)(1), (f)(2)
10,209,953	7, 8, 12, 13, 14, 18, 22, 23, 24, 25, 28, 29, 30	§ 271(a), (b), (c), (f)(1), (f)(2)
10,439,896	1, 5, 6, 8, 9, 12, 13, 15, 17, 18	§ 271(a), (b), (c), (f)(1), (f)(2)
10,541,883	1, 2, 4, 5, 9, 10, 11, 13, 14, 15, 16, 17, 19	§ 271(a), (b), (c), (f)(1), (f)(2)
10,966,025	1, 10, 12, 13, 18	§ 271(a), (b), (c), (f)(1), (f)(2)
11,080,001	12, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25, 28, 29, 30, 31, 32, 33	§ 271(a), (b), (c), (f)(1), (f)(2)

Although not expressly called for by the Standing Patent Rules, Sonos identifies specific, example acts of infringement for each Asserted Patent below.

B. Identification of Accused Instrumentalities Pursuant to S.P.R. 2.1.2

The accused products include various "**Cast-enabled media player**s" that Google has branded as Chromecast, Home, and/or Nest products, including the Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, Google TV Streamer (4K), Pixel Tablet with the Charging Speaker Dock, Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, and Nest Wifi Point.

Each of these Cast-enabled media players is a data network device equipped with a physical component that provides an interconnection with a data network, such as a Wi-Fi and/or Ethernet interface that provides an interconnection with a Wi-Fi and/or Ethernet network. Each of these Cast-enabled media players is also configured to process and output audio. In this respect, each Chromecast, Chromecast Ultra, Chromecast Audio, Chromecast with Google TV, and Google TV Streamer (4K) can connect with and output audio to an external audio device that has speaker drivers, such as a TV. Each Home Mini, Nest Mini, Home, Home Max, Home Hub, Nest Hub, Nest Hub Max, Nest Audio, Nest Wifi Point, and Pixel Tablet with the Charging Speaker Dock contains one or more speaker drivers from which it outputs sound. Thus, each Cast-enabled media player amounts to a "zone player" or "playback device" of the Asserted Patents.

The accused products also include user devices, including Google's own "Pixel" smartphone, tablet, and other computer devices (e.g., the Pixel, Pixel XL, Pixel 2, Pixel 2 XL, Pixel 3, Pixel 3 XL, Pixel 3a, Pixel 3a XL, Pixel 4, Pixel 4 XL, Pixel 4a, Pixel 4a (5G), Pixel 5, Pixel 5a (5G), 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), as well as third-party smartphone, tablet, and other computer devices, installed with one or more "**accused apps**," including the Google Home, YouTube Music, and Google Play Music apps, that can be used to set up and/or control Cast-enabled media players on a data network. Such a user device will be referred to as a "**Cast-enabled controller**."

In addition to being an intelligent, network-enabled media player, each Nest/Home Hub and Nest Hub Max comprises a display screen and is provisioned with programming that enables the device to control other Cast-enabled media players on a data network (such a product may be referred to as a "**Cast-enabled display**" installed with Cast-enabled display software). Thus, in addition to being a Cast-enabled media player, each Cast-enabled display can serve as a Cast-enabled controller for one or more other Cast-enabled media players.

In practice, a user can set up a Cast-enabled media system to include any combination of

one or more Cast-enabled media players that are connected to the same local data network (e.g., such as the user's home Wi-Fi network), and the user can then control that Cast-enabled media system using one or more Cast-enabled controllers that are connected to that same local data network.

On information and belief, in developing and updating the functionality of the Cast-enabled media players and accused apps, Google has stored and continues storing in the memory of one or more servers (or other computers) located in the United States program instructions embodying such functionality (e.g., program instructions for the Cast-enabled media player's firmware or for the accused apps app-software). Relatedly, on information and belief, to facilitate (i) making accused apps available to users for download onto their user devices, (ii) making firmware and/or other software available for installation onto Cast-enabled media players, and (iii) providing software updates (e.g., for firmware and/or app-software) to Cast-enabled media players and accused apps, Google has stored and continues storing in the memory of one or more servers (or other computers) located in the United States program instructions for such software packages. Such a server (or other computer) will be referred to herein as a "**Google Software Server**."

On January 7, 2020, Sonos initiated this action against Google and originally asserted the '949, '258, '959, '953, and '883 Patents (the "Original Patents"). In the parallel ITC investigation, the ITC found Google liable for infringing each of the Original Patents, and so, Google released purported "redesigns" for each of the Original Patents ostensibly by January 6, 2022. *See, e.g.*, Ex. 134 [Inv. No. 337-TA-1191 Initial Determination – Public Version]; Inv. No. 337-TA-1191, ID 759893 [Final Determination], ID 759897 [Limited Exclusion Order], ID 759899 [Cease and Desist Order]. Also, a number of the Original Patents expired after Sonos initiated this action, including the '949, '258, and '953 Patents. For simplicity, reference herein by Sonos to "each" Cast-enabled media player, Cast-enabled controller, or Google Software Server refers to each such device (regardless of version or generation) that existed during the term of the given Asserted Patent and/or each such device (regardless of version or generation) comprising (i) program instructions (e.g., firmware or other software) embodying Google's

original infringing technology or (ii) program instructions (e.g., firmware or other software) embodying Google's purported redesign technology, unless noted otherwise. Likewise, reference herein to an accused app, software, or firmware (or a version thereof) refers to each version of such app, software, or firmware that existed during the term of the given Asserted Patent, unless noted otherwise. In this regard, with respect to the '014 and '949 Patents, "pre-redesign" refers to Android versions of the Google Home app and versions of the Cast-enabled display software that were released before Google implemented its purported redesign for the '949 Patent (removing group-volume control functionality), and "post-redesign" refers to Android versions of the Google Home app and versions of the Cast-enabled display software that were released after Google dropped its purported redesign for the '949 Patent and added back group-volume control functionality (which appears to be sometime after the '949 Patent expired).

Based on the public information currently in its possession, Sonos contends that the Asserted Patents are infringed by Google via, either individually or in combination, the following products (individually, "**Accused Instrumentality**" or collectively, "**Accused Instrumentalities**"):

'014 Patent:

- *All Asserted Claims:* each Cast-enabled controller installed with a pre- or post-redesign Android version of the Google Home app or an iOS version of the Google Home app.
- *Asserted Claims 25, 32:* (a) each Cast-enabled controller installed with a pre- or post-redesign Android version of the Google Home app, an iOS version of the Google Home app, an Android or iOS version of the YouTube Music app, and/or an Android or iOS version of the Google Play Music app; and (b) each Cast-enabled display installed with a pre- or post-redesign version of the Cast-enabled display software.
- *Asserted Claims 35:* each Cast-enabled controller installed with a pre- or post-redesign Android version of the Google Home app or an iOS version of the Google Home app.
- *Asserted Claims 38, 42, 43:* (a) each Cast-enabled controller installed with a pre- or

post-redesign Android version of the Google Home app, an iOS version of the Google Home app, an Android or iOS version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players, and/or an Android or iOS version of the Google Play Music app; and (b) each Cast-enabled display installed with a pre- or post-redesign version of the Cast-enabled display software.

'949 Patent:

- *All Asserted Claims:* each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app
- *Asserted Claims 1, 4:* (a) each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app, an iOS version of the Google Home app, an Android or iOS version of the YouTube Music app, and/or an Android or iOS version of the Google Play Music app; and (b) each Cast-enabled display installed with a pre-redesign version of the Cast-enabled display software.
- *Asserted Claim 2:* (a) each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app; and (b) each Cast-enabled display installed with a pre-redesign version of the Cast-enabled display software.
- *Asserted Claim 5:* each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app.
- *Asserted Claims 8, 11:* (a) each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app, an iOS version of the Google Home app, an Android or iOS version of the YouTube Music app, and/or an Android or iOS version of the Google Play Music app; (b) each Cast-enabled display installed with a pre-redesign version of the Cast-enabled display software; and (c) each Google Software Server.
- *Asserted Claim 9:* (a) each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app;

(b) each Cast-enabled display installed with a pre-redesign version of the Cast-enabled display software; and (c) each Google Software Server.

- *Asserted Claim 12:* (a) each Cast-enabled controller installed with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app; and (b) each Google Software Server.

'258 Patent:

- *All Asserted Claims:* each Cast-enabled media player.

'959 Patent:

- *All Asserted Claims:* each Home Max and Nest Audio player provisioned with firmware embodying Google's original infringing technology (referred to herein as a "'959 Cast-enabled media player").

'715 Patent:

- *All Asserted Claims*: each Cast-enabled media player.
- *Asserted Claims 13, 15, 17:* (a) each Cast-enabled media player; and (b) each Google Software Server.

'953 Patent:

- *All Asserted Claims*: each Cast-enabled media player provisioned with firmware embodying Google's original infringing technology (referred to herein as a "'953 Cast-enabled media player").
- *Asserted Claims 25, 28, 29, 30:* (a) each '953 Cast-enabled media player; and (b) each Google Software Server.

'896 Patent:

- *All Asserted Claims*: each Cast-enabled controller installed with the Google Home app.
- *Asserted Claims 13, 15, 17, 18*: (a) each Cast-enabled controller installed with the Google Home app; and (b) each Google Software Server.

'883 Patent:

- *All Asserted Claims*: each Cast-enabled media player.

- *Asserted Claims 14, 15, 16, 17, 19*: (a) each Cast-enabled media player; and (b) each Google Software Server.

'025 Patent:

- *All Asserted Claims*: each Home, Home Mini, Home Max, Nest Mini, and Nest Audio player (referred to herein as a "'025 Cast-enabled media player").
- *Asserted Claim 18*: (a) each '025 Cast-enabled media player; and (b) each Google Software Server.

'001 Patent:

- *Asserted Claims 12, 13, 14, 17, 18, 21*: each Cast-enabled media player.
- *Asserted Claim 19:* each Cast-enabled media player provisioned with firmware embodying Google's purported redesign technology.
- *Asserted Claims 20, 22:* each Cast-enabled media player provisioned with firmware embodying Google's original infringing technology.
- *Asserted Claims 23, 24, 25, 28, 29, and 32:* (a) each Cast-enabled media player; and (b) each Google Software Server.
- *Asserted Claim 30:* (a) each Cast-enabled media player provisioned with firmware embodying Google's purported redesign technology; and (b) each Google Software Server.
- *Asserted Claims 31, 33:* (a) each Cast-enabled media player provisioned with firmware embodying Google's original infringing technology; and (b) each Google Software Server.

C. Infringement Claim Charts Pursuant to S.P.R. 2.1.3

Based on the public information currently in its possession, Sonos provides the following exhibits[1] attached hereto, which specify where each limitation of each Asserted Claim is found within each Accused Instrumentality (whether literally or under the Doctrine of Equivalents):

Exhibit A: Infringement of '014 Patent

[1] An "Ex. [numeral]" citation in these infringement charts refer to an exhibit to Sonos's Second Amended Complaint (D.I. 68) unless noted otherwise.

Exhibit B: Infringement of ’949 Patent

Exhibit C: Infringement of ’258 Patent

Exhibit D: Infringement of ’959 Patent

Exhibit E: Infringement of ’715 Patent

Exhibit F: Infringement of ’953 Patent

Exhibit G: Infringement of ’896 Patent

Exhibit H: Infringement of ’883 Patent

Exhibit I: Infringement of ’025 Patent

Exhibit J: Infringement of ’001 Patent

Sonos identifies below specific, example acts of infringement for each Asserted Patent under 35 U.S.C. § 271(a), (b), (c), (f)(1), and (f)(2).

i. Direct Infringement Under 35 U.S.C. § 271(a)

’014 Patent: Google has directly infringed and continues to directly infringe claims 25 and 32 of the ’014 Patent at least by offering to sell, selling, and/or importing into the United States Cast-enabled controllers (e.g., Google’s Pixel devices) with an Android version of the YouTube Music app, an Android version of the Google Home App, and/or an Android version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon.

Google has also directly infringed and continues to directly infringe claims 38, 42, and 43 of the ’014 Patent at least by offering to sell, selling, and/or importing into the United States Cast-enabled controllers (e.g., Google’s Pixel devices) with an Android version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players and/or an Android version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon.

Google has directly infringed and continues to directly infringe each Asserted Claim of the ’014 Patent by virtue of installing a pre- or post-redesign Android version of the Google Home app or an iOS version of the Google Home app onto a Pixel smartphone, tablet, or other computer

device, or a third-party smartphone, tablet, or other computer device within the United States, which constitutes "mak[ing]" a Cast-enabled controller, which is an infringing device under 35 U.S.C. § 271(a).

Google has also directly infringed and continues to directly infringe claims 25 and 32 of the '014 Patent by virtue of installing an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app onto a Pixel smartphone, tablet, or other computer device, or a third-party smartphone, tablet, or other computer device within the United States, which constitutes "mak[ing]" a Cast-enabled controller, which is an infringing device under 35 U.S.C. § 271(a).

Google has directly infringed and continues to directly infringe claims 38, 42, and 43 of the '014 Patent by virtue of installing an Android or iOS version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players and/or an Android or iOS version of the Google Play Music app onto a Pixel smartphone, tablet, or other computer device, or a third-party smartphone, tablet, or other computer device within the United States, which constitutes "mak[ing]" a Cast-enabled controller, which is an infringing device under 35 U.S.C. § 271(a).

Further, on information and belief, Google has directly infringed and continues to directly infringe each Asserted Claim of the '014 Patent by virtue of testing Cast-enabled controllers with a pre- or post-redesign Android version of the Google Home app or an iOS version of the Google Home app installed thereon, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Further still, on information and belief, Google has directly infringed and continues to directly infringe claims 25 and 32 of the '014 Patent by virtue of testing Cast-enabled controllers with an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon within the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Further yet, on information and belief, Google has directly infringed and continues to

directly infringe claims 38, 42, and 43 of the ’014 Patent by virtue of testing Cast-enabled controllers with an Android or iOS version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players and/or an Android or iOS version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon within the United States, which constitutes “us[ing]” an infringing device under 35 U.S.C. § 271(a).

’949 Patent: Google has directly infringed (up to the ’949 Patent’s expiration) claims 1, 4, 8, and 11 of the ’949 Patent at least by offering to sell, selling, and/or importing into the United States Cast-enabled controllers (e.g., Google’s Pixel devices) with an Android version of the YouTube Music app, a pre-redesign Android version of the Google Home app, or an Android version of the Google Play Music app installed thereon.

Google has directly infringed claims 1, 2, 4, 8, 9, and 11 of the ’949 Patent at least by offering to sell, selling, and/or importing into the United States Cast-enabled displays with a pre-redesign version of the Cast-enabled display software installed thereon.

Google has also directly infringed each Asserted Claim of the ’949 Patent by virtue of installing a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app onto a Pixel smartphone, tablet, or other computer device, or a third-party smartphone, tablet, or other computer device within the United States, which constitutes “mak[ing]” a Cast-enabled controller, which is an infringing device under 35 U.S.C. § 271(a).

Google has directly infringed claims 1, 4, 8, and 11 of the ’949 Patent by virtue of installing an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app onto a Pixel smartphone, tablet, or other computer device, or a third-party smartphone, tablet, or other computer device within the United States, which constitutes “mak[ing]” a Cast-enabled controller, which is an infringing device under 35 U.S.C. § 271(a).

Google has also directly infringed claims 8, 9, 11, and 12 of the ’949 Patent by virtue of storing program instructions on Google Software Servers, which constitutes “mak[ing]” an

infringing "non-transitory computer readable storage medium" under 35 U.S.C. § 271(a).

Further, on information and belief, Google has directly infringed each Asserted Claim of the '949 Patent by virtue of testing Cast-enabled controllers with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app installed thereon, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Further, on information and belief, Google has directly infringed claims 1, 4, 8, and 11 of the '949 Patent by virtue of testing Cast-enabled controllers with an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app installed thereon within the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Further, on information and belief, Google has directly infringed claims 1, 2, 4, 8, 9, and 11 of the '949 Patent by virtue of testing Cast-enabled displays with a pre-redesign version of the Cast-enabled display software installed thereon within the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

'258 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '258 Patent. Thus, Google has directly infringed (up to the '258 Patent's expiration) each Asserted Claim of the '258 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed each Asserted Claim of the '258 Patent by virtue of installing software (e.g., firmware updates) onto Cast-enabled media players in the United States, which constitutes "mak[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed each Asserted Claim of the '258 Patent by virtue of using Cast-enabled media players in the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

'959 Patent: Sonos contends that each '959 Cast-enabled media player infringes each Asserted Claim of the '959 Patent. Thus, Google has directly infringed each Asserted Claim of the '959 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed each Asserted Claim of the '959 Patent by virtue of installing software (e.g., firmware updates) onto '959 Cast-enabled media players in the United States, which constitutes "mak[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed each Asserted Claim of the '959 Patent by virtue of using '959 Cast-enabled media players in the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

'715 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '715 Patent. Thus, Google has directly infringed and continues to directly infringe each Asserted Claim of the '715 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the '715 Patent by virtue of installing software (e.g., firmware updates) onto Cast-enabled media players in the United States, which constitutes "mak[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the '715 Patent by virtue of using Cast-enabled media players in the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos additionally contends that Google has directly infringed and continues to directly infringe claims 13, 15, and 17 of the '715 Patent by virtue of storing program instructions on Google Software Servers, which constitutes "mak[ing]" an infringing "tangible, non-transitory computer-readable media" under 35 U.S.C. § 271(a).

'953 Patent: Sonos contends that each '953 Cast-enabled media player infringes each Asserted Claim of the '953 Patent. Thus, Google has directly infringed (up to the '953 Patent's expiration) each Asserted Claim of the '953 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed each Asserted Claim of the '953 Patent by virtue of installing software (e.g., firmware updates) onto '953 Cast-enabled media

players in the United States, which constitutes "mak[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed each Asserted Claim of the '953 Patent by virtue of using '953 Cast-enabled media players in the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos additionally contends that Google has directly infringed claims 25, 28, 29, and 30 of the '953 Patent by virtue of storing program instructions on Google Software Servers, which constitutes "mak[ing]" infringing "[t]angible, non-transitory computer-readable storage media" under 35 U.S.C. § 271(a).

'896 Patent: Google has directly infringed and continues to directly infringe each Asserted Claim of the '896 Patent at least by offering to sell, selling, and/or importing into the United States Cast-enabled controllers (e.g., Pixel Tablets) with the Google Home app installed thereon.

Google has also directly infringed and continues to directly infringe each Asserted Claim of the '896 Patent by virtue of installing the Google Home app onto a Pixel smartphone, tablet, or other computer device, or a third-party smartphone, tablet, or other computer device within the United States, which constitutes "mak[ing]" a Cast-enabled controller, which is an infringing device under 35 U.S.C. § 271(a).

Google has also directly infringed and continues to directly infringe claims 13, 15, 17, and 18 of the '896 Patent by virtue of storing program instructions on Google Software Servers, which constitutes "mak[ing]" an infringing "non-transitory computer-readable medium" under 35 U.S.C. § 271(a).

Further, on information and belief, Google has directly infringed and continues to directly infringe each Asserted Claim of the '896 Patent by virtue of testing Cast-enabled controllers with the Google Home app installed thereon, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

'883 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '883 Patent. Thus, Google has directly infringed and continues to directly infringe

each Asserted Claim of the ’883 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the ’883 Patent by virtue of installing software (e.g., firmware updates) onto Cast-enabled media players in the United States, which constitutes “mak[ing]” an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the ’883 Patent by virtue of using Cast-enabled media players in the United States, which constitutes “us[ing]” an infringing device under 35 U.S.C. § 271(a).

Sonos additionally contends that Google has directly infringed and continues to directly infringe claims 14, 15, 16, 17, and 19 of the ’883 Patent by virtue of storing program instructions on Google Software Servers, which constitutes “mak[ing]” an infringing “non-transitory, computer-readable storage medium” under 35 U.S.C. § 271(a).

’025 Patent: Sonos contends that each ’025 Cast-enabled media player infringes each Asserted Claim of the ’025 Patent. Thus, Google has directly infringed and continues to directly infringe each Asserted Claim of the ’025 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the ’025 Patent by virtue of installing software (e.g., firmware updates) onto ’025 Cast-enabled media players in the United States, which constitutes “mak[ing]” an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the ’025 Patent by virtue of using ’025 Cast-enabled media players in the United States, which constitutes “us[ing]” an infringing device under 35 U.S.C. § 271(a).

Sonos additionally contends that Google has directly infringed and continues to directly infringe claim 18 of the ’025 Patent by virtue of storing program instructions on Google Software

Servers, which constitutes "mak[ing]" infringing "tangible, non-transitory, computer readable memory" under 35 U.S.C. § 271(a).

'001 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '001 Patent. Thus, Google has directly infringed and continues to directly infringe each Asserted Claim of the '001 Patent at least by offering to sell, selling, and/or importing into the United States infringing devices.

Sonos also contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the '001Patent by virtue of installing software (e.g., firmware updates) onto Cast-enabled media players in the United States, which constitutes "mak[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos further contends that Google has directly infringed and continues to directly infringe each Asserted Claim of the '001 Patent by virtue of using Cast-enabled media players in the United States, which constitutes "us[ing]" an infringing device under 35 U.S.C. § 271(a).

Sonos additionally contends that Google has directly infringed and continues to directly infringe claims 23, 24, 25, 28, 29, 30, 31, 32, and 33 of the '001 Patent by virtue of storing program instructions on Google Software Servers, which constitutes "mak[ing]" infringing "[t]angible, non-transitory computer-readable media" under 35 U.S.C. § 271(a).

ii. Induced Infringement Under 35 U.S.C. § 271(b)

Pursuant to 35 U.S.C. § 271(b), Google also actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to make, use, offer to sell, sell, and/or import the Accused Instrumentalities into the United States. As noted in Sonos's Second Amended Complaint, Google had actual knowledge of the Asserted Patents prior to the filing of the Complaint.

'014 Patent: Despite knowing of the '014 Patent, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to directly infringe the Asserted Claims in various ways, in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally

encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install a pre- or post-redesign Android version of the Google Home app or an iOS version of the Google Home app onto computer devices (and updates thereto), and thereby "make[]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '014 Patent under 35 U.S.C. § 271(a).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app onto computer devices (and updates thereto), and thereby "make[]" an infringing device, which constitutes direct infringement of claims 25 and 32 of the '014 Patent under 35 U.S.C. § 271(a).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install an Android or iOS version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players and/or an Android or iOS version of the Google Play Music app onto computer devices (and updates thereto), and thereby "make[]" an infringing device, which constitutes direct infringement of claims 38, 42, and 43 of the '014 Patent under 35 U.S.C. § 271(a).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install a pre-redesign version of the Cast-enabled display software onto Cast-enabled displays (e.g., updates thereto), and thereby "make[]" an infringing device, which constitutes direct infringement of claims 25, 32, 38, 42, and 43 of the '014 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use" Cast-enabled controllers with a pre- or post-redesign Android version of the Google Home app or an iOS version of the Google Home app installed thereon, which constitutes direct infringement of each Asserted Claim of the '014 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use" Cast-enabled controllers with an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon, which constitutes direct infringement of claims 25 and 32 of the '014 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use" Cast-enabled controllers with an Android or iOS version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players and/or an Android or iOS version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon, which constitutes direct infringement of claims 38, 42, and 43 of the '014 Patent under 35 U.S.C. § 271(a).

As a further example, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) distributors and retailers to "offer[] to sell" and "sell[]" Cast-enabled controllers (e.g., Google's Pixel devices) with an Android or iOS version of the YouTube Music app, an Android version of

the Google Home App, and/or an Android or iOS version of Google Play Music app installed thereon and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon, which constitutes direct infringement of claims 25 and 32 of the '014 Patent under 35 U.S.C. § 271(a).

As a further example, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) distributors and retailers to "offer[] to sell" and "sell[]" Cast-enabled controllers (e.g., Google's Pixel devices) with an Android or iOS version of the YouTube Music app that provides individual volume meters for Cast-enabled media players in a group and a group volume meter for a group of Cast-enabled media players and/or an Android or iOS version of the Google Play Music app installed thereon, and Cast-enabled displays with a pre- or post-redesign version of the Cast-enabled display software installed thereon, which constitutes direct infringement of claims 38, 42, and 43 of the '014 Patent under 35 U.S.C. § 271(a).

As still another example, by making, importing, offering to sell, and selling Cast-enabled media players programmed with software that facilitates the accused functionality in the accused apps, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to "mak[e]" and "use" Cast-enabled controllers and Cast-enabled displays, which constitutes direct infringement of each Asserted Claim of the '014 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the '014 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the '014 Patent. For example, Google has supplied and continues to supply from the United States the accused apps to users in the United States and abroad and encourages installation and use of such accused apps in the United States and abroad while knowing that the installation and use of the accused apps will infringe the Asserted Claims of the '014 Patent. As another example, Google has supplied and continues to supply Cast-enabled displays (and software for the Cast-enabled displays) to users and encourages installation and use of Cast-enabled display software on the Cast-enabled displays while knowing that such installation and use will infringe the Asserted

Claims of the ’014 Patent.

’949 Patent: Despite knowing of the ’949 Patent, Google has actively, knowingly, and intentionally induced others to directly infringe the Asserted Claims in various ways, in violation of 35 U.S.C. § 271(b).

For example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to install a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app onto computer devices (and updates thereto), and thereby “make[]” an infringing device, which constitutes direct infringement of each Asserted Claim of the ’949 Patent under 35 U.S.C. § 271(a).

For example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to install an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app onto computer devices (and updates thereto), and thereby “make[]” an infringing device, which constitutes direct infringement of claims 1, 4, 8, and 11 of the ’949 Patent under 35 U.S.C. § 271(a).

For example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install a pre-redesign version of the Cast-enabled display software onto Cast-enabled displays (e.g., updates thereto), and thereby “make[]” an infringing device, which constitutes direct infringement of claims 1, 2, 4, 8, 9, 11 of the ’949 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to “use” Cast-enabled controllers with a pre-redesign Android version of the Google Home app or an iOS version of the Google Home app installed thereon,

which constitutes direct infringement of each Asserted Claim of the ’949 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to “use” Cast-enabled controllers with an Android or iOS version of the YouTube Music app and/or an Android or iOS version of the Google Play Music app installed thereon, which constitutes direct infringement of claims 1, 4, 8, and 11 of the ’949 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to “use” Cast-enabled displays installed with a pre-redesign version of the Cast-enabled display software, which constitutes direct infringement of claims 1, 2, 4, 8, 9, and 11 of the ’949 Patent under 35 U.S.C. § 271(a).

As a further example, Google has actively, knowingly, and intentionally encouraged and induced distributors and retailers to “offer[] to sell” and “sell[]” Cast-enabled controllers (e.g., Google’s Pixel devices) with an Android or iOS version of the YouTube Music app, a pre-redesign Android version of the Google Home app, and/or an Android or iOS version Google Play Music app installed thereon, which constitutes direct infringement of claims 1, 2, 4, 8, and 11 of the ’949 Patent under 35 U.S.C. § 271(a).

As a further example, Google has actively, knowingly, and intentionally encouraged and induced distributors and retailers to “offer[] to sell” and “sell[]” Cast-enabled displays installed with a pre-redesign version of the Cast-enabled display software, which constitutes direct infringement of claims 1, 2, 4, 8, 9, and 11 of the ’949 Patent under 35 U.S.C. § 271(a).

As still another example, by making, importing, offering to sell, and selling Cast-enabled media players programmed with software that facilitates the accused functionality in the accused apps, Google has actively, knowingly, and intentionally induced others to “mak[e]” and “use” Cast-enabled controllers and Cast-enabled displays, which constitutes direct infringement of each Asserted Claim of the ’949 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the ’949 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the ’949 Patent. For example, Google has supplied from the United States the accused apps to users in the United States and abroad and encouraged installation and use of such accused apps in the United States and abroad while knowing that the installation and use of the accused apps would infringe the Asserted Claims of the ’949 Patent. As another example, Google has supplied Cast-enabled displays (and software for the Cast-enabled displays) to users and encouraged installation and use of Cast-enabled display software on the Cast-enabled displays while knowing that such installation and use would infringe the Asserted Claims of the ’949 Patent.

’258 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the ’258 Patent. Despite knowing of the ’258 Patent, Google has actively, knowingly, and intentionally induced others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google’s website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to install firmware updates onto Cast-enabled media players, thereby “mak[ing]” an infringing device, which constitutes direct infringement of the Asserted Claims of the ’258 Patent under 35 U.S.C. § 271(a).

As another example, through Google’s website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to “use[]” Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the ’258 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced distributors and retailers to “offer[] to sell” and “sell[]” Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the ’258 Patent under 35 U.S.C. §

271(a).

Along with its actual knowledge of the ’258 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the ’258 Patent. For instance, Google has supplied Cast-enabled media players (as well as firmware updates) to users while knowing that the use of Cast-enabled media players will infringe the Asserted Claims of the ’258 Patent.

’959 Patent: Sonos contends that each ’959 Cast-enabled media player infringes each Asserted Claim of the ’959 Patent. Despite knowing of the ’959 Patent, Google has actively, knowingly, and intentionally induced others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import ’959 Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google’s website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to install firmware updates onto ’959 Cast-enabled media players, thereby “mak[ing]” an infringing device, which constitutes direct infringement of the Asserted Claims of the ’959 Patent under 35 U.S.C. § 271(a).

As another example, through Google’s website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to “use[]” ’959 Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the ’959 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced distributors and retailers to “offer[] to sell” and “sell[]” ’959 Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the ’959 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the ’959 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the ’959

Patent. For instance, Google has supplied '959 Cast-enabled media players (as well as firmware updates) to users while knowing that the use of '959 Cast-enabled media players will infringe the Asserted Claims of the '959 Patent.

'715 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '715 Patent. Despite knowing of the '715 Patent, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install firmware updates onto Cast-enabled media players, thereby "mak[ing]" an infringing device, which constitutes direct infringement of the Asserted Claims of the '715 Patent under 35 U.S.C. § 271(a).

As another example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use[]" Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '715 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) distributors and retailers to "offer[] to sell" and "sell[]" Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '715 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the '715 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the '715 Patent. For instance, Google has supplied and continues to supply Cast-enabled media players

(as well as firmware updates) to users while knowing that the use of Cast-enabled media players will infringe the Asserted Claims of the ’715 Patent.

’953 Patent: Sonos contends that each ’953 Cast-enabled media player infringes each Asserted Claim of the ’953 Patent. Despite knowing of the ’953 Patent, Google has actively, knowingly, and intentionally induced others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import ’953 Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google’s website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to install firmware updates onto ’953 Cast-enabled media players, thereby “mak[ing]” an infringing device, which constitutes direct infringement of the Asserted Claims of the ’953 Patent under 35 U.S.C. § 271(a).

As another example, through Google’s website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others to “use[]” ’953 Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the ’953 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced distributors and retailers to “offer[] to sell” and “sell[]” ’953 Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the ’953 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the ’953 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the ’953 Patent. For instance, Google has supplied ’953 Cast-enabled media players (as well as firmware updates) to users while knowing that the use of ’953 Cast-enabled media players will infringe the Asserted Claims of the ’953 Patent.

'896 Patent: Despite knowing of the '896 Patent, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to directly infringe the Asserted Claims in various ways, in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally induce) others to install the Google Home app onto computer devices (and updates thereto), and thereby "make[]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As yet another example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally induce) others to "use" Cast-enabled controllers with the Google Home app installed thereon, which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As a further example, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally induce) distributors and retailers to "offer[] to sell" and "sell[]" Cast-enabled controllers (e.g., Pixel Tablets with the Google Home app installed thereon), which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As a further example, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally induce) distributors and retailers to "offer[] to sell" and "sell[]" Cast-enabled displays installed with a pre-redesign version of the Cast-enabled display software, which constitutes direct infringement of claims 1, 2, 4, 8, 9, and 11 of the '896 Patent under 35 U.S.C. § 271(a).

As still another example, by making, importing, offering to sell, and selling Cast-enabled media players programmed with software that facilitates the accused functionality in the accused apps, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to "mak[e]" and "use" Cast-enabled controllers and

Cast-enabled displays, which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the '896 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the asserted claims of the '896 Patent. For example, Google has supplied and continues to supply from the United States the accused apps to users in the United States and abroad and encourages installation and use of such accused apps in the United States and abroad while knowing that the installation and use of the accused apps will infringe the asserted claims of the '896 Patent.

'883 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '883 Patent. Despite knowing of the '883 Patent, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install firmware updates onto Cast-enabled media players, thereby "mak[ing]" an infringing device, which constitutes direct infringement of the Asserted Claims of the '883 Patent under 35 U.S.C. § 271(a).

As another example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use[]" Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '883 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) distributors and retailers to "offer[] to

sell" and "sell[]" Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '883 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the '883 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the '883 Patent. For instance, Google has supplied and continues to supply Cast-enabled media players (as well as firmware updates) to users while knowing that the use of Cast-enabled media players will infringe the Asserted Claims of the '883 Patent.

'025 Patent: Sonos contends that each '025 Cast-enabled media player infringes each Asserted Claim of the '025 Patent. Despite knowing of the '025 Patent, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally encourage and induce) others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import '025 Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install firmware updates onto '025 Cast-enabled media players, thereby "mak[ing]" an infringing device, which constitutes direct infringement of the Asserted Claims of the '025 Patent under 35 U.S.C. § 271(a).

As another example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use[]" '025 Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '025 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally encourage and induce) distributors and

retailers to "offer[] to sell" and "sell[]" '025 Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '025 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the '025 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the '025 Patent. For instance, Google has supplied and continues to supply '025 Cast-enabled media players (as well as firmware updates) to users while knowing that the use of '025 Cast-enabled media players will infringe the Asserted Claims of the '025 Patent.

'001 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '001 Patent. Despite knowing of the '001 Patent, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others to directly infringe the Asserted Claims by actively encouraging others to make, use, offer to sell, sell, and/or import Cast-enabled media players into the United States in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to install firmware updates onto Cast-enabled media players, thereby "mak[ing]" an infringing device, which constitutes direct infringement of the Asserted Claims of the '001 Patent under 35 U.S.C. § 271(a).

As another example, through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others to "use[]" Cast-enabled media players, which constitutes direct infringement of the Asserted Claims of the '001 Patent under 35 U.S.C. § 271(a).

As yet another example, Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) distributors and retailers to "offer[] to sell" and "sell[]" Cast-enabled media players, which constitutes direct infringement of the

Asserted Claims of the ’001 Patent under 35 U.S.C. § 271(a).

Along with its actual knowledge of the ’001 Patent, Google also knew (or should have known) that its actions would induce others to directly infringe the Asserted Claims of the ’001 Patent. For instance, Google has supplied and continues to supply Cast-enabled media players (as well as firmware updates) to users while knowing that the use of Cast-enabled media players will infringe the Asserted Claims of the ’001 Patent.

iii. Contributory Infringement Under 35 U.S.C. § 271(c)

Pursuant to 35 U.S.C. § 271(c), Google has also contributorily infringed (and continues to contributorily infringe) the Asserted Claims of the Asserted Patents by supplying software components in the United Sates to be installed and/or used by users of the Accused Instrumentalities – each of which is a material component of the Accused Instrumentalities that has no substantial noninfringing use – with knowledge that the software components were especially made or adapted for use in an Accused Instrumentality such that the installation and/or use of the software components would result in direct infringement. As noted in Sonos’s Amended Complaint, Google had actual knowledge of the Asserted Patents prior to the filing of the Complaint.

’014 Patent: Google has contributorily infringed (and continues to contributorily infringe) each Asserted Claim of the ’014 Patent by virtue of the fact that (i) in addition to importing and selling certain Cast-enabled controllers that come pre-installed with one or more of the accused apps, Google supplies software components for performing the accused functionality as part of Google’s accused apps for installation onto Cast-enabled controllers in the United States and also as part of Google’s own software (e.g., firmware and/or Cast-enabled display software) for installation onto Cast-enabled displays in the United States, and each time a user installs (or updates) these software components, the user “makes” an infringing device and thereby directly infringes each Asserted Claim of the ’014 Patent under 35 U.S.C. § 271(a).

The software components for performing the accused functionality are material components of infringing devices that are not staple articles or commodities of commerce suitable

for substantial noninfringing use because the only possible use for these software components is to be installed and run on infringing Cast-enabled controllers and Cast-enabled displays.

Along with its actual knowledge of the ’014 Patent, Google knew (or should have known) that the software components for performing the accused functionality were especially made or adapted for installation on infringing devices, and that installation of these software components by others resulted in (and continues to result in) direct infringement of the ’014 Patent under 35 U.S.C. § 271(a) because each such installation “makes” a device that meets every element of each of the Asserted Claims of the ’014 Patent.

Moreover, as a result of Google’s contributory conduct, others have directly infringed the Asserted Claims of the ’014 Patent. For example, users have installed the supplied software components onto Cast-enabled controllers in the United States, thereby “making” infringing devices. As another example, users have installed the supplied software components (which are included in firmware, as well as Cast-enabled display software) onto Cast-enabled displays in the United States, thereby “making” updated Cast-enabled displays that are infringing devices. As yet another example, after installing the supplied software components onto Cast-enabled controllers and Cast-enabled displays, users have used these infringing devices, which also constitutes direct infringement.

’949 Patent: Google has contributorily infringed each Asserted Claim of the ’949 Patent by virtue of the fact that (i) in addition to importing and selling certain Cast-enabled controllers that come pre-installed with one or more of the accused apps, Google supplies software components for performing the accused functionality as part of Google’s accused apps for installation onto Cast-enabled controllers in the United States and also as part of Google’s own software (e.g., firmware and/or Cast-enabled display software) for installation onto Cast-enabled displays in the United States, and each time a user installs (or updates) these software components, the user “makes” an infringing device and thereby directly infringes each Asserted Claim of the ’949 Patent under 35 U.S.C. § 271(a).

The software components for performing the accused functionality are material components of infringing devices that are not staple articles or commodities of commerce suitable

for substantial noninfringing use because the only possible use for these software components is to be installed and run on infringing Cast-enabled controllers and Cast-enabled displays.

Along with its actual knowledge of the ’949 Patent, Google knew (or should have known) that the software components for performing the accused functionality were especially made or adapted for installation on infringing devices, and that installation of these software components by others resulted in direct infringement of the ’949 Patent under 35 U.S.C. § 271(a) because each such installation “makes” a device that meets every element of each of the Asserted Claims of the ’949 Patent.

Moreover, as a result of Google’s contributory conduct, others have directly infringed the Asserted Claims of the ’949 Patent. For example, users have installed the supplied software components onto Cast-enabled controllers in the United States, thereby “making” infringing devices. As another example, users have installed the supplied software components (which are included in firmware, as well as Cast-enabled display software) onto Cast-enabled displays in the United States, thereby “making” updated Cast-enabled displays that are infringing devices. As yet another example, after installing the supplied software components onto Cast-enabled controllers and Cast-enabled displays, users have used these infringing devices, which also constitutes direct infringement.

’258 Patent: Google has contributorily infringed the Asserted Claims of the ’258 Patent by virtue of the fact that, in addition to importing and selling Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user “makes” an infringing device, thereby directly infringing the Asserted Claims of the ’258 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players.

Along with its actual knowledge of the ’258 Patent, Google knew (or should have known)

that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others resulted in direct infringement of the ’258 Patent under 35 U.S.C. § 271(a) because each such installation “makes” an updated player that meets every element of the Asserted Claims of the ’258 Patent.

Moreover, as a result of Google’s contributory conduct, others have directly infringed the Asserted Claims of the ’258 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto Cast-enabled media players in the United States, thereby “making” updated Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of the firmware updates onto Cast-enabled media players, users have used Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

’959 Patent: Google has contributorily infringed the Asserted Claims of the ’959 Patent by virtue of the fact that, in addition to importing and selling ’959 Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for ’959 Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user “makes” an infringing device, thereby directly infringing the Asserted Claims of the ’959 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of ’959 Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on ’959 Cast-enabled media players.

Along with its actual knowledge of the ’959 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on ’959 Cast-enabled media players, and that installation of these software components by others resulted in direct infringement of the ’959 Patent under 35 U.S.C. § 271(a) because each such installation “makes” an updated player that meets every element of the Asserted Claims of the ’959 Patent.

Moreover, as a result of Google's contributory conduct, others have directly infringed the Asserted Claims of the '959 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto '959 Cast-enabled media players in the United States, thereby "making" updated '959 Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of the firmware updates onto '959 Cast-enabled media players, users have used '959 Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

'715 Patent: Google has contributorily infringed (and continues to contributorily infringe) the Asserted Claims of the '715 Patent by virtue of the fact that, in addition to importing and selling Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user "makes" an infringing device, thereby directly infringing the Asserted Claims of the '715 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players.

Along with its actual knowledge of the '715 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others resulted in (and continues to result in) direct infringement of the '715 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of the Asserted Claims of the '715 Patent.

Moreover, as a result of Google's contributory conduct, others have directly infringed the Asserted Claims of the '715 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto Cast-enabled media players in the United States, thereby "making" updated Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of

the firmware updates onto Cast-enabled media players, users have used Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

'953 Patent: Google has contributorily infringed the Asserted Claims of the '953 Patent by virtue of the fact that, in addition to importing and selling '953 Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user "makes" an infringing device, thereby directly infringing the Asserted Claims of the '953 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of '953 Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on '953 Cast-enabled media players.

Along with its actual knowledge of the '953 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on '953 Cast-enabled media players, and that installation of these software components by others resulted in direct infringement of the '953 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of the Asserted Claims of the '953 Patent.

Moreover, as a result of Google's contributory conduct, others have directly infringed the Asserted Claims of the '953 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto '953 Cast-enabled media players in the United States, thereby "making" updated '953 Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of the firmware updates onto '953 Cast-enabled media players, users have used '953 Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

'896 Patent: Google has contributorily infringed (and continues to contributorily infringe) each Asserted Claim of the '896 Patent by virtue of the fact that (i) in addition to importing and selling certain Cast-enabled controllers that come pre-installed with one or more of the accused

apps, Google supplies software components for performing the accused functionality as part of Google's accused apps for installation onto Cast-enabled controllers in the United States, and each time a user installs (or updates) these software components, the user "makes" an infringing device and thereby directly infringes each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

The software components for performing the accused functionality are material components of infringing devices that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on infringing Cast-enabled controllers.

Along with its actual knowledge of the '896 Patent, Google knew (or should have known) that the software components for performing the accused functionality were especially made or adapted for installation on infringing devices, and that installation of these software components by others resulted in (and continues to result in) direct infringement of the '896 Patent under 35 U.S.C. § 271(a) because each such installation "makes" a device that meets every element of each of the Asserted Claims of the '896 Patent .

Moreover, as a result of Google's contributory conduct, others have directly infringed the Asserted Claims of the '896 Patent. For example, users have installed the supplied software components onto Cast-enabled controllers in the United States, thereby "making" infringing devices. As yet another example, after installing the supplied software components onto Cast-enabled controllers, users have used these infringing devices, which also constitutes direct infringement.

'883 Patent: Google has contributorily infringed (and continues to contributorily infringe) the Asserted Claims of the '883 Patent by virtue of the fact that, in addition to importing and selling Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user "makes" an infringing device, thereby directly infringing the Asserted Claims of the '883 Patent under 35 U.S.C. § 271(a). The software components included in the firmware

updates are material components of Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players.

Along with its actual knowledge of the '883 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others resulted in (and continues to result in) direct infringement of the '883 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of the Asserted Claims of the '883 Patent.

Moreover, as a result of Google's contributory conduct, others have directly infringed the Asserted Claims of the '883 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto Cast-enabled media players in the United States, thereby "making" updated Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of the firmware updates onto Cast-enabled media players, users have used Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

'025 Patent: Google has contributorily infringed (and continues to contributorily infringe) the Asserted Claims of the '025 Patent by virtue of the fact that, in addition to importing and selling '025 Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for '025 Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user "makes" an infringing device, thereby directly infringing the Asserted Claims of the '025 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of '025 Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on '025 Cast-enabled media players.

Along with its actual knowledge of the '025 Patent, Google knew (or should have known)

that the software components included in the firmware updates were especially made or adapted for installation on ’025 Cast-enabled media players, and that installation of these software components by others resulted in direct infringement of the ’025 Patent under 35 U.S.C. § 271(a) because each such installation “makes” an updated player that meets every element of the Asserted Claims of the ’025 Patent.

Moreover, as a result of Google’s contributory conduct, others have directly infringed the Asserted Claims of the ’025 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto ’025 Cast-enabled media players in the United States, thereby “making” updated ’025 Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of the firmware updates onto ’025 Cast-enabled media players, users have used ’025 Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

’001 Patent: Google has contributorily infringed (and continues to contributorily infringe) the Asserted Claims of the ’001 Patent by virtue of the fact that, in addition to importing and selling Cast-enabled media players that come pre-installed with firmware, Google supplies software components for performing the accused functionality as part of firmware updates for Cast-enabled media players in the United States, and each time a user installs such a firmware update, the user “makes” an infringing device, thereby directly infringing the Asserted Claims of the ’001 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of Cast-enabled media players that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players.

Along with its actual knowledge of the ’001 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others resulted in (and continues to result in) direct infringement of the ’001 Patent under 35 U.S.C. § 271(a) because each such installation “makes” an updated player that meets every element of the Asserted Claims of the ’001 Patent.

Moreover, as a result of Google's contributory conduct, others have directly infringed the Asserted Claims of the '001 Patent. For example, users have installed the supplied software components included as part of the firmware updates onto Cast-enabled media players in the United States, thereby "making" updated Cast-enabled media players, which constitutes direct infringement. As another example, after installing the software components included as part of the firmware updates onto Cast-enabled media players, users have used Cast-enabled media players, which also constitutes direct infringement of the Asserted Claims.

iv. Infringement Under 35 U.S.C. § 271(f)(1)

Pursuant to 35 U.S.C. § 271(f)(1), Google has also infringed by supplying in or from the United States software (e.g., firmware, app-software, Cast-enabled display software, or other software) components, which constitute substantial portions of the components of Sonos's patented inventions, and actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) others outside of the United States to combine these software components in a manner that, if such combination would have occurred in the United States (as it does pursuant to the theories set forth above), infringes the Asserted Claims of the Asserted Patents. And these combinations by those outside of the United States do in fact occur. Accordingly, by supplying such software components from the United States, Google is liable for infringement under 35 U.S.C. § 271(f)(1).

'014 Patent: Despite knowing of the '014 Patent, Google supplies software components for performing the accused functionality as part of Google's accused apps for installation onto Cast-enabled controllers and also as part of Google's software (e.g., firmware and/or Cast-enabled display software) for installation onto Cast-enabled displays. These software components are at least substantial portions of the components of the patented inventions of the '014 Patent. Google supplies these software components from the United States to various entities outside the United States. Google then induces those entities to combine the supplied components in a manner that would, if combined within the United States, constitute infringement. Google has actively, knowingly, and intentionally induced (and continues to actively, knowingly, and intentionally induce) these entities to make such combinations outside

the United States in various ways, in violation of 35 U.S.C. § 271(f)(1).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others outside the United States to install one or more of the accused apps onto Cast-enabled controllers outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '014 Patent under 35 U.S.C. § 271(a).

As another example, through Google's website, advertising and promotional material, user guides, and Cast-enabled apps, Google has actively, knowingly, and intentionally encouraged and induced others outside the United States to install software (e.g., firmware updates and/or Cast-enabled display software) onto the Cast-enabled displays outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of claims 25, 32, 38, 42, and 43 of the '014 Patent under 35 U.S.C. § 271(a).

As another example, through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity that acts in a manufacturer or distributor role, Google actively, knowingly, and intentionally encourages and induces or instructs such parties to install one or more of the accused apps onto computer devices outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '014 Patent.

As another example, through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity that acts in a manufacturer or distributor role, Google actively, knowingly, and intentionally encourages and induces or instructs such parties to install software (e.g., firmware updates and/or Cast-enabled display software) onto the Cast-enabled displays outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct

infringement of claims 25, 32, 38, 42, and 43 of the ’014 Patent under 35 U.S.C. § 271(a).

’949 Patent: Despite knowing of the ’949 Patent, Google supplied software components for performing the accused functionality as part of Google’s accused apps for installation onto Cast-enabled controllers and also as part of Google’s software (e.g., firmware and/or Cast-enabled display software) for installation onto Cast-enabled displays. These software components are at least substantial portions of the components of the patented inventions of the ’949 Patent. Google supplied these software components from the United States to various entities outside the United States. Google then induced those entities to combine the supplied components in a manner that would, if combined within the United States, constitute infringement. Google has actively, knowingly, and intentionally induced these entities to make such combinations outside the United States in various ways, in violation of 35 U.S.C. § 271(f)(1).

For example, through Google’s website, advertising and promotional material, user guides, and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others outside the United States to install one or more of the accused apps onto Cast-enabled controllers outside of the United States. If this combination were done within the United States, that act would constitute “mak[ing]” an infringing device, which constitutes direct infringement of each Asserted Claim of the ’949 Patent under 35 U.S.C. § 271(a).

As another example, through Google’s website, advertising and promotional material, user guides, and Cast-enabled apps, Google has actively, knowingly, and intentionally encouraged and induced others outside the United States to install software (e.g., firmware updates and/or Cast-enabled display software) onto the Cast-enabled displays outside of the United States. If this combination were done within the United States, that act would constitute “mak[ing]” an infringing device, which constitutes direct infringement of claims 1, 2, 4, 8, 9, and 11 of the ’949 Patent under 35 U.S.C. § 271(a).

As another example, through Google’s relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity that acts in a manufacturer or distributor

role, Google actively, knowingly, and intentionally encouraged and induced or instructed such parties to install one or more of the accused apps onto computer devices outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '949 Patent.

As another example, through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity that acts in a manufacturer or distributor role, Google actively, knowingly, and intentionally encouraged and induced or instructed such parties to install software (e.g., firmware updates and/or Cast-enabled display software) onto the Cast-enabled displays outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of claims 1, 2, 8, 9, and 11 of the '949 Patent under 35 U.S.C. § 271(a).

As still another example, through Google's relationship with entities (including affiliated entities) that operate servers outside of the United States that host accused apps for download onto Cast-enabled controllers and/or software (e.g., firmware and/or Cast-enabled display software) for download onto Cast-enabled displays, Google actively, knowingly, and intentionally encouraged and induced or instructed these entities to load, store, or otherwise provide the accused apps and/or Cast-enabled display software onto these servers. If this combination were done within the United States, that act would constitute direct infringement of each Asserted Claim of the '949 Patent by "mak[ing]" servers that host such software in violation of 35 U.S.C. § 271(a).

'258 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '258 Patent. Despite knowing of the '258 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others outside the United States to install these software

components as a part of installing firmware updates onto Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '258 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the '258 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto Cast-enabled media players. Through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '258 Patent under 35 U.S.C. § 271(a).

'959 Patent: Sonos contends that each '959 Cast-enabled media player infringes each Asserted Claim of the '959 Patent. Despite knowing of the '959 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto '959 Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others outside the United States to install these software components as a part of installing firmware updates onto '959 Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" or "us[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '959 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the '959 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto '959 Cast-enabled media players. Through Google's relationship

with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto '959 Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '959 Patent under 35 U.S.C. § 271(a).

'715 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '715 Patent. Despite knowing of the '715 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others outside the United States to install these software components as a part of installing firmware updates onto Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" or "us[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '715 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the '715 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto Cast-enabled media players. Through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an

infringing device, which constitutes direct infringement of each Asserted Claim of the '715 Patent under 35 U.S.C. § 271(a).

'953 Patent: Sonos contends that each '953 Cast-enabled media player infringes each Asserted Claim of the '953 Patent. Despite knowing of the '953 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto '953 Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced others outside the United States to install these software components as a part of installing firmware updates onto '953 Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" or "us[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '953 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the '953 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto '953 Cast-enabled media players. Through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto '953 Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '953 Patent under 35 U.S.C. § 271(a).

'896 Patent: Despite knowing of the '896 Patent, Google supplies the Google Home app from the United States to various entities outside the United States. Google then induces those entities to combine the Google Home app in a manner that would, if combined within the United States, constitute infringement. Google has actively, knowingly, and intentionally induced (and

continues to actively, knowingly, and intentionally induce) these entities to make such combinations outside the United States in various ways, in violation of 35 U.S.C. § 271(b).

For example, through Google's website, advertising and promotional material, user guides, and/or the Google Play Store, and via audible or visual instructions emitted from or displayed on the Cast-enabled media players and Cast-enabled displays, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others outside the United States to install the Google Home app onto computer devices outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As another example, Google supplies from the United States software components for performing the accused functionality as part of making the Google Home app available as a part of a package of apps that are preinstalled on computer devices (e.g., the Pixel Tablet). Through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto computer devices. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As another example, through Google's relationship with entities (including affiliated entities) that operate servers outside of the United States that host the Google Home app for download onto smartphone, tablet, and computer devices, Google actively, knowingly, and intentionally encourages and induces or instructs these entities to load, store, or otherwise provide the Google Home app onto these servers. If this combination were done within the United States, that act would constitute direct infringement of claims 13, 15, 17, and 18 of the '896 Patent by "mak[ing]" and/or "us[ing]" servers that host such software in violation of 35 U.S.C. § 271(a).

'883 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '883 Patent. Despite knowing of the '883 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others outside the United States to install these software components as a part of installing firmware updates onto Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" or "us[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '883 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the '883 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto Cast-enabled media players. Through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '883 Patent under 35 U.S.C. § 271(a).

'025 Patent: Sonos contends that each '025 Cast-enabled media player infringes each Asserted Claim of the '025 Patent. Despite knowing of the '025 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto '025 Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively,

knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others outside the United States to install these software components as a part of installing firmware updates onto '025 Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" or "us[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '025 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the '025 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto '025 Cast-enabled media players. Through Google's relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto '025 Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '025 Patent under 35 U.S.C. § 271(a).

'001 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '001 Patent. Despite knowing of the '001 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware updates available for installation onto Cast-enabled media players. Google then through Google's website, advertising and promotional material, user guides, the Google Home app (among other apps offered by Google), and/or the Google Play Store, Google has actively, knowingly, and intentionally encouraged and induced (and continues to actively, knowingly, and intentionally encourage and induce) others outside the United States to install these software components as a part of installing firmware updates onto Cast-enabled media players outside the United States. If this combination were done within the United States, that act would constitute "mak[ing]" or "us[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '001 Patent under 35 U.S.C. § 271(a).

As another example, despite knowing of the ’001 Patent, Google supplies from the United States software components for performing the accused functionality as part of making firmware available for installation onto Cast-enabled media players. Through Google’s relationship with third-party manufacturers, third-party distributers, or via an otherwise affiliated entity or subsidiary, acting for example in a manufacturer or distributor role, Google then actively, knowingly, and intentionally encourages and induces or instructs such parties to, outside of the United States, install or load these software components onto Cast-enabled media players. If this combination were done within the United States, that act would constitute “mak[ing]” an infringing device, which constitutes direct infringement of each Asserted Claim of the ’001 Patent under 35 U.S.C. § 271(a).

v. Infringement Under 35 U.S.C. § 271(f)(2)

Pursuant to 35 U.S.C. § 271(f)(2), Google has also infringed by supplying software components in or from the United Sates to be combined, installed, loaded, and/or used by others outside of the United States –where these software components are components of the patented inventions that have no substantial noninfringing use and are not staple articles or commodities of commerce – with knowledge that these software components were especially made or adapted for use and an intent that these software components would be combined, installed, loaded, and/or used outside the United States such that, if such combination, installation, load, and/or use occurred within the United States (as it does pursuant to the theories set forth above), it would infringe the Asserted Claims of the Asserted Patents. And these combinations by those outside of the United States do in fact occur. Accordingly, by supplying such software components in or from the United States, Google is liable for infringement under 35 U.S.C. § 271(f)(2).

’014 Patent: Despite knowing of the ’014 Patent, Google supplies software components for performing the accused functionality as part of Google’s accused apps for installation onto Cast-enabled controllers outside the United States and also as part of Google’s Cast-enabled display software (e.g., firmware and/or Cast-enabled display software) for installation onto Cast-enabled displays outside the United States. Google intends that others outside the United States, including users, install these software components onto computer devices and Cast-enabled

displays and knows that such installation does in fact occur and that such installation, if occurring in the United States, would constitute "mak[ing]" an infringing device, thereby directly infringing each Asserted Claim of the '014 Patent under 35 U.S.C. § 271(a).

As another example, Google supplies software components for performing the accused functionality to third-party manufacturers, third-party distributers, or to an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs these software components onto computer devices outside of the United States. Google intends that these parties install these software components onto computer devices outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '014 Patent under 35 U.S.C. § 271(a).

Google knows the foregoing software components for performing the accused functionality are material components of infringing devices and the patented inventions that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be loaded, installed, and/or run on infringing Cast-enabled controllers

'949 Patent: Despite knowing of the '949 Patent, Google supplied software components for performing the accused functionality as part of Google's accused apps for installation onto Cast-enabled controllers outside the United States and also as part of Google's Cast-enabled display software (e.g., firmware and/or Cast-enabled display software) for installation onto Cast-enabled displays outside the United States. Google intended that others outside the United States, including users, install these software components onto computer devices and Cast-enabled displays and knew that such installation did in fact occur and that such installation, if occurring in the United States, would constitute "mak[ing]" an infringing device thereby directly infringing each Asserted Claim of the '949 Patent under 35 U.S.C. § 271(a).

As another example, Google supplied software components for performing the accused functionality to third-party manufacturers, third-party distributers, or to an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs

these software components onto computer devices outside of the United States. Google intended that these parties install these software components onto computer devices outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '949 Patent under 35 U.S.C. § 271(a).

As another example, Google supplied software components for performing the accused functionality to entities (including affiliated entities) that operate servers outside of the United States that host accused apps for download onto Cast-enabled controllers and/or software (e.g., firmware and/or Cast-enabled display software) for download onto Cast-enabled displays. Google intended that these entities load, store, or otherwise provide the accused apps and/or Cast-enabled display software onto these servers. If this combination were done within the United States, that act would constitute direct infringement of claims 8, 9, 11, and 12 of the '949 Patent by "mak[ing]" servers that host such software in violation of 35 U.S.C. § 271(a).

Google knew the foregoing software components for performing the accused functionality are material components of infringing devices and the patented inventions that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be loaded, installed, and/or run on infringing Cast-enabled controllers and Cast-enabled displays.

'258 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '258 Patent. Despite knowing of the '258 Patent, Google supplies in or from the United States software components for performing the accused functionality as part of firmware updates for Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute "mak[ing]" an infringing device and thereby directly infringe each Asserted Claim of the '258 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software

components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the '258 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in direct infringement of the '258 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of each Asserted Claim.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the '258 Patent. For example, users have, outside of the United States, installed the supplied software components included as part of the firmware updates onto Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '258 Patent under 35 U.S.C. § 271(a).

'959 Patent: Sonos contends that each '959 Cast-enabled media player infringes each Asserted Claim of the '959 Patent. Despite knowing of the '959 Patent, Google supplies in or from the United States software components for performing the accused functionality as part of firmware updates for '959 Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute "mak[ing]" an infringing device and thereby directly infringe each Asserted Claim of the '959 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are

material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the '959 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on '959 Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in direct infringement of the '959 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of each Asserted Claim.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the '959 Patent. For example, users have, outside of the United States, installed the supplied software components included as part of the firmware updates onto '959 Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated '959 Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto '959 Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '959 Patent under 35 U.S.C. § 271(a).

'715 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '715 Patent. Despite knowing of the '715 Patent, Google supplies in or from the United States software components for performing the accused functionality as part of firmware updates for Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute "mak[ing]" an

infringing device and thereby directly infringe each Asserted Claim of the '715 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the '715 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in (and continues to result in) direct infringement of the '715 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of each Asserted Claim.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the '715 Patent. For example, users have, outside of the United States, installed the supplied software components included as part of the firmware updates onto Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '715 Patent under 35 U.S.C. § 271(a).

'953 Patent: Sonos contends that each '953 Cast-enabled media player infringes each Asserted Claim of the '953 Patent. Despite knowing of the '953 Patent, Google supplies in or

from the United States software components for performing the accused functionality as part of firmware updates for '953 Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute "mak[ing]" an infringing device and thereby directly infringe each Asserted Claim of the '953 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the '953 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on '953 Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in direct infringement of the '953 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of each Asserted Claim.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the '953 Patent. For example, users have, outside of the United States, installed the supplied software components included as part of the firmware updates onto '953 Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated '953 Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto '953 Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '953 Patent under 35 U.S.C. § 271(a).

'896 Patent: Despite knowing of the '896 Patent, Google supplies software components for performing the accused functionality as part of Google's accused apps for installation onto Cast-enabled controllers outside the United States. Google intends that others outside the United States, including users, install these software components onto computer devices and knows that such installation does in fact occur and that such installation, if occurring in the United States, would constitute "mak[ing]" an infringing device thereby directly infringing each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As another example, Google supplies software components for performing the accused functionality to third-party manufacturers, third-party distributers, or to an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs these software components onto computer devices outside of the United States. Google intends that these parties install these software components onto computer devices outside of the United States. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '896 Patent under 35 U.S.C. § 271(a).

As another example, Google supplies software components for performing the accused functionality to entities (including affiliated entities) that operate servers outside of the United States that host accused apps for download onto Cast-enabled controllers. Google intends that these entities load, store, or otherwise provide the accused apps onto these servers. If this combination were done within the United States, that act would constitute direct infringement of claims 13, 15, 17, and 18 of the '896 Patent by "mak[ing]" and/or "us[ing]" servers that host such software in violation of 35 U.S.C. § 271(a).

Google knows the foregoing software components for performing the accused functionality are material components of infringing devices and the patented inventions that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be loaded, installed, and/or run on infringing Cast-enabled controllers.

'883 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the '883 Patent. Despite knowing of the '883 Patent, Google supplies in or from the United States software components for performing the accused functionality as part of firmware updates for Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute "mak[ing]" an infringing device and thereby directly infringe each Asserted Claim of the '883 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the '883 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in (and continues to result in) direct infringement of the '883 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of every asserted claims.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the '883 Patent. For example, users have, outside of the United States, installed the supplied software components included as part of the firmware updates onto Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto Cast-enabled media players. If this

combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '883 Patent under 35 U.S.C. § 271(a).

'025 Patent: Sonos contends that each '025 Cast-enabled media player infringes each Asserted Claim of the '025 Patent. Despite knowing of the '025 Patent, Google supplies in or from the United States software components for performing the accused functionality as part of firmware updates for '025 Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute "mak[ing]" an infringing device and thereby directly infringe each Asserted Claim of the '025 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the '025 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on '025 Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in (and continues to result in) direct infringement of the '025 Patent under 35 U.S.C. § 271(a) because each such installation "makes" an updated player that meets every element of every asserted claims.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the '025 Patent. For example, users have, outside of the United States, installed the supplied software components included as part of the firmware updates onto '025 Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated '025 Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto ’025 Cast-enabled media players. If this combination were done within the United States, that act would constitute “mak[ing]” an infringing device, which constitutes direct infringement of each Asserted Claim of the ’025 Patent under 35 U.S.C. § 271(a).

’001 Patent: Sonos contends that each Cast-enabled media player infringes each Asserted Claim of the ’001 Patent. Despite knowing of the ’001 Patent, Google supplies in or from the United States software components for performing the accused functionality as part of firmware updates for Cast-enabled media players, and users install such a firmware update outside of the United States in a manner that, if done within the United States, would constitute “mak[ing]” an infringing device and thereby directly infringe each Asserted Claim of the ’001 Patent under 35 U.S.C. § 271(a). The software components included in the firmware updates are material components of the patented invention that are not staple articles or commodities of commerce suitable for substantial noninfringing use because the only possible use for these software components is to be installed and run on Cast-enabled media players, which constitute infringing devices.

Along with its actual knowledge of the ’001 Patent, Google knew (or should have known) that the software components included in the firmware updates were especially made or adapted for installation on Cast-enabled media players, and that installation of these software components by others outside the United States would, if done within the United States, have resulted in (and continues to result in) direct infringement of the ’001 Patent under 35 U.S.C. § 271(a) because each such installation “makes” an updated player that meets every element of every asserted claims.

Moreover, as a result of Google providing such firmware updates others have outside of the United States combined the firmware updates in a manner that, if done within the United States, would constitute direct infringement of each Asserted Claim of the ’001 Patent. For example, users have, outside of the United States, installed the supplied software components

included as part of the firmware updates onto Cast-enabled media players outside the United States, which if done within the United States would constitute "making" updated Cast-enabled media players, which constitutes direct infringement.

As another example, Google provides firmware to manufacturers, third-party distributers, or an otherwise affiliated entity that acts in a manufacturer or distributor role, who then, outside of the United States installs or loads such firmware onto Cast-enabled media players. If this combination were done within the United States, that act would constitute "mak[ing]" an infringing device, which constitutes direct infringement of each Asserted Claim of the '001 Patent under 35 U.S.C. § 271(a).

D. Identification of Priority Dates Pursuant to S.P.R. 2.1.4

Sonos contends that: (a) each Asserted Claim of the '014 Patent is entitled to a priority date no later than June 5, 2004; (b) each Asserted Claim of the '949 Patent is entitled to a priority date no later than June 5, 2004; (c) each Asserted Claim of the '258 Patent is entitled to a priority date no later than April 1, 2004; (d) each Asserted Claim of the '959 Patent is entitled to a priority date no later than April 8, 2011; (e) each Asserted Claim of the '715 Patent is entitled to a priority date no later than April 1, 2004; (f) each Asserted Claim of the '953 Patent is entitled to a priority date no later than July 28, 2003; (g) each Asserted Claim of the '896 Patent is entitled to a priority date no later than June 5, 2004; (h) each Asserted Claim of the '883 Patent is entitled to a priority date no later than June 5, 2004; (i) each Asserted Claim of the '025 Patent is entitled to a priority date no later than January 25, 2011; and (j) each Asserted Claim of the '001 Patent is entitled to a priority date no later than April 1, 2004.

E. Identification of Practicing Instrumentalities Pursuant to S.P.R. 2.1.5

Pursuant to S.P.R. 2.1.5, Sonos identifies the following Sonos devices or other instrumentalities that incorporate or reflect, or that incorporated or reflected, the claimed inventions of the Asserted Patents:

'014 Patent: All Asserted Claims

- Sonos CR100 and CR200; and
- Any user device (e.g., smartphone, tablet, or other computers) provisioned with

Sonos's controller app.

'949 Patent: *At least Asserted Claims 1, 2, 5, 8, 9, 12*

- Sonos CR100 and CR200; and
- Any user device (e.g., smartphone, tablet, or other computers) provisioned with Sonos's controller app.

'258 Patent: *All Asserted Claims*

- ZP100, ZP80, ZP90, ZP120, Connect, Connect:Amp, Port, and Amp;
- Play:1, Play:3, Play:5, Playbar, and Playbase;
- One, One SL, Roam, Move, Five, Beam, Ray, Arc, Era 100, Era 300; and
- SYMFONISK table lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker.

'959 Patent: *All Asserted Claims*

- Play:1, Play:3, Play:5, Playbar, Playbase, and Sub;
- One, One SL, Roam, Move, Five, Beam, Ray, Arc, Era 100, Era 300, and Sub Mini; and
- SYMFONISK table lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker.

'953 Patent: *All Asserted Claims*

- ZP100, ZP80, ZP90, ZP120, Connect, Connect:Amp, Port, and Amp;
- Play:1, Play:3, Play:5, Playbar, Playbase, and Sub;
- One, One SL, Roam, Move, Five, Beam, Ray, Arc, Era 100, Era 300, and Sub Mini; and
- SYMFONISK table lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker.

'896 Patent: *All Asserted Claims*

- Sonos CR100 and CR200; and
- At least any user device (e.g., smartphone, tablet, or other computers) provisioned with Sonos's controller app of a version corresponding with a "Floyd" or later firmware.

'883 Patent: *All Asserted Claims*

- ZP100, ZP80, ZP90, ZP120; and
- Connect, Connect:Amp, Port, Amp, Play:1, Play:3, Play:5, Playbar, Playbase, One, One SL, Roam, Move, Five, Beam, Ray, Arc, Era 100, Era 300, Sub, and Sub Mini provisioned with version 9.0 or later firmware.

'025 Patent: *All Asserted Claims*

- Play:1, Play:3, Play:5; and
- One, One SL, Roam, Move, Five, Era 100, and Era 300.

'001 Patent: *All Asserted Claims*

- ZP100, ZP80, ZP90, ZP120, Connect, Connect:Amp, Port, and Amp;
- Play:1, Play:3, Play:5, Playbar, and Playbase; and
- One, One SL, Roam, Move, Five, Beam, Ray, Arc, Era 100, and Era 300.

In fact, in the 1191 ITC investigation, the Commission determined that the following Sonos devices or other instrumentalities practiced a number of the Asserted Claims:

Patent No.	Asserted Claim(s)	Instrumentality
'258 Patent	17, 21, 24, 26	Play:1, Play:3, Play:5, One, One SL, Move, Five, Playbar, Playbase, Beam, Arc, Connect, Connect:Amp, Port, Amp, SYMFONISK table lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker
'953 Patent	7, 14, 22, 23, 24	Play:1, Play:3, Play:5, One, One SL, Move, Five, Playbar, Playbase, Beam, Arc, Sub, Connect, Connect:Amp, Port, Amp, SYMFONISK table lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker
'959 Patent	10	Play:1, Play:3, Play:5, One, One SL, Move, Five, Playbar, Playbase, Beam, Arc, SYMFONISK table lamp, WiFi speaker, and SYMFONISK bookshelf WiFi speaker
'949 Patent	1, 2, 5	User devices (such as smartphones, tablets, or other computers) installed with Sonos's controller app
'896 Patent	1, 5, 6, 12	User devices (such as smartphones, tablets, or other computers) installed with Sonos's controller app

Ex. 134 [Inv. No. 337-TA-1191 Initial Determination – Public Version], p. 44, 45, 82, 83, 108, 167; ID 731374 [Summary Determination – Public Version], p. 8.

F. Identification of Willful Infringement Bases Pursuant to S.P.R. 2.1.6

Sonos contends that Google has willfully infringed, and continues willfully infringing, each Asserted Claim of each Asserted Patent. Example bases for this contention are set forth in paragraphs 38-76 of Sonos's Second Amended Complaint. Dkt. 68.

Moreover, discovery that Google has not yet produced may provide additional evidence that shows Google has willfully infringed the Asserted Patents. Sonos therefore reserves its right to amend and/or modify its willful infringement contentions as discovery in this case progresses, under S.P.R. 4.1, or as otherwise permitted by the Court.

II. Document Production Accompanying Disclosure

A. Documents Pursuant to S.P.R. 2.2.1

Pursuant to S.P.R. 2.2.1, Sonos has produced documents bearing production numbers SONOS-ITC-00000282 – SONOS-ITC-00037952, SONOS-ITC-00050103 – SONOS-ITC-00105172, and SONOS-SVG1-00000724 – SONOS-SVG1-00095425

B. Documents Pursuant to S.P.R. 2.2.2

Pursuant to S.P.R. 2.2.2, Sonos has produced documents bearing production numbers SONOS-ITC-00000200 SONOS-ITC-00000281, SONOS-SVG1-00000698 – SONOS-SVG1-00000723, and SONOS-SVG1-00095426 – SONOS-SVG-00095429.

C. Documents Pursuant to S.P.R. 2.2.3

Pursuant to S.P.R. 2.2.3, Sonos produced documents in the 1191 ITC investigation that demonstrate the operation of the instrumentalities identified above pursuant to S.P.R. 2.1.5, including but not limited to: SONOS-ITC-00397695 - SONOS-ITC-00397808 [Sonos Digital Music System User Guide - 2005]; SONOS-ITC-00164995 - SONOS-ITC-00165049 [Sonos Controller for iPad User Guide - 2010]; SONOS-ITC-00226070 - SONOS-ITC-00226077 [Sonos Changelog - 2014]; SONOS-ITC-00248320 - SONOS-ITC-00248321 [3/17/2004 email re 'join household' rework for wireless]; SONOS-ITC-00248942 - SONOS-ITC-00248951 [Stereo Pair Design]; SONOS-ITC-00158137 - SONOS-ITC-00158148 [Sonos System Overview]; SONOS-ITC-00704671 - SONOS-ITC-00704797 [Sonos User Guide - 2020]; SONOS-ITC-00158017 - SONOS-ITC-00158128 [Sonos User Guide - 2019]; SONOS-ITC-00366546 - SONOS-ITC-

00366581 [SYMFONISK Guide]; SONOS-ITC-00704816 - SONOS-ITC-00704819 [SYMFONISK WiFi Speakers]; SONOS-ITC-00158179–SONOS-ITC-00158182 [Setting up your Sonos system]; SONOS-ITC-00256685 - SONOS-ITC-00256706 [CS Briefing – Eliminator Floyd]; SONOS-ITC-00342568 - SONOS-ITC-00342575 [CC Briefing - Floyd - Setup Wizard]; SONOS-ITC-00342528 - SONOS-ITC-00342549 [Setup Flow Golden Paths]; SONOS-ITC-00342033 - SONOS-ITC-00342037 [7. BLE Setup]; SONOS-ITC-00342577 - SONOS-ITC-00342601 [Netstart Protocol]; SONOS-ITC-00342798 - SONOS-ITC-00342804 [Group Linking and Unlinking]; SONOS-ITC-00257852 - SONOS-ITC-00257855 [Zone Grouping]; SONOS-ITC-00248921 - SONOS-ITC-00248923 [UPnP Services]; SONOS-ITC-00343547 - SONOS-ITC-00343559 [Muse Protocol – "groups" namespace]; SONOS-ITC-00248895 - SONOS-ITC-00248899 [Sonos Player Group Overview]; SONOS-ITC-00248798 -SONOS-ITC-00248803 [Audio Sync]; SONOS-ITC-00232879 - SONOS-ITC-00232883 [Zone group synchronization using SNTP]; SONOS-ITC-00342915 - SONOS-ITC-00342918 [Stereo Pairs and Bonded Devices]; SONOS-ITC-00341673 [UPnP commands for Converting a Zone Player into a Satellite]; SONOS-ITC-00342057 - SONOS-ITC-00342059 [Audio Pipeline 2.0 DSP block distribution]; SONOS-ITC-00342042 - SONOS-ITC-00342043 [ChannelSink HT]; SONOS-ITC-00342894 - SONOS-ITC-00342899 [Sonos Player and Player Group Discovery Guide]; SONOS-ITC-00342961 - SONOS-ITC-00342964 [Zone Group Topology]; SONOS-ITC-00342954 - SONOS-ITC-00342960 [ZoneGroupState Variable for Home Theater Satellites]; SONOS-ITC-00248860 - SONOS-ITC-00248880 [MediaRenderer:Queue]; SONOS-ITC-00248900 - SONOS-ITC-00248912 [Sonos Queue Overview]; SONOS-ITC-00158162 - SONOS-ITC-00158169 [Sonos Developer – Subscribe]; SONOS-ITC-00343623 - SONOS-ITC-00343633 [Muse Protocol]; SONOS-ITC-00257980 [Household Controller Limitation]; SONOS-ITC-00248840 - SONOS-ITC-00248842 [Getting Started with the Sonos UPnP API]; SONOS-ITC-00257173 - SONOS-ITC-00257179 [MediaRenderer:GroupRenderingControl]; SONOS-ITC-00248843 - SONOS-ITC-00248850 [Group Rendering Control Guide]; SONOS-ITC-00257477 - SONOS-ITC-00257488 [Sonos Controller Terminology / Applications Areas]; SONOS-ITC-00262246 - SONOS-ITC-00262249 [Group Coordinator Delegation]; SONOS-

ITC-00707694 - SONOS-ITC-00707719 [Sonos Changelog]. Sonos also identifies and incorporates by reference: https://www.sonos.com/en-us/guides/sonossystem.

In the 1191 ITC investigation, Sonos made available for inspection Sonos source code that demonstrates the operation of the instrumentalities identified above pursuant to S.P.R. 2.1.5. Sonos intends to make such source code available for inspection in this action.

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