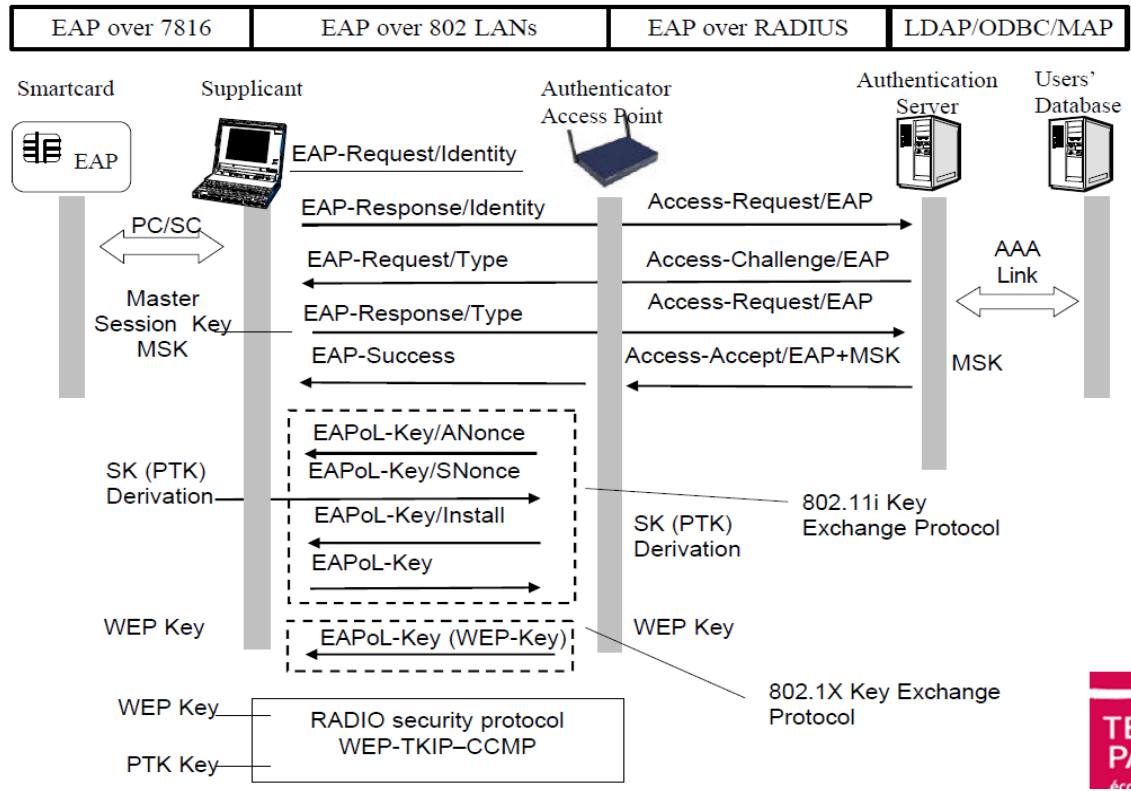


1
2 EAP standards, like EAP-SIM and EAP-TLS also combine multiple
3 communication paths:



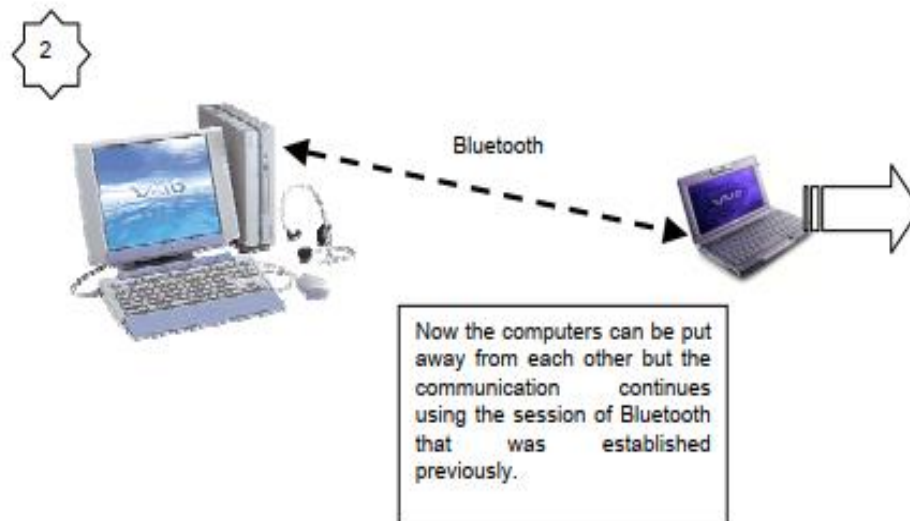
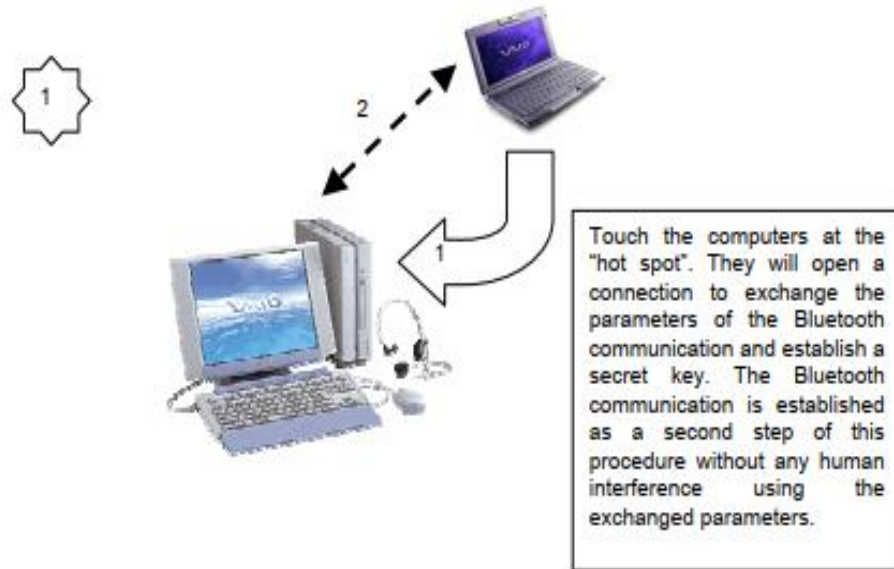
17 EAP-TLS Smartcards, from Dream to Reality, Pascal Urien, Mohamed Badra,
18 Mesmin Dandjinou, 4th Workshop on Applications and Services in Wireless
19 Networks, Boston University, Massachusetts, USA (August 9th, 2004).

20 Near Field Communications (“NFC”) technology was also used to help with
21 setup through different communication paths.

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2.2 Set up of communication for other protocols

Imagine that you would like to transfer a large amount of information between two computers – a desktop and a laptop. Let's say you want to transfer a presentation file. Using NFC may be slow and we decide to use something with more bandwidth. Let's say for this example we use Bluetooth. Now, to set up Bluetooth communication between two computers we would need to set it up manually with a password to protect the communication. Using NFC we can set up this communication by simply touching the two computers:



The same procedure can be used to establish a wireless (Bluetooth, WiFi etc.) link between two pieces of computer or consumer electronics equipment like TVs, laptop computers, PDAs, mobile phones and so on.

<http://web.archive.org/web/20050513015811/http://www.ecma-international.org/activities/Communications/2004tg19-001.pdf>.

1 Even graduate students discussed the common scenarios where this
2 technology was already used:

3 Example 1: A traveler wants to use the airport waiting lounge printer to
4 wirelessly print a document from his PDA. The document is personal and the
5 traveler does not want to share it with the whole waiting lounge. 23 CHAPTER 3.
6 REQUIREMENTS 24 The PDA of the traveler and the waiting lounge printer are
7 both equipped with wireless network interfaces that can be used for local
8 communication. In addition, an RFID tag is attached to the printer and the PDA has
9 an RFID reader. There is no prior security context between these two devices, that is
10 the PDA and the printer do not share any keys or possess certificates issued by
11 mutually trusted CAs. The traveler forms the secure connection between the two
12 devices by touching the printer with his PDA. During the touch, the RFID reader of
13 the PDA reads the contents of the RFID tag. After that, the secure connection is set
14 up using the information received from the RFID tag of the printer. The traveler can
15 now print his personal document securely.

16 Example 2: A home user wants to set up a secure connection between his
17 computer and camera phone, so that he can securely upload pictures from his
18 camera phone to his computer. The connection must be secured, so that the wireless
19 picture traffic takes place between just the camera phone and the computer, and no
20 outsider devices can receive the pictures sent by the camera phone. Both of the
21 devices are equipped with wireless network interfaces, and in addition, the computer
22 and the camera phone both have infrared ports. Like in the previous example, there
23 is no prior security context between these devices. The home user brings his camera
24 phone close to his computer. The two devices set up an infrared link and exchange
25 information using that link. After that, secure connection is set up between these two
26 devices, and the home user can upload the pictures from his phone to his computer
27 securely.

1 Example 3: A group of businessmen forms an ad hoc network for
2 conferencing when they meet outside the office. The businessmen want to share
3 company confidential material and thus the communication must be secured. Each
4 of the businessmen has a laptop with a wireless network card and an infrared port.
5 Also one of the businessmen has a mobile phone that has an infrared interface. No
6 prior security context exists between the laptops of the businessmen. The
7 businessman with the mobile phone moves his phone close to all the laptops one at a
8 time. The mobile phone and the laptops establish infrared links and exchange
9 information using that link. After that, the secure group connection is set up between
10 the users.

11 Institutive Security Initiation Using Location-Limited Channels, Kari
12 Kostianen (April 2004)
13 ([http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.95.4930&rep=rep1&type](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.95.4930&rep=rep1&type=pdf)
14 [=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.95.4930&rep=rep1&type=pdf)).

15 (a) **Obviousness Contentions**

16 (i) The '949 Patent

17 The following is a list of prior art references that, either alone, or in
18 combination with the knowledge of a person of ordinary skill in the art, Applicant's
19 Admitted Prior Art, and/or the additional prior art references discussed below, and
20 in Exhibits 949-1 through 949-B would have rendered obvious one or more Asserted
21 Claims of the '949 patent, including as indicated in the associated claim charts. A
22 person of ordinary skill in the art would have been motivated and had a reasonable
23 expectation of success to make these combinations because, for example, each
24 would have been merely: (a) a combination of prior art elements according to
25 known methods to yield predictable results; (b) a simple substitution of one known
26 element for another to obtain predictable results; (c) a use of a known technique to
27 improve similar devices in the same way; (d) application of a known technique to a
28 known device ready for improvement to yield predictable results; (e) obvious to try;

1 and/or (f) known work in one field of endeavor prompting variations of it for use in
 2 either the same field or a different one based on design incentives or other market
 3 forces since the variations are predictable to one of ordinary skill in the art.

4 As set forth with more detail in Exhibits 949-1 through 949-B, Defendant
 5 contends that all claims are rendered obvious by the identified reference(s) alone, or
 6 in combination with other references, including the references identified below and
 7 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
949-1	Bose	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
949-2	Isely	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
949-3	Cd3o	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
949-4	Russound	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
949-5	Geiwitz	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
949-6	Allen	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or

Exhibit No.	Reference	In Combination With
		various references cited in the Obviousness exhibit
949-B	Obviousness, citing various references	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '949 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '949 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 949-1 through 949-B and/or with a POSITA's general knowledge. Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 949-1 through 949-B, including for the reasons below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as further described below.

The alleged invention of the '949 patent relates to a controller with a user interface that can form a group including playback devices and control volumes of all players, individually and collectively, in the zone group.

The asserted claims recite elements that were conventional in a home or audio device controller connected to one or more audio devices well before the priority date of the '949 patent. For example, use of a user interface to control plurality of audio playing devices to play the same source was well-known prior to the '949

1 patent and the prior art is replete with teachings that confirm this knowledge. *See*
2 *generally, e.g.*, Bose; Isely; Russound; Cd3o; Geiwitz.

3 Use of a user interface to control volumes of plurality of audio playing
4 devices was also well-known prior to the '949 patent and the prior art is replete with
5 teachings that confirm this knowledge. *See generally, e.g.*, Bose; Isely; Russound;
6 Cd3o; Geiwitz.

7 In sum, by the time the '949 patent was filed, it was well known to provide a
8 user interface to form groups to play common source and control volumes of
9 plurality of audio playing devices as claimed at least because all the above was well
10 known in the art before the '949 patent, and a POSITA would have known that any
11 and/or all the above techniques could be combined to provide “a multimedia
12 controller including a processor” that provides a user interface to form groups and
13 control volumes of plurality of audio playing devices. This is especially true here
14 because all of the references disclose a user interface to control plurality of audio
15 playing devices. As such, a POSITA would have logically and predictably
16 consulted all of the references together to derive the alleged invention in the '949
17 patent.

18 Further, the knowledge described above and below would have provided the
19 basis for combining any number of known Applicant's Admitted Prior Art, and/or
20 the additional prior art references discussed above, and in Exhibits 949-1 through
21 949-B. Because all of these techniques were already known in the art for use in a
22 home or audio device controller connected to one or more audio devices, a POSITA
23 would have understood that combining any/all of these techniques would have
24 yielded predictable results, would have been a simple substitution of one known
25 technique for another to obtain predictable results, would have used known
26 techniques to improve similar techniques in the same way, would have applied a
27 known technique to a known method that was ready for improvement to yield
28 predictable results, would have been obvious to try because the techniques were all

1 known and there was reasonable expectation of success in combining them, would
2 have been obvious to try to improve a home or audio device controller connected to
3 one or more audio devices, and would have been obvious because all techniques
4 were already known and combined in various fashions before. This is especially
5 true given the '949 patent and prior art relate to different user interfaces based on
6 design changes in the audio system. A POSITA would have been motivated to use,
7 try, and combine different user interfaces to create another user interface (like the
8 '949 patent) based on user needs and the audio system. Implementing the
9 combination and any necessary modifications would have been routine and within
10 the scope of the prior art references' teachings. With respect to the prior art
11 references in Exhibits 949-1 through 949-B, a POSITA would have been motivated
12 to combine any of the references to render the asserted claims of the '949 patent
13 obvious for at least the reasons above and below.

14 First, the prior art references identified above and the accompanying
15 invalidity claim charts teach similar home or audio device controller that can control
16 volumes of one or more audio devices (and within relevant timeframes), and thus
17 the teachings of any one reference are applicable to other references in that same
18 field. *See generally, e.g.*, Bose; Isely; Russound; Cd3o; Geiwitz.

19 Second, a POSITA would have been motivated and found it obvious to apply
20 references teaching certain specific techniques—*e.g.*, Isely, Geiwitz, C-Media Xear,
21 Yamaha Personal Receiver—to other references that relate to playback devices
22 generally because they relate to use of user interface to control plurality of playback
23 devices apply to any playback devices. *See generally, e.g.*, Bose; Isely; Russound;
24 Cd3o; Geiwitz.

25 A POSITA would have also been motivated and found it obvious to replace
26 and/or combine a reference's exact set of materials, components, or configurations
27 for all the reasons provided above and below. These modifications would have been
28 a simple substitution of one known element for another, which would have obtained

1 predictable results because it was already well known in the art that teaches use of
2 user interface to form groups and control volumes and playback devices. The
3 substitution of one component, material, or configuration for another would not
4 have changed the principle of operation for either reference in any combination
5 because the references all use similar mechanisms for a similar purpose: use of user
6 interface to control plurality of playback devices. This is thus a combination of
7 prior art elements (*e.g.*, use of a user interface to group and control volumes of
8 plurality of playback devices) according to known methods (a POSITA would
9 understand that these are all available design choices) to yield predictable results (a
10 POSITA would understand the benefits and drawbacks of each design choice, and
11 there are no unexpected results from any particular combination). This is especially
12 true given the '949 patent and prior art relate to different user interfaces based on
13 different audio systems. *E.g.*, compare '949 patent, claim 1 with Bose (a controller
14 with a user input to control plurality of playback devices), Russound (same), and
15 Geiwitz (same). A POSITA would have been motivated to use, try, and combine
16 different user interfaces to yield another user interface (like the '949 patent) based
17 on user needs and the audio system.

18 Further, a POSITA would have been motivated to combine these teachings,
19 and to make these replacements, because all of these user interface to control
20 plurality of playback devices components, materials, and configurations were
21 widely-used techniques. For example, a POSITA would have been motivated to
22 combine teachings from Bose with teachings from Geiwitz to allow a user to change
23 zone group names as claimed in claim 5 of the '949 patent. Indeed, a POSITA
24 would have been especially motivated to combine these two teachings because both
25 relate to different user interfaces, thus, a POSITA would have had a clear
26 expectation of success and expect a predictable result given adding new features to a
27 user interface does not require nothing more than a simple modification.

28

1 Accordingly, a POSITA would have had a reasonable expectation of success
2 given considerations discussed above, the similarities in the teachings and systems,
3 and given that the claimed components and configurations of controller with a user
4 interface to control plurality of playback devices were all well-known at the time.
5 Implementing the combination and any necessary modifications would have been
6 routine and within the scope of the prior art references' teachings.

7 For example, to the extent that Bose or Isely does not disclose the “configured
8 to accept via the user interface an input to name the player group” limitation, it
9 would have been obvious to combine any of these references with, e.g., Geiwitz;
10 Christensen; Farinelli, to arrive at said limitation because those references disclose
11 such limitation, and a POSITA would have been motivated to consult references that
12 disclose accepting a user input to name of the player group. *See, e.g.,* Geiwitz;
13 Christensen; Farinelli.

14 Also, to the extent that Isely does not disclose the “accept via the user
15 interface a group-level input to adjust a volume associated with the player group,
16 wherein the group-level input to adjust the volume associated with the player group
17 causes each of the players in the player group to adjust its respective volume”
18 limitation, it would have been obvious to combine any of these references with, e.g.,
19 Bose, Russound, Geiwitz, to arrive at said limitation because those references
20 disclose such limitation, and a POSITA would have been motivated to consult
21 references that disclose “adjusting a group-level input to adjust a volume associated
22 with the player group.” *See, e.g.,* Bose; Russound; Geiwitz. A POSITA would have
23 had a had a clear expectation of success and expect a predictable result given adding
24 new features to a user interface does not require nothing more than a simple
25 modification.

26 Additional obviousness combinations of the references identified here are
27 possible, and Defendant may rely on such combination(s) in this litigation. In
28 particular, Defendant is currently unaware of Sonos's allegations with respect to the

1 level of skill in the art and the qualifications of a POSITA. Defendant is also
2 unaware of the extent, if any, to which Sonos may contend that limitations of the
3 claims at issue are not disclosed in the prior art identified by defendant as
4 anticipatory, and the extent to which Sonos will contend that elements not disclosed
5 in the asserted patent specifications would have been known to a POSITA. And
6 Defendant does not yet know how the Court will construe terms in the asserted
7 claim. Defendant is also continuing its investigation of the large universe of prior
8 art to identify potential prior art systems, publications related to those systems, and
9 third parties that may have information about those systems. Defendant reserves the
10 right to amend and supplement these contentions to identify other prior art and
11 combinations rendering the asserted claim obvious.

12 (ii) The '014 Patent

13 The following is a list of prior art references that, either alone, or in
14 combination with the knowledge of a person of ordinary skill in the art, Applicant's
15 Admitted Prior Art, and/or the additional prior art references discussed below, and
16 in Exhibits 014-1 through 014-B would have rendered obvious one or more Asserted
17 Claims of the '014 patent, including as indicated in the associated claim charts. A
18 person of ordinary skill in the art would have been motivated and had a reasonable
19 expectation of success to make these combinations because, for example, each
20 would have been merely: (a) a combination of prior art elements according to
21 known methods to yield predictable results; (b) a simple substitution of one known
22 element for another to obtain predictable results; (c) a use of a known technique to
23 improve similar devices in the same way; (d) application of a known technique to a
24 known device ready for improvement to yield predictable results; (e) obvious to try;
25 and/or (f) known work in one field of endeavor prompting variations of it for use in
26 either the same field or a different one based on design incentives or other market
27 forces since the variations are predictable to one of ordinary skill in the art.

28

1 As set forth with more detail in Exhibits 014-1 through 014-B, Defendant
 2 contends that all claims are rendered obvious by the identified reference(s) alone, or
 3 in combination with other references, including the references identified below and
 4 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
014-1	Bose	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
014-2	Isely	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
014-3	Cd3o	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
014-4	Russound	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
014-5	Geiwitz	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
014-6	Allen	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or various references cited in the Obviousness exhibit
014-B	Obviousness, citing various references	Bose, Isely, Cd3o, Russound, Geiwitz, Allen, C-Media Xear, Yamaha Personal Receiver, Christensen and/or

Exhibit No.	Reference	In Combination With
		various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '014 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '014 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 014-1 through 014-B and/or with a POSITA's general knowledge.

Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 014-1 through 014-B, including for the reasons described below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as further described below.

The alleged invention of the '014 patent relates to a controller with a user interface that can form a group including playback devices and control volumes of all players, individually and collectively, in the group.

The asserted claims recite elements that were conventional in a home or audio device controller connected to one or more audio devices well before the priority date of the '014 patent. As an example, use of a user interface to control plurality of audio playing devices to play the same source was well-known prior to the '014 patent and the prior art is replete with teachings that confirm this knowledge. *See generally, e.g.,* Bose; Isely; Russound; Cd3o; Geiwitz.

Use of a user interface to control volumes of plurality of audio playing devices was also well-known prior to the '014 patent and the prior art is replete with

1 teachings that confirm this knowledge. *See generally, e.g.,* Bose; Isely; Russound;
2 Cd3o; Geiwitz.

3 In sum, by the time the '014 patent was filed, it was well known to provide a
4 user interface to form a group and control volumes of plurality of audio playing
5 devices as claimed at least because all the above was well known in the art before
6 the '014 patent, and a POSITA would have known that any and/or all the above
7 techniques could be combined to provide an “apparatus for controlling a plurality of
8 players.” This is especially true here because all of the references disclose a user
9 interface to control plurality of audio playing devices. As such, a POSITA would
10 have logically and predictably consulted all of the references together to derive the
11 alleged invention in the '014 patent.

12 Further, the general background knowledge described above and below would
13 have provided the basis for combining any number of known Applicant’s Admitted
14 Prior Art, and/or the additional prior art references discussed above, and in Exhibits
15 014-1 through 014-B. Because all of these techniques were already known in the art
16 for use in a home or audio device controller that can one or more audio devices, a
17 POSITA would have understood that combining any/all of these techniques would
18 have yielded predictable results, would have been a simple substitution of one
19 known technique for another to obtain predictable results, would have used known
20 techniques to improve similar techniques in the same way, would have applied a
21 known technique to a known method that was ready for improvement to yield
22 predictable results, would have been obvious to try because the techniques were all
23 known and there was reasonable expectation of success in combining them, would
24 have been obvious to try to improve a user interface that controls plurality of audio
25 devices, and would have been obvious because all techniques were already known
26 and combined in various fashions before. With respect to the prior art references in
27 Exhibits 014-1 through 014-B, a POSITA would have been motivated to combine
28

1 any of the references identified as prior art to the '014 patent for these reasons
2 provided above and the additional reasons provided below.

3 First, the prior art references identified above and the accompanying
4 invalidity claim charts teach similar home or audio device controller that can form a
5 group and control volumes of one or more audio devices (and within relevant
6 timeframes), and thus the teachings of any one reference are applicable to other
7 references in that same field. *See generally, e.g.*, Bose; Isely; Russound; Cd3o;
8 Geiwitz.

9 Second, a POSITA would have been motivated and found it obvious to apply
10 references teaching certain specific techniques—*e.g.*, Isely, Geiwitz, C-Media Xear,
11 Yamaha Personal Receiver—to other references that relate to playback devices
12 generally because they relate to use of user interface to control plurality of playback
13 devices. *See generally, e.g.*, Bose; Isely; Russound; Cd3o; Geiwitz.

14 A POSITA would have also been motivated and found it obvious to replace
15 and/or combine a reference's exact set of materials, components, or configurations
16 for all the reasons provided above and below. These modifications would have been
17 a simple substitution of one known element for another, which would have obtained
18 predictable results because it was already well known in the art that teaches use of
19 user interface to form a group and control volumes of one or more playback devices.
20 The substitution of one component, material, or configuration for another would not
21 have changed the principle of operation for either reference in any combination
22 because the references all use similar mechanisms for a similar purpose: use of user
23 interface to control plurality of playback devices. This is thus a combination of
24 prior art elements (*e.g.*, use of a user interface to group and control volumes of
25 plurality of playback devices) according to known methods (a POSITA would
26 understand that these are all available design choices) to yield predictable results (a
27 POSITA would understand the benefits and drawbacks of each design choice, and
28 there are no unexpected results from any particular combination). This is especially

1 true given the '014 patent and prior art relate to different user interfaces based on
2 design changes in the audio system. *E.g., compare '014 patent, claim 1 with Bose*
3 *(an apparatus with a user input to control plurality of playback devices), Russound*
4 *(same), and Geiwitz (same). A POSITA would have been motivated to use, try, and*
5 *combine different user interfaces to create another user interface (like the '014*
6 *patent) based on user needs and the audio system.*

7 Further, a POSITA would have been motivated to combine these teachings,
8 and to make these replacements, because all of these use of user interfaces to control
9 plurality of playback devices components, materials, and configurations were
10 widely used techniques. For example, a POSITA would have been motivated
11 combine teachings from Bose with teachings from Geiwitz to display a zone volume
12 input as an averaged volume of the players (or any other numerical or representative
13 value) to better guide a user when a user decides to change and/or monitor group
14 volume as claimed in claim 25 of the '014 patent. Indeed, a POSITA would have
15 been especially motivated to combine these teachings because both relate to user
16 interfaces, thus, a POSITA would have had a clear expectation of success and
17 expect a predictable result given adding new features to a user interface does not
18 require nothing more than a simple modification. Also, such motivation to combine
19 is prevalent in this industry because it is a common practice for a POSITA to receive
20 a user feedback about their user interface and make any modifications (or updates)
21 based on the feedback. In other words, a POSITA would have been strongly
22 motivated to change and combine teachings from other prior art to provide a better
23 functioning and more flexible user interface.

24 Accordingly, a POSITA would have had a reasonable expectation of success
25 given considerations discussed above, the similarities in the teachings and systems,
26 and given that the claimed components and configurations of controller with a user
27 interface to control plurality of playback devices were all well-known at the time.
28

1 Implementing the combination and any necessary modifications would have been
2 routine and within the scope of the prior art references' teachings.

3 As one example, to the extent that Bose or Isely does not disclose the
4 "displaying a zone group including players from the available players when at least
5 two of the available players are selected to form the zone group, wherein any one of
6 the players in the group serves as a zone group head" limitation, it would have been
7 obvious to combine any of these references with, e.g., Russound; Geiwitz, to arrive
8 at said limitation because those references disclose such limitation, and a POSITA
9 would have been motivated to consult references that disclose displaying a zone
10 group and selecting a player to serve as a leader. *See, e.g.,* Russound; Geiwitz.

11 As another example, to the extent that Bose does not disclose the "adjusting a
12 volume meter represented by an averaged value of audio volumes of the [p]layers in
13 the group, wherein said adjusting of the volume meter includes changing a volume
14 of each of the group of players synchronously in accordance with an adjustment
15 made by a user" limitation, it would have been obvious to combine any of these
16 references with, e.g., C-Media Xear; Yamaha Personal Receiver; Christensen, to
17 arrive at said limitation because those references disclose such limitation, and a
18 POSITA would have been motivated to consult references that disclose using a zone
19 group volume meter to change a volume of all players in the group. *See, e.g.,* C-
20 Media Xear; Yamaha Personal Receiver; Christensen. A POSITA would have had a
21 had a clear expectation of success and expect a predictable result given adding new
22 features to a user interface does not require nothing more than a simple
23 modification.

24 Additional obviousness combinations of the references identified here are
25 possible, and Defendant may rely on such combination(s) in this litigation. In
26 particular, Defendant is currently unaware of Sonos' allegations with respect to the
27 level of skill in the art and the qualifications of a POSITA. Defendant is also
28 unaware of the extent, if any, to which Sonos may contend that limitations of the

1 claims at issue are not disclosed in the prior art identified by defendant as
2 anticipatory, and the extent to which Sonos will contend that elements not disclosed
3 in the asserted patent specifications would have been known to a POSITA. And
4 Defendant does not yet know how the Court will construe terms in the asserted
5 claim. Defendant is also continuing its investigation of the large universe of prior
6 art to identify potential prior art systems, publications related to those systems, and
7 third parties that may have information about those systems. Defendant reserves the
8 right to amend and supplement these contentions to identify other prior art and
9 combinations rendering the asserted claim obvious.

10 (iii) The '959 Patent

11 The following is a list of prior art references that, either alone, or in
12 combination with the knowledge of a person of ordinary skill in the art, Applicant's
13 Admitted Prior Art, and/or the additional prior art references discussed below, and
14 in Exhibits 959-1 through 959-B would have rendered obvious one or more Asserted
15 Claims of the '959 patent, including as indicated in the associated claim charts. A
16 person of ordinary skill in the art would have been motivated and had a reasonable
17 expectation of success to make these combinations because, for example, each
18 would have been merely: (a) a combination of prior art elements according to
19 known methods to yield predictable results; (b) a simple substitution of one known
20 element for another to obtain predictable results; (c) a use of a known technique to
21 improve similar devices in the same way; (d) application of a known technique to a
22 known device ready for improvement to yield predictable results; (e) obvious to try;
23 and/or (f) known work in one field of endeavor prompting variations of it for use in
24 either the same field or a different one based on design incentives or other market
25 forces since the variations are predictable to one of ordinary skill in the art.

26 As set forth with more detail in Exhibits 959-1 through 959-B, Defendant
27 contends that all claims are rendered obvious by the identified reference(s) alone, or
28

1 in combination with other references, including the references identified below and
 2 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
959-1	Ramsay	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
959-2	Rocketfish	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
959-3	McCarty	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
959-4	Litback	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
959-5	Sasaki	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
959-6	Sonos Zoneplayer S5	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
959-B	Obviousness, citing various references	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit

1 To the extent that any of the anticipation references is found not to disclose a
2 limitation recited in the asserted claim of the '959 patent, it would have been
3 obvious to a POSITA at the time of the alleged invention of the '959 patent either (i)
4 to modify the reference to include this limitation and any remaining limitations of
5 this claim and/or (ii) to combine said reference with any other of the references in
6 Exhibits 959-1 through 959-B and/or with a POSITA's general knowledge.
7 Generally, motivation to combine any of these references with others exists within
8 the references themselves, as well as within the knowledge of those of ordinary skill
9 in the art at the relevant time. A POSITA would have been motivated to combine
10 any of the references described in attached Exhibits 959-1 through 959-B, including
11 for the reasons described below. A POSITA at the time of filing of the asserted
12 patents would also have understood the references listed above, alone or in
13 combination, to contain explicit and/or implicit teaching, suggestion, and/or
14 rationales to combine them, including as further described below.

15 The alleged invention of the '959 patent relates to a playback device that
16 performs first equalization or second equalization before it outputs audio to one or
17 more playback devices.

18 The asserted claims recite elements that were conventional in a home or audio
19 system connected to one or more audio devices well before the priority date of the
20 '959 patent. As an example, a home or audio system that has one or more audio
21 devices was well-known prior to the '959 patent and the prior art is replete with
22 teachings that confirm this knowledge. *See generally, e.g.,* Ramsay; Rocketfish;
23 McCarty; Litback; Sasaki.

24 Making changes to equalization settings before outputting audio from one or
25 more audio devices was also well-known prior to the '959 patent and the prior art is
26 replete with teachings that confirm this knowledge. *See, e.g.,* Ramsay; Rocketfish;
27 McCarty; Litback; Sasaki; Goh 463; Fincham.

28

1 In sum, by the time the '959 patent was filed, it was well known to change
2 equalization settings before outputting audio from one or more audio devices as
3 claimed at least because all the above was well known in the art before the '959
4 patent, and a POSITA would have known that any and/or all the above techniques
5 could be combined to provide “a playback device configured to output audio in a
6 multi-channel listening environment.” This is especially true here because all of the
7 references disclose a playback that output audio in a single- and multi-channel
8 environment. As such, a POSITA would have logically and predictably consulted
9 all of the references together to derive the alleged invention in the '959 patent.

10 Further, the general background knowledge described above and below would
11 have provided the basis for combining any number of known Applicant's Admitted
12 Prior Art, and/or the additional prior art references discussed below, and in Exhibits
13 959-1 through 959-B. Because all of these techniques were already known in the art
14 for use in a home or audio device controller that can one or more audio devices, a
15 POSITA would have understood that combining any/all of these techniques would
16 have yielded predictable results, would have been a simple substitution of one
17 known technique for another to obtain predictable results, would have used known
18 techniques to improve similar techniques in the same way, would have applied a
19 known technique to a known method that was ready for improvement to yield
20 predictable results, would have been obvious to try because the techniques were all
21 known and there was reasonable expectation of success in combining them, would
22 have been obvious to try to improve a home or audio device controller connected to
23 one or more audio devices, and would have been obvious because all techniques
24 were already known and combined in various fashions before. This is especially
25 true given the '959 patent and prior art relate to various equalization methods in the
26 audio system. A POSITA would have been motivated to use, try, and combine
27 different equalization methods to permit a user (or automatically perform) to change
28 audio output to their liking for the “best” audio listening experience based on

1 subjective preference of a user and how and where the audio system has been
2 installed. Implementing the combination and any necessary modifications would
3 have been routine and within the scope of the prior art references' teachings. With
4 respect to the prior art references in Exhibits 959-1 through 959-B, a POSITA would
5 have been motivated to combine any of the references identified as prior art to the
6 '959 patent for these reasons provided above and the additional reasons provided
7 below.

8 First, the prior art references identified above and the accompanying
9 invalidity claim charts teach similar home or audio device controller connected to
10 one or more audio devices or speakers (and within relevant timeframes), and thus
11 the teachings of any one reference are applicable to other references in that same
12 field. *See generally, e.g.*, Ramsay; Rocketfish; McCarty; Litback; Sasaki.

13 Second, a POSITA would have been motivated and found it obvious to apply
14 references teaching certain specific techniques—*e.g.*, Goh 463, Fincham—to other
15 references that relate to playback devices generally because they relate to outputting
16 one or more channel audio to one or more playback devices. *See, e.g.*, Ramsay;
17 Rocketfish; McCarty; Litback; Sasaki.

18 A POSITA would have also been motivated and found it obvious to replace
19 and/or combine a reference's exact set of materials, components, or configurations
20 in a particular image sensor with the teachings regarding other materials,
21 components, and configurations used in other image sensor for all the reasons
22 provided above and below. These modifications would have been a simple
23 substitution of one known element for another, which would have obtained
24 predictable results because it was already well known in the art that teaches
25 outputting one or more channels of audio to one or more playback devices. The
26 substitution of one component, material, or configuration for another would not
27 have changed the principle of operation for either reference in any combination
28 because the references all use similar mechanisms for a similar purpose: outputting

1 one or more channels of audio to one or more playback devices. This is thus a
2 combination of prior art elements (*e.g.*, outputting one or more channels of audio to
3 one or more playback devices) according to known methods (a POSITA would
4 understand that these are all available design choices) to yield predictable results (a
5 POSITA would understand the benefits and drawbacks of each design choice, and
6 there are no unexpected results from any particular combination). This is especially
7 true given the '959 patent and prior art relate to different audio configurations with
8 one or more audio devices or speakers. *E.g.*, compare claim 5 with McCarty at Fig.
9 1C (disclosing multiple audio devices/speakers) and Ramsay at Fig. 17 (disclosing
10 multiple audio devices/speakers). A POSITA would not have found an audio
11 devices and a speaker distinctive because known methods of equalization equally
12 applies to both audio devices and speakers (*i.e.*, any device that outputs sound). A
13 POSITA would have been motivated to use, try, and combine different equalization
14 methods to perform better equalization methods (like the '959 patent) based on
15 number of speakers connected to the system and where these speakers installed to
16 provide better sound to a user.

17 A POSITA would have been motivated to combine these teachings, and to
18 make these replacements, because all of these outputting one or more channels of
19 audio to one or more playback devices components, materials, and configurations
20 were widely-used techniques. For example, Ramsay discloses an audio system that
21 uses multiple audio devices to provide a multi-channel audio experience to a user.
22 *See, e.g.*, Ramsay, Fig. 6. Fincham also discloses an audio system that uses multiple
23 audio devices to provide a multi-channel audio experience to a user. *See, e.g.*,
24 Fincham Fig. 7. Fincham further discloses a need and how to perform equalization
25 (*e.g.*, filtering audio signal) based on a different audio configurations to provide a
26 better audio experience to a user. *See, e.g.*, Fincham, Fig. 12 (performing different
27 filtration based on where an audio device is located). As such, a POSITA would
28

1 have been strongly motivated to change and combine teachings of Ramsay and
2 Fincham to provide a better listening experience.

3 Accordingly, a POSITA would have had a reasonable expectation of success
4 given considerations discussed above, the similarities in the teachings and systems,
5 and given that the claimed components and configurations of outputting one or more
6 channels of audio to one or more playback devices were all well-known at the time.
7 Implementing the combination and any necessary modifications would have been
8 routine and within the scope of the prior art references' teachings.

9 As one example, to the extent that Ramsay or McCarty does not disclose the
10 “wherein in the first type of pairing, the playback device is configured to output
11 audio comprising two channel sound via the plurality of speaker drivers” limitation
12 (they disclose this), it would have been obvious to combine any of these references
13 with, e.g., Rocketfish, Litback, to arrive at said limitation because those references
14 disclose such limitation, and a POSITA would have been motivated to consult
15 references that disclose a playback device outputting one or more channels of audio.
16 *See generally, e.g.,* Rocketfish, Litback.. For example, Ramsay discloses an audio
17 system that uses multiple audio devices to provide a multi-channel audio experience
18 to a user. *See, e.g.,* Ramsay, Fig. 13. Ramsay also discloses that each audio device
19 may be used alone. *See, e.g., id.,* Fig. 17. Based on this single audio device
20 configuration, a POSITA would have been strongly motivated to change and
21 combine teachings of Rocketfish and/or Litback (disclose how a playback device
22 should be configured when it is not connected/paired with another playback device
23 for a better listening experience) with Ramsay to provide a better listening
24 experience when a single playback device is present in a room.

25 As another example, to the extent that Ramsay does not disclose the
26 “configure the playback device to perform a first equalization of the audio data
27 before outputting audio based on the audio data from the plurality of speaker drivers
28 when the type of pairing is determined to comprise the first type of pairing”

1 limitation (Ramsay discloses this), it would have been obvious to combine any of
2 these references with, e.g., Litback, Goh 463, Fincham, to arrive at said limitation
3 because those references disclose such limitation, and a POSITA would have been
4 motivated to consult references that disclose equalization of the audio data before
5 outputting audio. *See, e.g.*, Litback; Goh 463; Fincham.

6 Additional obviousness combinations of the references identified here are
7 possible, and Defendant may rely on such combination(s) in this litigation. In
8 particular, Defendant is currently unaware of Sonos' allegations with respect to the
9 level of skill in the art and the qualifications of a POSITA. Defendant is also
10 unaware of the extent, if any, to which Sonos may contend that limitations of the
11 claims at issue are not disclosed in the prior art identified by defendant as
12 anticipatory, and the extent to which Sonos will contend that elements not disclosed
13 in the asserted patent specifications would have been known to a POSITA. And
14 Defendant does not yet know how the Court will construe terms in the asserted
15 claim. Defendant is also continuing its investigation of the large universe of prior
16 art to identify potential prior art systems, publications related to those systems, and
17 third parties that may have information about those systems. Defendant reserves the
18 right to amend and supplement these contentions to identify other prior art and
19 combinations rendering the asserted claim obvious.

20 (iv) The '025 Patent

21 The following is a list of prior art references that, either alone, or in
22 combination with the knowledge of a person of ordinary skill in the art, Applicant's
23 Admitted Prior Art, and/or the additional prior art references discussed below, and
24 in Exhibits 025-1 through 025-B would have rendered obvious one or more Asserted
25 Claims of the '025 patent, including as indicated in the associated claim charts. A
26 person of ordinary skill in the art would have been motivated and had a reasonable
27 expectation of success to make these combinations because, for example, each
28 would have been merely: (a) a combination of prior art elements according to

1 known methods to yield predictable results; (b) a simple substitution of one known
 2 element for another to obtain predictable results; (c) a use of a known technique to
 3 improve similar devices in the same way; (d) application of a known technique to a
 4 known device ready for improvement to yield predictable results; (e) obvious to try;
 5 and/or (f) known work in one field of endeavor prompting variations of it for use in
 6 either the same field or a different one based on design incentives or other market
 7 forces since the variations are predictable to one of ordinary skill in the art.

8 As set forth with more detail in Exhibits 025-1 through 025-B, Defendant
 9 contends that all claims are rendered obvious by the identified reference(s) alone, or
 10 in combination with other references, including the references identified below and
 11 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
025-1	Ramsay	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
025-2	Rocketfish	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
025-3	McCarty	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
025-4	Litback	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
025-5	Sasaki	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or

Exhibit No.	Reference	In Combination With
		various references cited in the Obviousness exhibit
025-6	Sonos Zoneplayer S5	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit
025-B	Obviousness, citing various references	Ramsay, Rocketfish, McCarty, Litback, Sasaki, Sonos Zoneplayer S5, Goh 463, Fincham, Lin, and/or various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '025 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '025 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 025-1 through 025-B and/or with a POSITA's general knowledge. Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 025-1 through 025-B, including for the reasons described below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as further described below.

The alleged invention of the '025 patent relates to a playback device that processes audio data into one or more channel before it outputs audio from the playback device.

1 The asserted claims recite elements that were conventional in a home or audio
2 device controller that can one or more audio devices well before the priority date of
3 the '025 patent. As an example, processing audio data into one or more channel
4 before it outputs audio from the playback device was well-known prior to the '025
5 patent and the prior art is replete with teachings that confirm this knowledge. *See,*
6 *e.g.*, Ramsay; Rocketfish; McCarty; Litback; Sasaki; Goh 463; Fincham.

7 Determining whether more than one playback devices are connected was also
8 well-known prior to the '025 patent and the prior art is replete with teachings that
9 confirm this knowledge. *See, e.g.*, Ramsay; Rocketfish; McCarty; Litback; Sasaki;
10 Goh 463; Fincham.

11 In sum, by the time the '025 patent was filed, it was well known to process
12 audio data into one or more channel before it outputs audio from the playback
13 device as claimed at least because all the above was well known in the art before the
14 '025 patent, and a POSITA would have known that any and/or all the above
15 techniques could be combined to provide “a playback device.” This is especially
16 true here because all of the references disclose processing audio data into one or
17 more channel before it outputs audio from the playback device. As such, a POSITA
18 would have logically and predictably consulted all of the references together to
19 derive the alleged invention in the '025 patent.

20 Further, the general background knowledge described above and below would
21 have provided the basis for combining any number of known Applicant's Admitted
22 Prior Art, and/or the additional prior art references discussed below, and in Exhibits
23 025-1 through 025-B. Because all of these techniques were already known in the art
24 for use in a home or audio device that processes audio data before it outputs to one
25 or more audio devices, a POSITA would have understood that combining any/all of
26 these techniques would have yielded predictable results, would have been a simple
27 substitution of one known technique for another to obtain predictable results, would
28 have used known techniques to improve similar techniques in the same way, would

1 have applied a known technique to a known method that was ready for improvement
2 to yield predictable results, would have been obvious to try because the techniques
3 were all known and there was reasonable expectation of success in combining them,
4 would have been obvious to try to improve how a home or audio device outputs
5 sound to one or more playback device, and would have been obvious because all
6 techniques were already known and combined in various fashions before. With
7 respect to the prior art references in Exhibits 025-1 through 025-B, a POSITA would
8 have been motivated to combine any of the references identified as prior art to the
9 '025 patent for these reasons provided above and the additional reasons provided
10 below.

11 First, the prior art references identified above and the accompanying
12 invalidity claim charts teach similar home or audio device that processes audio
13 before it outputs sound to one or more audio devices (and within relevant
14 timeframes), and thus the teachings of any one reference are applicable to other
15 references in that same field. *See, e.g.*, Ramsay; Rocketfish; McCarty; Litback;
16 Sasaki; Goh 463; Fincham.

17 Second, a POSITA would have been motivated and found it obvious to apply
18 references teaching certain specific techniques—*e.g.*, Goh 463; Fincham—to other
19 references that relate to playback devices generally because processing audio before
20 it outputs sound to one or more audio devices. *See, e.g.*, Ramsay; Rocketfish;
21 McCarty; Litback; Sasaki; Goh 463; Fincham.

22 A POSITA would have also been motivated and found it obvious to replace
23 and/or combine a reference's exact set of materials, components, or configurations
24 in a particular image sensor with the teachings regarding other materials,
25 components, for all the reasons provided above and below. These modifications
26 would have been a simple substitution of one known element for another, which
27 would have obtained predictable results because it was already well known in the art
28 that processes audio before it outputs sound to one or more audio devices. The

1 substitution of one component, material, or configuration for another would not
2 have changed the principle of operation for either reference in any combination
3 because the references all use similar mechanisms for a similar purpose: processing
4 audio before it outputs sound to one or more audio devices. This is thus a
5 combination of prior art elements (*e.g.*, processing audio before it outputs sound to
6 one or more audio devices) according to known methods (a POSITA would
7 understand that these are all available design choices) to yield predictable results (a
8 POSITA would understand the benefits and drawbacks of each design choice, and
9 there are no unexpected results from any particular combination). This is especially
10 true given the '025 patent and prior art relate to different audio configurations with
11 one or more audio devices or speakers. *E.g.*, compare claim 1 with McCarty at Fig.
12 1C (disclosing multiple audio devices/speakers) and Ramsay at Fig. 17 (disclosing
13 multiple audio devices/speakers). A POSITA would not have found an audio
14 devices and a speaker distinctive because known methods of processing equally
15 applies to both audio devices and speakers (*i.e.*, any device that outputs sound). A
16 POSITA would have been motivated to use, try, and combine different processing
17 methods to allow better processing options (like the '025 patent) based on number
18 of speakers connected to the system and where these speakers installed.

19 Further, a POSITA would have been motivated to combine these teachings,
20 and to make these replacements, because all of these processing audio before it
21 outputs sound to one or more audio devices components, materials, and
22 configurations were widely used techniques. For example, Ramsay discloses an
23 audio system that uses multiple audio devices to provide a multi-channel audio
24 experience to a user. *See, e.g.*, Ramsay, Fig. 6. Fincham also discloses an audio
25 system that uses multiple audio devices to provide a multi-channel audio experience
26 to a user. *See, e.g.*, Fincham Fig. 7. Fincham further discloses a need and how to
27 process these signals based on a different audio configurations to provide a better
28 audio experience to a user. *See, e.g.*, Fincham, Fig. 12 (performing different

1 processing of audio data based on where an audio device is located). As such, a
2 POSITA would have been strongly motivated to change and combine teachings of
3 Ramsay and Fincham to provide a better listening experience.

4 Accordingly, a POSITA would have had a reasonable expectation of success
5 given considerations discussed above, the similarities in the teachings and systems,
6 and given that the claimed components and configurations of processing audio
7 before it outputs sound to one or more audio devices were all well-known at the
8 time. Implementing the combination and any necessary modifications would have
9 been routine and within the scope of the prior art references' teachings.

10 As one example, to the extent that McCarty does not disclose the "configure
11 the playback device to perform a first processing of the audio data so as to output
12 two-channel audio based on the audio data from the one or more speaker drivers
13 after the playback device has determined it is not paired with the one or more other
14 playback devices" limitation (McCarty discloses this), it would have been obvious
15 to combine any of these references with, e.g., Ramsay, Rocketfish, Goh 463,
16 Fincham, to arrive at said limitation because those references disclose such
17 limitation, and a POSITA would have been motivated to consult references that
18 disclose processing of the audio data before outputting to one or mor channels to
19 one or more playback devices. *See, e.g.*, Ramsay; Rocketfish; Goh 463; Fincham.
20 For example, McCarty discloses an audio system that uses multiple audio devices to
21 provide a multi-channel audio experience to a user. *See, e.g.*, Ramsay, Fig. 1C.
22 Based on this multi-channel configuration, it would have been obvious to a POSITA
23 that a single audio device disclosed in Fig. 8 may also be used alone to play music.
24 As such, a POSITA would have been strongly motivated to change McCarty into a
25 single device configuration and combine teachings of Ramsay, Rocketfish, Goh 463,
26 and/or Fincham (disclose how to process an audio data when a playback device is
27 not connected/paired with another playback device for a better listening experience)

1 with McCarty to provide a better listening experience when a single playback device
2 is present in a room.

3 As another example, to the extent that Litback does not disclose the “receive a
4 signal from a controller over the network, wherein the signal comprises an
5 instruction for the playback device to become paired with one or more other
6 playback devices such that, after pairing, the playback device and the one or more
7 other playback devices have different playback roles” limitation (Litback discloses
8 this), it would have been obvious to combine any of these references with, e.g.,
9 Ramsay, McCarty, Rocketfish, to arrive at said limitation because those references
10 disclose such limitation, and a POSITA would have been motivated to consult
11 references that disclose instructing the playback device to become paired with one
12 or more other playback device. *See, e.g.,* Ramsay; McCarty; Rocketfish.

13 Additional obviousness combinations of the references identified here are
14 possible, and Defendant may rely on such combination(s) in this litigation. In
15 particular, Defendant is currently unaware of Sonos’s allegations with respect to the
16 level of skill in the art and the qualifications of a POSITA. Defendant is also
17 unaware of the extent, if any, to which Sonos may contend that limitations of the
18 claims at issue are not disclosed in the prior art identified by defendant as
19 anticipatory, and the extent to which Sonos will contend that elements not disclosed
20 in the asserted patent specifications would have been known to a POSITA. And
21 Defendant does not yet know how the Court will construe terms in the asserted
22 claim. Defendant is also continuing its investigation of the large universe of prior
23 art to identify potential prior art systems, publications related to those systems, and
24 third parties that may have information about those systems. Defendant reserves the
25 right to amend and supplement these contentions to identify other prior art and
26 combinations rendering the asserted claim obvious.

27 (v) The ’953 Patent
28

1 The following is a list of prior art references that, either alone, or in
 2 combination with the knowledge of a person of ordinary skill in the art, Applicant's
 3 Admitted Prior Art, and/or the additional prior art references discussed below, and
 4 in Exhibits 953-1 through 953-B would have rendered obvious one or more Asserted
 5 Claims of the '953 patent, including as indicated in the associated claim charts. A
 6 person of ordinary skill in the art would have been motivated and had a reasonable
 7 expectation of success to make these combinations because, for example, each
 8 would have been merely: (a) a combination of prior art elements according to
 9 known methods to yield predictable results; (b) a simple substitution of one known
 10 element for another to obtain predictable results; (c) a use of a known technique to
 11 improve similar devices in the same way; (d) application of a known technique to a
 12 known device ready for improvement to yield predictable results; (e) obvious to try;
 13 and/or (f) known work in one field of endeavor prompting variations of it for use in
 14 either the same field or a different one based on design incentives or other market
 15 forces since the variations are predictable to one of ordinary skill in the art.

16 As set forth with more detail in Exhibits 953-1 through 953-B, Defendant
 17 contends that all claims are rendered obvious by the identified reference(s) alone, or
 18 in combination with other references, including the references identified below and
 19 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
953-1	Janevski	Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-2	Balassanian	Janevski, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit

Exhibit No.	Reference	In Combination With
953-3	Goldberg	Janevski, Balassanian, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-4	Kono	Janevski, Balassanian, Goldberg, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-5	Squeezebox	Janevski, Balassanian, Kono, Goldberg, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-6	Yamaha	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-7	Barix	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-8	p4sync	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, Nestreams Musica, and/or various references cited in the Obviousness exhibit
953-9	Netstreams Musica	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, and/or various references cited in the Obviousness exhibit
953-B	Obviousness, citing various references	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit

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To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '953 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '953 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 953-1 through 953-B and/or with a POSITA's general knowledge. Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 953-1 through 953-B, including for the reasons described below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as further described below.

The alleged invention of the '953 patent relates to a system for maintaining synchronous playback among a plurality of playback devices that have independent clocking arrangements. '953 Patent at Abstract. The system, as claimed, includes several key features, such as a master and slave playback devices, the ability to transfer audio and playback timing information from a master playback device to slave playback devices, a controller device, volume control, and the ability to switch the master and slave roles. *See id.* at cls. 7-8, 12-14, 18, 22-24.

These elements were conventional in synchronized wireless playback systems well before the priority date of the '953 patent. For example, synchronized wireless playback systems that utilized master and slave playback devices were well-known prior to the '953 Patent and the prior art is replete with teachings that confirm this knowledge. *See, e.g.,* Janevski at 6:5-22 (describing an "initiator" PVR and

1 “participant” PVRs that engage “in a synchronized viewing session”); Balassanian
2 at Abstract (describing a system “for synchronizing the rendering of content”
3 between “a *master* rendering device” and “*slave* rendering devices”) (emphasis
4 added); Goldberg at 27:2-7 (describing a system for “highly synchronized” “audio
5 playback” between a “broadcast unit” and “receive units”); Kono at [0010]
6 (describing a system for “synchronized” playback in which “the mobile
7 communication terminal serving as the *master* distributes to the song data to the
8 mobile communication terminal serving as the *slave*”) (emphasis added).

9 The ability for any playback device to assume the role of the master playback
10 device was also well-known prior the ’953 Patent, and the prior art is replete with
11 teaching that confirm this knowledge. For example, Janevski teaches that the
12 “initiator” (*i.e.*, master) “role is handed off to any PVR that ... performs a control
13 function.” Janevski at 6:5-22. Likewise, Goldberg teaches that a “new, soon-to-be
14 broadcast unit” (*i.e.*, a current slave or “receive” unit) could assume the role of the
15 broadcast unit (*i.e.*, the master unit). Goldberg at 49:21-50:2. Kono also teaches
16 that master and slave units can be “set” by “master / slave selection information”
17 embedded in the “music data” downloaded from a “server.” Kono at [0015].

18 The ability to transfer audio and playback timing information from a master
19 playback device to slave playback devices, to maintain synchronous playback of
20 audio between the devices, was also well-known prior to the ’953 Patent and the
21 prior art is replete with teachings that confirm this knowledge. *See, e.g.*, Janevski at
22 7:25-50, 10:4-27 (describing a “status message” and “time stamp[s]” transmitted
23 between initiator PVR and the participants PVRs, which includes “information
24 characteristic of content of a digital bit stream from which playback ... is being
25 generated” and “is used to ‘fine tune’ the synchronization” between the PVRs);
26 Balassanian at 3:60-4:15, 2:13-28 (describing “audio content” that “may be sent to
27 multiple audio rendering devices” this is accompanied by an associated “rendering
28 time”); Goldberg at 27:8-17, 21:18-22:17 (describing “audio media” that is

1 transmitted from a broadcast unit to a receive unit, and associated “block code” that
2 designates the “beginning” of each block of an “MP3 file[.]”); Kono at [0021],
3 [0007] (describing “*audio data*” and associated “timing information” that is
4 transmitted from the master to the slave to control “*playback timing*”) (emphasis
5 added).

6 The ability to control a synchronized wireless playback system by utilizing a
7 controller device was also well-known prior to the ’953 Patent and the prior art is
8 replete with teachings that confirm this knowledge. For example, Janevski teaches
9 that the initiator could be controlled “via *control commands* displayed on the
10 television and activated by an input device such as a keyboard or *remote*
11 *controller*.” Janevski at 7:4-24 (emphasis added). Goldberg teaches a “*unit*
12 *controller*” that “performs various operational and executive functions.” Goldberg
13 at [0096] (emphasis added). Kono teaches that audio data is reproduced
14 synchronously “[w]hen the playback start button is pressed on the master side.”
15 Kono at [0021]. Likewise, the ability to issue volume control commands to the
16 playback devices from a controller was also well-known prior to the ’953 Patent.
17 *See, e.g.*, Goldberg at 56:15-22 (describing the ability to “further control aspects of
18 the music output, such as *volume control*”) (emphasis added).

19 In sum, by the time the ’953 patent was filed, it was well known to perform
20 synchronized playback between master and slave devices as claimed at least because
21 all the above was well known in the art before the ’953 patent, and a POSITA would
22 have known that any and/or all the above techniques could be combined to provide a
23 system for synchronous playback among a plurality of playback devices. This is
24 especially true here because all of the references disclose master and slave devices
25 for rendering audio and/or video content and timing information for maintaining
26 synchrony between the playback devices. As such, a POSITA would have logically
27 and predictably consulted all of the references together to arrive at the alleged
28 invention in the ’953 Patent.

1 Furthermore, the general background knowledge described above and below
2 would have provided the basis for combining any number of known Applicant’s
3 Admitted Prior Art, and/or the additional prior art references discussed above, and in
4 Exhibits 953-1 through 953-B. Because all of these techniques were already known
5 in the art for use in synchronous playback systems that utilized master and slave
6 devices, a POSITA would have understood that combining any/all of these
7 techniques would have yielded predictable results, would have been a simple
8 substitution of one known technique for another to obtain predictable results, would
9 have used known techniques to improve similar techniques in the same way, would
10 have applied a known technique to a known method that was ready for improvement
11 to yield predictable results, would have been obvious to try because the techniques
12 were all known and there was reasonable expectation of success in combining them,
13 would have been obvious to try to improve a synchronized playback system with
14 master and slave devices, and would have been obvious because all techniques were
15 already known and combined in various fashions before. With respect to the prior
16 art references in Exhibits 953-1 through 953-B, a POSITA would have been
17 motivated to combine any of the references identified as prior art to the ’953 patent
18 for these reasons provided above and the additional reasons provided below.

19 First, the prior art references identified above and the accompanying
20 invalidity claim charts teach similar devices for wireless transmitting multimedia
21 information, such as audio and/or video and associated timing information to
22 facilitate synchronous playback (and within relevant timeframes), and thus the
23 teachings of any one reference are applicable to other references in that same field.
24 *See generally, e.g.,* Janevski; Balassanian; Goldberg; Kono.

25 Second, a POSITA would have been motivated and found it obvious to apply
26 references teaching certain specific techniques—*e.g.,* Kono’s explicit disclosure of
27 “timing information” used to control “playback timing” between master and slave
28 devices (Kono at [0021], [0007]), and Goldberg’s disclosure of “volume control”

1 (Goldberg at 56:15-22)—to other references that relate to synchronized playback
2 generally because a POSITA would have understood that the timekeeping
3 functionality disclosed by the exemplary prior art references could be used for
4 playback timing, and that volume control could be easily implemented in the
5 controllers disclosed by exemplary prior art references. For example, volume
6 control for the synchronous playback system could easily implemented in the
7 “remote control” disclosed by Janevski because remote controls are typically used
8 for controlling volume in multimedia playback systems. The same is true with
9 respect with playback timing information, which could readily be derived from the
10 “time stamp[s]” related to audio content disclosed by Janevski in order to
11 synchronize playback timing and set a future time for synchronous playback, as
12 claimed. *See, e.g.*, Janevski at 7:4-50, 10:4-27

13 A POSITA would have also found it obvious to replace the exact modules,
14 hardware, and/or software disclosed in the charted references for one another
15 because all of the references relate to particular synchronized playback systems.
16 These modifications would involve the simple substitution of one known element
17 for another. For example, Kono discloses that audio is synchronized among a
18 plurality of “telephone[s]” or “mobile communication terminal[s]” (Kono at
19 Abstract, [0010]), and Janevski discloses synchronized playback among a plurality
20 of PVRs (personal video recorders) (Janevski at 6:5-22). A POSITA would have
21 understood that audio could be synchronized using the methods described therein
22 for any type of playback device, including standalone synchronized speakers, or for
23 any type of information content that requires synchronization in order to be rendered
24 at the same time among a plurality of devices. In the case of the PVRs disclosed by
25 Janevski, a POSITA would have further understood that video content is
26 accompanied by audio, which must also be synchronized at the same time to ensure
27 fully synchronous playback among a plurality of PVRs.

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1 Further, a POSITA that synchronization and/or control could be facilitated by
2 a variety of different communication protocols, and would have thus found it
3 obvious to replace the communication protocol described in one of the charted
4 referenced for another, or for various communication protocols described within the
5 same reference. Indeed, the references do not teach that a particular communication
6 protocol is required to achieve control or synchronization. For example, Janevski
7 teaches that each PVR includes a “remote control sensor,” but also further discloses
8 that “control” commands can be communicated between the master and slave PVRs
9 over a network such as the Internet. Janevski at 7:51-8:3, 6:5-16, Fig. 1. A
10 POSITA would have thus understood that the remote control could be achieved over
11 the Internet given the Internet’s suitability for transmission of any type of signal or
12 data, including control signals. A POSITA would have also understood that the
13 Internet, or a local area network, would be a readily available alternative for
14 transmitting control signals between a remote control and a PVR, because Janevski
15 already describes the use of the Internet as a network for transmitting control signals
16 between PVRs.¹³

17 Additional obviousness combinations of the references identified here are
18 possible, and Defendant may rely on such combination(s) in this litigation. In
19 particular, Defendant is currently unaware of Sonos’ allegations with respect to the
20 level of skill in the art and the qualifications of a POSITA. Defendant is also
21 unaware of the extent, if any, to which Sonos may contend that limitations of the
22 claims at issue are not disclosed in the prior art identified by defendant as
23 anticipatory, and the extent to which Sonos will contend that elements not disclosed

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25 ¹³ These examples are not limiting, and are only meant to show how the charted
26 prior art references could be combined, and to provide specific examples of features
27 that could be easily interchanged within and among the charted prior art references.
28 Moreover, these examples should be interpreted as an admission that a specific
element is not suggested or disclosed, either inherently or explicitly, by any of the
charted prior art references.

1 in the asserted patent specifications would have been known to a POSITA. And
2 Defendant does not yet know how the Court will construe terms in the asserted
3 claim. Defendant is also continuing its investigation of the large universe of prior
4 art to identify potential prior art systems, publications related to those systems, and
5 third parties that may have information about those systems. Defendant reserves the
6 right to amend and supplement these contentions to identify other prior art and
7 combinations rendering the asserted claim obvious.

8 (vi) The '258 Patent

9 The following is a list of prior art references that, either alone, or in
10 combination with the knowledge of a person of ordinary skill in the art, Applicant's
11 Admitted Prior Art, and/or the additional prior art references discussed below, and
12 in Exhibits 258-1 through 258-B would have rendered obvious one or more Asserted
13 Claims of the '258 patent, including as indicated in the associated claim charts. A
14 person of ordinary skill in the art would have been motivated and had a reasonable
15 expectation of success to make these combinations because, for example, each
16 would have been merely: (a) a combination of prior art elements according to
17 known methods to yield predictable results; (b) a simple substitution of one known
18 element for another to obtain predictable results; (c) a use of a known technique to
19 improve similar devices in the same way; (d) application of a known technique to a
20 known device ready for improvement to yield predictable results; (e) obvious to try;
21 and/or (f) known work in one field of endeavor prompting variations of it for use in
22 either the same field or a different one based on design incentives or other market
23 forces since the variations are predictable to one of ordinary skill in the art.

24 As set forth with more detail in Exhibits 258-1 through 258-B, Defendant
25 contends that all claims are rendered obvious by the identified reference(s) alone, or
26 in combination with other references, including the references identified below and
27 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
258-1	Janevski	Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-2	Balassanian	Janevski, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-3	Goldberg	Janevski, Balassanian, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-4	Kono	Janevski, Balassanian, Goldberg, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-5	Squeezebox	Janevski, Balassanian, Kono, Goldberg, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-6	Yamaha	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-7	Barix	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
258-8	p4sync	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, Nestreams Musica, and/or various references cited in the Obviousness exhibit

Exhibit No.	Reference	In Combination With
258-9	Netstreams Musica	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, and/or various references cited in the Obviousness exhibit
258-B	Obviousness, citing various references	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '258 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '258 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 258-1 through 258-B and/or with a POSITA's general knowledge. Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 258-1 through 258-B, including for the reasons described below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as described above with respect to the '953 Patent, which similarly describes a system for maintaining synchronous playback among a plurality of playback devices, and as further described below.

Like the '953 Patent, the alleged invention of the '258 patent relates to a system for maintaining synchronous playback among a plurality of playback devices that have independent clocking arrangements. The system, as claimed, includes additional features beyond the features recited in the Asserted Claims of the '953

1 Patent—most notably, the ability to transmit information indicating the status of the
2 synchrony group to a controller. *See* '258 Patent at cl. 17.

3 As described with respect the '953 Patent, the common elements were
4 conventional in synchronized wireless playback systems well before the priority
5 date of the '258 Patent. The additional features were also conventional in wireless
6 playback systems well before the priority date of the '285 Patent. For example,
7 synchronized wireless playback systems that transmitted information regarding the
8 status of the synchrony group were well-known prior to the '258 Patent and the prior
9 art is replete with teachings that confirm this knowledge. *See, e.g.*, Janevski at 7:4-
10 24 (describing a “*status message*” that “is transmitted with each command that is
11 broadcasted in response to a participant performing a control function,” which
12 contains information indicating the status of the synchrony group such as “time
13 misregistration”) (emphasis added); Balassanian at 26:18-28 (describing
14 “[i]nformation” about the number of members of the cluster that “can be sent by the
15 broadcast unit the other members of the cluster” and “conveniently placed on a
16 display on the unit”). As described above with respect to the '953 Patent,
17 synchronized wireless playback systems that utilized controllers were also well-
18 known prior to the '258 Patent. *See, e.g.*, Goldberg at [0096] (describing a “*unit*
19 *controller*” that “performs various operational and executive functions”) (emphasis
20 added); Janevski at 7:4-24 (describing that the initiator could be controlled “via a
21 *remote control*” or “via controls on the PVR 114a itself”) (emphasis added).

22 In sum, by the time the '258 Patent was filed, it was well known to perform
23 synchronized playback between master and slave devices as claimed at least because
24 all the above was well known in the art before the '258 Patent, and a POSITA would
25 have known that any and/or all the above techniques could be combined to provide a
26 system for synchronous playback among a plurality of playback devices. This is
27 especially true here because all of the references disclose master and slave devices
28 for rendering audio and/or video content and timing information for maintaining

1 synchrony between the playback devices. As such, a POSITA would have logically
2 and predictably consulted all of the references together to arrive at the alleged
3 invention in the '258 Patent.

4 Furthermore, the general background knowledge described above and below
5 would have provided the basis for combining any number of known Applicant's
6 Admitted Prior Art, and/or the additional prior art references discussed above, and in
7 Exhibits 258-1 through 258-B. Because all of these techniques were already known
8 in the art for use in synchronous playback systems that utilized master and slave
9 devices, a POSITA would have understood that combining any/all of these
10 techniques would have yielded predictable results, would have been a simple
11 substitution of one known technique for another to obtain predictable results, would
12 have used known techniques to improve similar techniques in the same way, would
13 have applied a known technique to a known method that was ready for improvement
14 to yield predictable results, would have been obvious to try because the techniques
15 were all known and there was reasonable expectation of success in combining them,
16 would have been obvious to try to improve a synchronized playback system with
17 master and slave devices, and would have been obvious because all techniques were
18 already known and combined in various fashions before. With respect to the prior
19 art references in Exhibits 258-1 through 258-B, a POSITA would have been
20 motivated to combine any of the references identified as prior art to the '258 patent
21 for these reasons provided above and the additional reasons provided below.

22 First, the prior art references identified above and the accompanying
23 invalidity claim charts teach similar devices for wireless transmitting multimedia
24 information, such as audio and/or video and associated timing information to
25 facilitate synchronous playback (and within relevant timeframes), and thus the
26 teachings of any one reference are applicable to other references in that same field.
27 *See generally, e.g.,* Janevski; Balassanian; Goldberg; Kono.

1 Second, a POSITA would have been motivated and found it obvious to apply
2 references teaching certain specific techniques—*e.g.*, Janevski’s disclosure of a
3 “status message” (Janevski at 7:4-24), or Balassanian’s disclosure of
4 “[i]nformation” about the members of the cluster (Balassanian at 26:18-28)—to
5 other references that related to using a controller or user interface to control a
6 synchronized playback system because a POSITA would have understood that a
7 controller or a user interface could be used to display information regarding the
8 status of the synchrony group. For example, information indicating the status of the
9 synchrony group could be easily implemented in the “remote control” disclosed by
10 Janevski because remote controls are typically used for displaying the status of the
11 system that they are being used to control, in order to allow a user to respond to the
12 status of the system by issuing control commands. *See, e.g.*, Janevski at 6:40-44.
13 The same is true with respect to Balassanian’s disclosure of “information” related to
14 the cluster, which could include information regarding the “lack of synchronization”
15 among members of the synchrony group, and would thus facilitate corrective action
16 that could be applied to the synchronization system when combined with a reference
17 such as Janevski that discloses a remote control, or when read in light of
18 Balassanian’s own disclosure of a “user interface” that could be used for making
19 adjustments to the synchronization system. *See, e.g.*, Balassanian at 3:12-26.

20 Additional obviousness combinations of the references identified here are
21 possible, and Defendant may rely on such combination(s) in this litigation. In
22 particular, Defendant is currently unaware of Sonos’ allegations with respect to the
23 level of skill in the art and the qualifications of a POSITA. Defendant is also
24 unaware of the extent, if any, to which Sonos may contend that limitations of the
25 claims at issue are not disclosed in the prior art identified by defendant as
26 anticipatory, and the extent to which Sonos will contend that elements not disclosed
27 in the asserted patent specifications would have been known to a POSITA. And
28 Defendant does not yet know how the Court will construe terms in the asserted

1 claim. Defendant is also continuing its investigation of the large universe of prior
2 art to identify potential prior art systems, publications related to those systems, and
3 third parties that may have information about those systems. Defendant reserves the
4 right to amend and supplement these contentions to identify other prior art and
5 combinations rendering the asserted claim obvious.

6 (vii) The '715 Patent

7 The following is a list of prior art references that, either alone, or in
8 combination with the knowledge of a person of ordinary skill in the art, Applicant's
9 Admitted Prior Art, and/or the additional prior art references discussed below, and
10 in Exhibits 715-1 through 715-B would have rendered obvious one or more Asserted
11 Claims of the '715 patent, including as indicated in the associated claim charts. A
12 person of ordinary skill in the art would have been motivated and had a reasonable
13 expectation of success to make these combinations because, for example, each
14 would have been merely: (a) a combination of prior art elements according to
15 known methods to yield predictable results; (b) a simple substitution of one known
16 element for another to obtain predictable results; (c) a use of a known technique to
17 improve similar devices in the same way; (d) application of a known technique to a
18 known device ready for improvement to yield predictable results; (e) obvious to try;
19 and/or (f) known work in one field of endeavor prompting variations of it for use in
20 either the same field or a different one based on design incentives or other market
21 forces since the variations are predictable to one of ordinary skill in the art.

22 As set forth with more detail in Exhibits 715-1 through 715-B, Defendant
23 contends that all claims are rendered obvious by the identified reference(s) alone, or
24 in combination with other references, including the references identified below and
25 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
715-1	Janevski	Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various

Exhibit No.	Reference	In Combination With
		references cited in the Obviousness exhibit
715-2	Balassanian	Janevski, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-3	Goldberg	Janevski, Balassanian, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-4	Kono	Janevski, Balassanian, Goldberg, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-5	Squeezebox	Janevski, Balassanian, Kono, Goldberg, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-6	Yamaha	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-7	Barix	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-8	p4sync	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, Nestreams Musica, and/or various references cited in the Obviousness exhibit
715-9	Netstreams Musica	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, and/or various

Exhibit No.	Reference	In Combination With
		references cited in the Obviousness exhibit
715-B	Obviousness, citing various references	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit

7 To the extent that any of the anticipation references is found not to disclose a
8 limitation recited in the asserted claim of the '715 patent, it would have been
9 obvious to a POSITA at the time of the alleged invention of the '715 patent either (i)
10 to modify the reference to include this limitation and any remaining limitations of
11 this claim and/or (ii) to combine said reference with any other of the references in
12 Exhibits 715-1 through 715-B and/or with a POSITA's general knowledge.
13 Generally, motivation to combine any of these references with others exists within
14 the references themselves, as well as within the knowledge of those of ordinary skill
15 in the art at the relevant time. A POSITA would have been motivated to combine
16 any of the references described in attached Exhibits 715-1 through 715-B, including
17 for the reasons described below. A POSITA at the time of filing of the asserted
18 patents would also have understood the references listed above, alone or in
19 combination, to contain explicit and/or implicit teaching, suggestion, and/or
20 rationales to combine them, including as described above with respect to the '953
21 and '258 Patents, which similarly describe systems for maintaining synchronous
22 playback among a plurality of playback devices, and as further described below.

23 Like the '953 and '258 Patents, the alleged invention of the '715 patent
24 relates to a system for maintaining synchronous playback among a plurality of
25 playback devices. The system, as claimed, includes additional features beyond the
26 features recited in the Asserted Claims of the '953 and '258 Patents—most notably,
27 the ability to evaluate operational performance metrics of the synchrony group, and
28 to switch the master and slave roles in response to indicating potential degradation

1 in performance of synchronous playback of information content by the members of
2 the group. *See* '715 Patent at cl. 7.

3 As described with respect the '953 and '258 Patents, the common elements
4 were conventional in synchronized wireless playback systems well before the
5 priority date of the '715 Patent. The additional features were also conventional in
6 wireless playback systems well before the priority date of the '715 Patent. For
7 example, synchronized wireless playback systems that evaluated operational
8 performance metrics of the synchrony group and that were capable of switching the
9 master and slave roles were well-known prior to the '715 Patent and the prior art is
10 replete with teachings that confirm this knowledge. *See, e.g.*, Janevski at 7:4-24
11 (describing the ability to detect “misalignment” and that the “initiator” (*i.e.*, the
12 master) “may change during the session”); Balassanian at 5:62-65, 4:17-20
13 (describing an audio rendering device as either a master or slave in different
14 disclosed configurations); Goldberg at [0245], [0250] (describing a “function to test
15 the presence and speed of connection with the broadcast unit” (*i.e.*, the master unit),
16 which is “then reported to the system” to alert the “user of potential communications
17 issues”); Kono at [0014] (describing a “setting” for “master / slave selection”).

18 In sum, by the time the '715 Patent was filed, it was well known to perform
19 synchronized playback between master and slave devices as claimed at least because
20 all the above was well known in the art before the '715 Patent, and a POSITA would
21 have known that any and/or all the above techniques could be combined to provide a
22 system for synchronous playback among a plurality of playback devices. This is
23 especially true here because all of the references disclose master and slave devices
24 for rendering audio and/or video content and timing information for maintaining
25 synchrony between the playback devices. As such, a POSITA would have logically
26 and predictably consulted all of the references together to arrive at the alleged
27 invention in the '715 Patent.

1 Furthermore, the general background knowledge described above and below
2 would have provided the basis for combining any number of known Applicant’s
3 Admitted Prior Art, and/or the additional prior art references discussed above, and in
4 Exhibits 715-1 through 715-B. Because all of these techniques were already known
5 in the art for use in synchronous playback systems that utilized master and slave
6 devices, a POSITA would have understood that combining any/all of these
7 techniques would have yielded predictable results, would have been a simple
8 substitution of one known technique for another to obtain predictable results, would
9 have used known techniques to improve similar techniques in the same way, would
10 have applied a known technique to a known method that was ready for improvement
11 to yield predictable results, would have been obvious to try because the techniques
12 were all known and there was reasonable expectation of success in combining them,
13 would have been obvious to try to improve a synchronized playback system with
14 master and slave devices, and would have been obvious because all techniques were
15 already known and combined in various fashions before. With respect to the prior
16 art references in Exhibits 715-1 through 715-B, a POSITA would have been
17 motivated to combine any of the references identified as prior art to the ’715 patent
18 for these reasons provided above and the additional reasons provided below.

19 First, the prior art references identified above and the accompanying
20 invalidity claim charts teach similar devices for wireless transmitting multimedia
21 information, such as audio and/or video and associated timing information to
22 facilitate synchronous playback (and within relevant timeframes), and thus the
23 teachings of any one reference are applicable to other references in that same field.
24 *See generally, e.g.,* Janevski; Balassanian; Goldberg; Kono.

25 Second, a POSITA would have been motivated and found it obvious to apply
26 references teaching certain specific techniques—*e.g.,* Goldberg’s disclosure of a
27 “function to test the presence and speed of connection” (Goldberg at [0345])—to
28 other references that disclose the ability to switch the master and slave roles because

1 a POSITA would have understood that an slave device could assume the role of an
2 underperforming master device to alleviate latency or speed issues within a
3 synchronous playback system. For example, a function for testing the speed of a
4 connection between the devices in a synchrony group could be readily combined
5 with Janevski’s disclosure of an “initiator” (*i.e.*, a master) that “may change during
6 the session” to allow a slave device to assume the master role when the current
7 master is underperforming (*see* Janevski at 7:4-24), or to adjust the “master / slave
8 selection setting” disclosed by Kono (*see* Kono at [0014]).

9 Additional obviousness combinations of the references identified here are
10 possible, and Defendant may rely on such combination(s) in this litigation. In
11 particular, Defendant is currently unaware of Sonos’ allegations with respect to the
12 level of skill in the art and the qualifications of a POSITA. Defendant is also
13 unaware of the extent, if any, to which Sonos may contend that limitations of the
14 claims at issue are not disclosed in the prior art identified by defendant as
15 anticipatory, and the extent to which Sonos will contend that elements not disclosed
16 in the asserted patent specifications would have been known to a POSITA. And
17 Defendant does not yet know how the Court will construe terms in the asserted
18 claim. Defendant is also continuing its investigation of the large universe of prior
19 art to identify potential prior art systems, publications related to those systems, and
20 third parties that may have information about those systems. Defendant reserves the
21 right to amend and supplement these contentions to identify other prior art and
22 combinations rendering the asserted claim obvious.

23 (viii) The ’001 Patent

24 The following is a list of prior art references that, either alone, or in
25 combination with the knowledge of a person of ordinary skill in the art, Applicant’s
26 Admitted Prior Art, and/or the additional prior art references discussed below, and
27 in Exhibits 001-1 through 001-B would have rendered obvious one or more Asserted
28 Claims of the ’001 patent, including as indicated in the associated claim charts. A

1 person of ordinary skill in the art would have been motivated and had a reasonable
 2 expectation of success to make these combinations because, for example, each
 3 would have been merely: (a) a combination of prior art elements according to
 4 known methods to yield predictable results; (b) a simple substitution of one known
 5 element for another to obtain predictable results; (c) a use of a known technique to
 6 improve similar devices in the same way; (d) application of a known technique to a
 7 known device ready for improvement to yield predictable results; (e) obvious to try;
 8 and/or (f) known work in one field of endeavor prompting variations of it for use in
 9 either the same field or a different one based on design incentives or other market
 10 forces since the variations are predictable to one of ordinary skill in the art.

11 As set forth with more detail in Exhibits 001-1 through 001-B, Defendant
 12 contends that all claims are rendered obvious by the identified reference(s) alone, or
 13 in combination with other references, including the references identified below and
 14 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
001-1	Janevski	Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-2	Balassanian	Janevski, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-3	Goldberg	Janevski, Balassanian, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-4	Kono	Janevski, Balassanian, Goldberg, Kono, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or

Exhibit No.	Reference	In Combination With
		various references cited in the Obviousness exhibit
001-5	Squeezebox	Janevski, Balassanian, Kono, Goldberg, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-6	Yamaha	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-7	Barix	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-8	p4sync	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, Nestreams Musica, and/or various references cited in the Obviousness exhibit
001-9	Netstreams Musica	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, and/or various references cited in the Obviousness exhibit
001-B	Obviousness, citing various references	Janevski, Balassanian, Kono, Goldberg, Squeezebox, Yamaha, Barix, p4sync, Nestreams Musica, and/or various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '001 Patent, it would have been obvious to a POSITA at the time of the alleged invention of the '001 Patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in

1 Exhibits 001-1 through 001-B and/or with a POSITA's general knowledge.
2 Generally, motivation to combine any of these references with others exists within
3 the references themselves, as well as within the knowledge of those of ordinary skill
4 in the art at the relevant time. A POSITA would have been motivated to combine
5 any of the references described in attached Exhibits 001-1 through 001-B, including
6 for the reasons described below. A POSITA at the time of filing of the asserted
7 patents would also have understood the references listed above, alone or in
8 combination, to contain explicit and/or implicit teaching, suggestion, and/or
9 rationales to combine them, including as described above with respect to the '953,
10 '258, and '715 Patents, which similarly describes a system for maintaining
11 synchronous playback among a plurality of playback devices, and as further
12 described below.

13 Like the '953, '258, and '715 Patents, the alleged invention of the '001 Patent
14 relates to a system for maintaining synchronous playback among a plurality of
15 playback devices that have independent clocking arrangements. The system, as
16 claimed, includes additional features beyond the features recited in the Asserted
17 Claims of the '953, '258, and '001 Patents—most notably, the ability to designate a
18 device as one of control-master or control-slave, and one of an audio-master or
19 audio-slave. *See* '001 Patent at cl. 12.

20 As described with respect the '953, '258, and '715 Patents, the common
21 elements were conventional in synchronized wireless playback systems well before
22 the priority date of the '001 Patent. The additional features were also conventional
23 in wireless playback systems well before the priority date of the '001 Patent. For
24 example, synchronized wireless playback systems that allowed for separate
25 designation of a playback device as a control-master or control-slave, and audio-
26 master or audio-slave were well-known prior to the '001 Patent and the prior art is
27 replete with teachings that confirm this knowledge. *See, e.g.,* Janevski at Abstract
28 (describing that any participant (*i.e.*, and slave device) may “perform[] a control

1 function” and that as a result “all other participants follow synchronously,” while
2 status messages are only sent out by “the PVR 114 a that initiated the session” (*i.e.*,
3 the master device)); Balassanian at 5:61-6:13 (describing a “source device” that
4 sends “a rendering time to each of the rendering devices” and a separate “audio
5 rendering device that renders audio content); Goldberg at [0173] (describing that
6 control information inputted by “the user at the receive unit” and “passed back to the
7 broadcast unit”). As described above with respect to the ’953 Patent, synchronized
8 wireless playback systems that utilized separate controllers were also well-known
9 prior to the ’258 Patent. *See, e.g.*, Goldberg at [0096] (describing a “**unit**
10 **controller**” that “performs various operational and executive functions”) (emphasis
11 added); Janevski at 7:4-24 (describing that the initiator could be controlled “via a
12 **remote control**” or “via controls on the PVR 114a itself”) (emphasis added).

13 In sum, by the time the ’001 Patent was filed, it was well known to perform
14 synchronized playback between master and slave devices as claimed at least because
15 all the above was well known in the art before the ’001 Patent, and a POSITA would
16 have known that any and/or all the above techniques could be combined to provide a
17 system for synchronous playback among a plurality of playback devices. This is
18 especially true here because all of the references disclose master and slave devices
19 for rendering audio and/or video content and timing information for maintaining
20 synchrony between the playback devices. As such, a POSITA would have logically
21 and predictably consulted all of the references together to arrive at the alleged
22 invention in the ’001 Patent.

23 Furthermore, the general background knowledge described above and below
24 would have provided the basis for combining any number of known Applicant’s
25 Admitted Prior Art, and/or the additional prior art references discussed above, and in
26 Exhibits 001-1 through 001-B. Because all of these techniques were already known
27 in the art for use in synchronous playback systems that utilized master and slave
28 devices, a POSITA would have understood that combining any/all of these

1 techniques would have yielded predictable results, would have been a simple
2 substitution of one known technique for another to obtain predictable results, would
3 have used known techniques to improve similar techniques in the same way, would
4 have applied a known technique to a known method that was ready for improvement
5 to yield predictable results, would have been obvious to try because the techniques
6 were all known and there was reasonable expectation of success in combining them,
7 would have been obvious to try to improve a synchronized playback system with
8 master and slave devices, and would have been obvious because all techniques were
9 already known and combined in various fashions before. With respect to the prior
10 art references in Exhibits 001-1 through 001-B, a POSITA would have been
11 motivated to combine any of the references identified as prior art to the '001 patent
12 for these reasons provided above and the additional reasons provided below.

13 First, the prior art references identified above and the accompanying
14 invalidity claim charts teach similar devices for wireless transmitting multimedia
15 information, such as audio and/or video and associated timing information to
16 facilitate synchronous playback (and within relevant timeframes), and thus the
17 teachings of any one reference are applicable to other references in that same field.
18 *See generally, e.g.,* Janevski; Balassanian; Goldberg; Kono.

19 Second, a POSITA would have been motivated and found it obvious to apply
20 references teaching certain specific techniques—*e.g.,* Goldberg’s disclosure of a
21 control information being input at the receive unit (*i.e.,* the audio-slave and control-
22 master unit) before being “passed back to broadcast unit” (*i.e.,* the audio-master and
23 control-slave unit)—to other references that related to a synchronized playback
24 system with playback devices that serve in more generalized master and slave roles
25 because a POSITA would have understood the benefits of being able to control the
26 synchronization system by providing inputs at any of the devices that form part of
27 the synchronization system. For example, control information could be input into
28 one of the slave devices disclosed by Janevski to facilitate control of the system by

1 any of the PVRs, regardless of the source or rendering content and playback timing
2 information. Indeed, to the extent that Janevski does not disclose this specific
3 functionality, it suggests it could be readily implemented because it teaches that any
4 device may assume the role of the initiator. *See* Janevski at 7:31-50. A POSITA
5 would have thus been motivated to allow an audio-slave PVR to assume the role of
6 the control-master while issuing controls, to allow controls to be issued from any of
7 the PVRs without disrupting the transmission of audio content from an audio-master
8 to an audio-slave.

9 Additional obviousness combinations of the references identified here are
10 possible, and Defendant may rely on such combination(s) in this litigation. In
11 particular, Defendant is currently unaware of Sonos' allegations with respect to the
12 level of skill in the art and the qualifications of a POSITA. Defendant is also
13 unaware of the extent, if any, to which Sonos may contend that limitations of the
14 claims at issue are not disclosed in the prior art identified by defendant as
15 anticipatory, and the extent to which Sonos will contend that elements not disclosed
16 in the asserted patent specifications would have been known to a POSITA. And
17 Defendant does not yet know how the Court will construe terms in the asserted
18 claim. Defendant is also continuing its investigation of the large universe of prior
19 art to identify potential prior art systems, publications related to those systems, and
20 third parties that may have information about those systems. Defendant reserves the
21 right to amend and supplement these contentions to identify other prior art and
22 combinations rendering the asserted claim obvious.

23 (ix) The '896 Patent

24 The following is a list of prior art references that, either alone, or in
25 combination with the knowledge of a person of ordinary skill in the art, Applicant's
26 Admitted Prior Art, and/or the additional prior art references discussed below, and
27 in Exhibits 896-1 through 896-11 would have rendered obvious one or more
28 Asserted Claims of the '896 patent, including as indicated in the associated claim

1 charts. A person of ordinary skill in the art would have been motivated and had a
 2 reasonable expectation of success to make these combinations because, for example,
 3 each would have been merely: (a) a combination of prior art elements according to
 4 known methods to yield predictable results; (b) a simple substitution of one known
 5 element for another to obtain predictable results; (c) a use of a known technique to
 6 improve similar devices in the same way; (d) application of a known technique to a
 7 known device ready for improvement to yield predictable results; (e) obvious to try;
 8 and/or (f) known work in one field of endeavor prompting variations of it for use in
 9 either the same field or a different one based on design incentives or other market
 10 forces since the variations are predictable to one of ordinary skill in the art.

11 As set forth with more detail in Exhibits 896-1 through 896-11, Defendant
 12 contends that all claims are rendered obvious by the identified reference(s) alone, or
 13 in combination with other references, including the references identified below and
 14 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
896-01	cd3o	Creative, Linksys, BridgeCo, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-02	Chesire	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-03	BridgeCo	Creative, cd3o, Linksys, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-04	Creative	Linksys, cd3o, BridgeCo, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein,

Exhibit No.	Reference	In Combination With
		and/or various references cited in the Obviousness exhibit
896-05	Linksys	Creative, cd3o, BridgeCo, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-06	Gassho	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Chesire, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-07	Mathews	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, Chromecast, and/or various references cited in the Obviousness exhibit
896-08	Rector	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Chesire, Gassho, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-09	Airport Express	Creative, cd3o, BrdigeCo, Linksys, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-10	Yamaha	Creative, cd3o, Linksys, BridgeCo, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
896-11	Chromecast	Creative, cd3o, Linksys, BridgeCo, Yamaha, Airport Express, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit

Exhibit No.	Reference	In Combination With
896-B	Obviousness, citing various references	cd3o, BridgeCo, Linksys, Creative, Yamaha, Airport Express, Chromecast, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '896 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '896 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 896-1 through 896-11 and/or with a POSITA's general knowledge. Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 896-1 through 896-11, including for the reasons described below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as further described below.

The alleged invention of the '896 patent relates to a process for configuring a zone player to a secure wireless local area network or WLAN using a controller that is already connected to the secure WLAN. During the setup process, the zone player sends a message to the controller indicating it is ready to connect to the secure WLAN. The controller establishes a rudimentary communication path with the zone player over which the network configuration parameters are exchanged between the controller and the zone player. The zone player can use the network configuration parameters to connect to the secure WLAN. The asserted claims recite elements that

1 were conventional in wireless network configuration well before the priority date of
2 the '896 patent. As an example, Apple Airport Express was well-known prior to the
3 '896 patent and the prior art is replete with teachings that confirm this knowledge.
4 *See, e.g.*, Apple Airport Express; Google Chromecast; Linksys; cd3o; BridgeCo;
5 Creative; Yamaha; Cheshire; Mathews; Gassho; Rector.

6 It was well known at the time that establishing communication between two
7 devices involved various protocol-specific message exchanges. Depending on the
8 technology used, these exchanges enable devices to identify each other, agree on
9 parameters, conduct authentication, and initiate a reliable communication session,
10 etc.. For example, Bluetooth connection starts with inquiry and paging followed by
11 authentication for two devices to identify each other, enter connection state, and
12 validate the connection between the devices. For another example, an ad hoc
13 network or peer-to-peer connection starts with one device broadcasting an SSID and
14 operating channel. Another device scans and detects this network and sends
15 association requests to join the ad hoc network. Other technologies such as USB,
16 near field communication (“NFC”), etc., all involve protocol-specific message
17 exchange processes for establishing connection and data transfer. A POSITA who
18 adopted these existing technologies for transmitting network configuration
19 parameters would have understood that the initial message exchanges are an integral
20 part of the process. *See, e.g.*, Rector at [0028]; *see also, generally*, Gassho;
21 Mathews.

22 Music streaming over wireless network was also well-known prior to the '896
23 patent and the prior art is replete with teachings that confirm this knowledge. *See,*
24 *e.g.*, Apple Airport Express; Google Chromecast; Linksys; cd3o; BridgeCo;
25 Creative; Yamaha; Spurgat; Isely; Balassanian.

26 As discussed below, the specification of the '896 Patent does not disclose
27 controlling multiple zone players so that they can play back audio content in
28 synchrony. Without conceding the foregoing, synchronous music streaming on

1 multiple playback devices was also well-known prior to the '896 Patent and the
2 prior art is replete with teachings that confirm this knowledge. *See, e.g.*, Airport
3 Express; Chromecast; Yamaha; Spurgat; Isely; Balassanian.

4 In sum, by the time the '896 patent was filed, it was well known to configure
5 a playback device to connect to a secure WLAN using an existing, connected
6 computing device and stream music wirelessly as claimed at least because all the
7 above was well known in the art before the '896 patent, and a POSITA would have
8 known that any and/or all the above techniques could be combined to configure a
9 new device to join a secure WLAN through an existing, connected device and
10 wirelessly stream music to the new device. This is especially true here because all
11 of the references disclose automatic network configuration. As such, a POSITA
12 would have logically and predictably consulted all of the references together to
13 derive the solutions claimed in the '896 Patent.

14 Furthermore, the general background knowledge described above and below
15 would have provided the basis for combining any number of known methods for
16 message exchanges through a rudimentary communication path to facilitate the
17 process of network configuration. Because all of these techniques were already
18 known in the art for use in automatic network configuration and wireless music
19 streaming, a POSITA would have understood that combining any/all of these
20 techniques would have yielded predictable results, would have been a simple
21 substitution of one known technique for another to obtain predictable results, would
22 have used known techniques to improve similar techniques in the same way, would
23 have applied a known technique to a known method that was ready for improvement
24 to yield predictable results, would have been obvious to try because the techniques
25 were all known and there was reasonable expectation of success in combining them,
26 would have been obvious to try to improve an automated process for network
27 configuration and wireless music streaming, and would have been obvious because
28 all techniques were already known and combined in various fashions before. With

1 respect to the prior art references in Exhibits 896-1 through 896-11, a POSITA
2 would have been motivated to combine any of the references identified as prior art
3 to the '896 patent for these reasons provided above and the additional reasons
4 provided below.

5 First, the prior art references identified above and the accompanying
6 invalidity claim charts teach similar automated processes for network configuration
7 and wireless music streaming (and within relevant timeframes), and thus the
8 teachings of any one reference are applicable to other references in that same field.
9 *See, e.g.*, Airport Express; Linksys; cd3o; BridgeCo; Creative; Yamaha;
10 Chromecast; Cheshire; Mathews; Gassho; Rector. Further, where the references are
11 from the same manufacturer (e.g., Airport Express, individual publications about
12 technologies available from Apple, Cheshire, and/or Kearny), a POSITA would
13 have recognized those references are designed to operate in combination and been
14 motivated to combine them as such.

15 Second, a POSITA would have been motivated and found it obvious to apply
16 references teaching certain specific techniques—*e.g.*, Rector or Gassho—to other
17 references that relate to wireless playback devices generally because the automated
18 network configuration principles apply to any wireless devices including playback
19 devices. *See, e.g.*, Airport Express; Linksys; cd3o; BridgeCo; Creative; Yamaha;
20 Google Chromecast; Cheshire; Mathews.

21 A POSITA would have also been motivated and found it obvious to replace
22 and/or combine a reference's exact set of materials, components, or configurations
23 in a particular computing device with the teachings regarding other materials,
24 components, and configurations used in other computing devices for all the reasons
25 provided above and below. These modifications would have been a simple
26 substitution of one known element for another, which would have obtained
27 predictable results because it was already well known in the art that teaches network
28 configuration and wireless music streaming. The substitution of one component,

1 material, or configuration for another would not have changed the principle of
2 operation for either reference in any combination because the references all use
3 similar mechanisms for a similar purpose: automated network configuration and
4 wireless music streaming. This is thus a combination of prior art elements (*e.g.*,
5 establishing a rudimentary communication path and exchanging message therefrom,
6 configuring a new device using information obtained through message exchange via
7 the rudimentary communication path between a connected device and the new
8 device) according to known methods (a POSITA would understand that these are all
9 available design choices) to yield predictable results (a POSITA would understand
10 the benefits and drawbacks of each design choice, and there are no unexpected
11 results from any particular combination). A POSITA would have been motivated to
12 combine these teachings, and to make these replacements, because all of these
13 wireless network components, materials, and configurations were widely used
14 techniques. Accordingly, a POSITA would have had a reasonable expectation of
15 success given considerations discussed above, the similarities in the teachings and
16 systems, and given that the claimed components and configurations of wireless
17 network were all well-known at the time. Implementing the combination and any
18 necessary modifications would have been routine and within the scope of the prior
19 art references' teachings.

20 As one example, to the extent that a primary reference does not disclose the
21 "retrieving the current network configuration parameters of the computing device"
22 limitation, it would have been obvious to combine any of these references with, *e.g.*,
23 Apple Keychain Services, to arrive at said limitation because those references
24 disclose such limitation, and a POSITA would have been motivated to consult
25 references that disclose retrieving network configuration settings from the current
26 computer. *See, e.g.*, Apple Keychain Services. This would be convenient to the
27 user. For many primary references, user convenience is already a monitoring factor,
28 and permitting the retrieval of parameters instead of having them inputted by the

1 user, would further improve user convenience. Moreover, there's no technical
2 impediment to implementing this feature – to the extent it is missing from a primary
3 reference, it is only missing due to permission issues when software is installed on
4 the operating system of another entity.

5 As another example, to the extent a primary reference does not disclose “an
6 application for controlling the playback device” (as interpreted by Sonos) or
7 dependent claim limitations related to audio playback, it would have been obvious
8 to combine any of these references with, e.g., Yamaha, Spurgat, Isely, Balassanian,
9 Kearney. Setup and control after setup are separate features, and a POSITA would
10 have been motivated to pick and choose different implementations for each feature
11 from different references. For example, a reference like Gassho that discloses *inter*
12 *alia* setup of devices like printers or BridgeCo that includes a remote for controlling
13 playback directly on a playback device can be selected for its disclosure of the setup
14 feature and then combined with a different reference, such as Yamaha, from the
15 media playback space for its disclosure of the control feature. A POSITA would be
16 motivated to select references for each feature that best meet the needs and
17 preferences of the POSITA for each individual feature. For example, the POSITA
18 may want to implement setup over a wireless initial communication channel, such as
19 Linksys or BridgeCo, and combine that with a reference that teaches control from a
20 computing device rather than just the playback device directly, such as cd3o or
21 Creative.

22 As another example, to the extent a primary reference does not disclose the
23 “transmitting a command to the given playback device to form a group with at least
24 a first playback device of a networked audio system such that the given playback
25 device is configured to play back audio content in synchrony with at least the first
26 playback device” limitation, it would have been obvious to combine any of these
27 references with, e.g., Yamaha, Airport Express; Chromecast; Spurgat, Isely,
28 Balassanian, to arrive at said limitation because those references disclose such

1 limitation, and a POSITA would have been motivated to consult references that
2 disclose synchronous playback – a feature that, to the extent was allegedly missing
3 from the primary reference, a user would find desirable, or that can be improved by
4 relying on art more focused on implementing synchrony, e.g., via coordination
5 between devices. *See, e.g.*, Yamaha, Airport Express; Chromecast; Spurgat, Isely,
6 Balassanian.

7 Additional obviousness combinations of the references identified here are
8 possible, and Defendant may rely on such combination(s) in this litigation. In
9 particular, Defendant is currently unaware of Sonos’ allegations with respect to the
10 level of skill in the art and the qualifications of a POSITA. Defendant is also
11 unaware of the extent, if any, to which Sonos may contend that limitations of the
12 claims at issue are not disclosed in the prior art identified by defendant as
13 anticipatory, and the extent to which Sonos will contend that elements not disclosed
14 in the asserted patent specifications would have been known to a POSITA. And
15 Defendant does not yet know how the Court will construe terms in the asserted
16 claim. Defendant is also continuing its investigation of the large universe of prior
17 art to identify potential prior art systems, publications related to those systems, and
18 third parties that may have information about those systems. Defendant reserves the
19 right to amend and supplement these contentions to identify other prior art and
20 combinations rendering the asserted claim obvious.

21 (x) The ’883 Patent

22 The following is a list of prior art references that, either alone, or in
23 combination with the knowledge of a person of ordinary skill in the art, Applicant’s
24 Admitted Prior Art, and/or the additional prior art references discussed below, and
25 in Exhibits 883-1 through 883-11 would have rendered obvious one or more
26 Asserted Claims of the ’883 patent, including as indicated in the associated claim
27 charts. A person of ordinary skill in the art would have been motivated and had a
28 reasonable expectation of success to make these combinations because, for example,

1 each would have been merely: (a) a combination of prior art elements according to
 2 known methods to yield predictable results; (b) a simple substitution of one known
 3 element for another to obtain predictable results; (c) a use of a known technique to
 4 improve similar devices in the same way; (d) application of a known technique to a
 5 known device ready for improvement to yield predictable results; (e) obvious to try;
 6 and/or (f) known work in one field of endeavor prompting variations of it for use in
 7 either the same field or a different one based on design incentives or other market
 8 forces since the variations are predictable to one of ordinary skill in the art.

9 As set forth with more detail in Exhibits 883-1 through 883-11, Defendant
 10 contends that all claims are rendered obvious by the identified reference(s) alone, or
 11 in combination with other references, including the references identified below and
 12 discussed in the attached exhibits.

Exhibit No.	Reference	In Combination With
883-01	cd3o	Creative, Linksys, BridgeCo, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-02	Chesire	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-03	BridgeCo	Creative, cd3o, Linksys, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-04	Creative	Linksys, cd3o, BridgeCo, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit

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Exhibit No.	Reference	In Combination With
883-05	Linksys	Creative, cd3o, BridgeCo, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-06	Gassho	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Chesire, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-07	Mathews	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, Chromecast, and/or various references cited in the Obviousness exhibit
883-08	Rector	Creative, cd3o, BridgeCo, Linksys, Yamaha, Kearney, Chesire, Gassho, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-09	Airport Express	Creative, cd3o, BrdigeCo, Linksys, Yamaha, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-10	Yamaha	Creative, cd3o, Linksys, BridgeCo, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit
883-11	Chromecast	Creative, cd3o, Linksys, BridgeCo, Yamaha, Airport Express, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit

Exhibit No.	Reference	In Combination With
883-B	Obviousness, citing various references	cd3o, BridgeCo, Linksys, Creative, Yamaha, Airport Express, Chromecast, Kearney, Chesire, Gassho, Rector, Spurgat, Balassanian, Isely, Richenstein, and/or various references cited in the Obviousness exhibit

To the extent that any of the anticipation references is found not to disclose a limitation recited in the asserted claim of the '883 patent, it would have been obvious to a POSITA at the time of the alleged invention of the '883 patent either (i) to modify the reference to include this limitation and any remaining limitations of this claim and/or (ii) to combine said reference with any other of the references in Exhibits 883-1 through 883-11 and/or with a POSITA's general knowledge. Generally, motivation to combine any of these references with others exists within the references themselves, as well as within the knowledge of those of ordinary skill in the art at the relevant time. A POSITA would have been motivated to combine any of the references described in attached Exhibits 883-1 through 883-11, including for the reasons described below. A POSITA at the time of filing of the asserted patents would also have understood the references listed above, alone or in combination, to contain explicit and/or implicit teaching, suggestion, and/or rationales to combine them, including as further described below.

The alleged invention of the '883 patent relates to the same wireless network configuration and music steaming technology as in the '896 Patent. The '883 Patent was filed on the same day as the '896 Patent and both were continuations of the same series of predecessor applications. The '883 Patent claims on a playback device while the '896 Patent claims on a computing device that is already connected to the secure WLAN and exchanges network configuration parameters with the playback device. In other words, the '883 Patent and the '896 Patent relate to the

1 same technology and represent two sides of the same coin. Not surprisingly, the
2 '883 Patent includes a terminal disclaimer on the '896 Patent.

3 As discussed above in the '896 Patent, the asserted claims recite elements that
4 were conventional in wireless network configuration and music streaming well
5 before the priority date of the '883 patent. As an example, Apple Airport Express
6 was well-known prior to the '883 patent and the prior art is replete with teachings
7 that confirm this knowledge. *See, e.g.*, Airport Express; Chromecast; Linksys; cd3o;
8 BridgeCo; Creative; Yamaha; Cheshire; Mathews; Gassho; Rector.

9 Also as discussed above and without conceding that the '883 provides
10 sufficient disclosure on controlling multiple zone players to play audio content in
11 synchrony, synchronous music streaming on multiple playback devices was also
12 well-known prior to the '883 patent and the prior art is replete with teachings that
13 confirm this knowledge. *See, e.g.*, Yamaha; Spurgat; Isely; Balassanian.

14 In sum, by the time the '883 patent was filed, it was well known to configure
15 a playback device to connect to a secure WLAN using an existing, connected
16 computing device and stream music wirelessly as claimed at least because all the
17 above was well known in the art before the '883 patent, and a POSITA would have
18 known that any and/or all the above techniques could be combined to configure a
19 new device to join a secure WLAN through an existing, connected device and
20 wirelessly stream music to the new device. This is especially true here because all
21 of the references disclose automatic network configuration. As such, a POSITA
22 would have logically and predictably consulted all of the references together to
23 derive the solutions claimed in the '883 Patent.

24 Furthermore, the general background knowledge described above and below
25 would have provided the basis for combining any number of known methods for
26 message exchanges through a rudimentary communication path to facilitate the
27 process of network configuration. Because all of these techniques were already
28 known in the art for use in automatic network configuration and wireless music

1 streaming, a POSITA would have understood that combining any/all of these
2 techniques would have yielded predictable results, would have been a simple
3 substitution of one known technique for another to obtain predictable results, would
4 have used known techniques to improve similar techniques in the same way, would
5 have applied a known technique to a known method that was ready for improvement
6 to yield predictable results, would have been obvious to try because the techniques
7 were all known and there was reasonable expectation of success in combining them,
8 would have been obvious to try to improve an automated process for network
9 configuration and wireless music streaming, and would have been obvious because
10 all techniques were already known and combined in various fashions before. With
11 respect to the prior art references in Exhibits 883-1 through 883-11, a POSITA
12 would have been motivated to combine any of the references identified as prior art
13 to the '883 patent for these reasons provided above and the additional reasons
14 provided below.

15 First, the prior art references identified above and the accompanying
16 invalidity claim charts teach similar automated processes for network configuration
17 and wireless music streaming (and within relevant timeframes), and thus the
18 teachings of any one reference are applicable to other references in that same field.
19 *See, e.g.,* Airport Express; Linksys; cd3o; BridgeCo; Creative; Yamaha;
20 Chromecast; Cheshire; Matthews; Gassho; Rector. Further, where the references are
21 from the same manufacturer (e.g., Airport Express, individual publications about
22 technologies available from Apple, Cheshire, and/or Kearny), a POSITA would
23 have recognized those references are designed to operate in combination and been
24 motivated to combine them as such.

25 Second, a POSITA would have been motivated and found it obvious to apply
26 references teaching certain specific techniques—*e.g.,* Rector or Gassho—to other
27 references that relate to wireless playback devices generally because the automated
28 network configuration principles apply to any wireless devices including playback

1 devices. *See, e.g.*, Airport Express; Linksys; cd3o; BridgeCo; Creative; Yamaha;
2 Cheshire; Mathews.

3 A POSITA would have also been motivated and found it obvious to replace
4 and/or combine a reference's exact set of materials, components, or configurations
5 in a particular image sensor with the teachings regarding other materials,
6 components, and configurations used in other image sensor for all the reasons
7 provided above and below. These modifications would have been a simple
8 substitution of one known element for another, which would have obtained
9 predictable results because it was already well known in the art that teaches network
10 configuration and wireless music streaming. The substitution of one component,
11 material, or configuration for another would not have changed the principle of
12 operation for either reference in any combination because the references all use
13 similar mechanisms for a similar purpose: automated network configuration and
14 wireless music streaming. This is thus a combination of prior art elements (*e.g.*,
15 establishing a rudimentary communication path and exchanging message therefrom,
16 configuring a new device using information obtained through message exchange via
17 the rudimentary communication path between a connected device and the new
18 device) according to known methods (a POSITA would understand that these are all
19 available design choices) to yield predictable results (a POSITA would understand
20 the benefits and drawbacks of each design choice, and there are no unexpected
21 results from any particular combination). A POSITA would have been motivated to
22 combine these teachings, and to make these replacements, because all of these
23 wireless network components, materials, and configurations were widely used
24 techniques. Accordingly, a POSITA would have had a reasonable expectation of
25 success given considerations discussed above, the similarities in the teachings and
26 systems, and given that the claimed components and configurations of wireless
27 network were all well-known at the time. Implementing the combination and any
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1 necessary modifications would have been routine and within the scope of the prior
2 art references' teachings.

3 As one example, to the extent a primary reference does not disclose "an
4 application for controlling the playback device" (as interpreted by Sonos) or
5 dependent claim limitations related to audio playback, it would have been obvious
6 to combine any of these references with, e.g., Yamaha, Spurgat, Isely, Balassanian,
7 Kearney. Setup and control after setup are separate features, and a POSITA would
8 have been motivated to pick and choose different implementations for each feature
9 from different references. For example, a reference like Gassho that discloses inter
10 alia setup of devices like printers or BridgeCo that includes a remote for controlling
11 playback directly on a playback device can be selected for its disclosure of the setup
12 feature and then combined with a different reference, such as Yamaha, from the
13 media playback space for its disclosure of the control feature. A POSITA would be
14 motivated to select references for each feature that best meet the needs and
15 preferences of the POSITA for each individual feature. For example, the POSITA
16 may want to implement setup over a wireless initial communication channel, such as
17 Linksys or BridgeCo, and combine that with a reference that teaches control from a
18 computing device rather than just the playback device directly, such as cd3o or
19 Creative.

20 For another example, to the extent that a primary reference does not disclose
21 "the triggering event comprises one of (a) powering on the playback device or (b)
22 receiving user input via a physical interface of the playback device" limitation, it
23 would have been obvious to do so because initiating configuration process for the
24 playback device through either means would be intuitive. Such a feature was
25 commonly offered to simplify the configuration process and improve user
26 experience. *See, e.g.*, Linksys, Airport Express, Yamaha, cd3o, BridgeCo, Creative.
27 Thus, a POSITA would have been motivated to include this feature into the
28 playback device as part of the device's auto configuration capability.

1 As another example, to the extent that a primary reference does not disclose
2 the “receiving, from the computing device, a command to form a group with at least
3 a first playback device of a networked audio system such that the playback device is
4 configured to play back audio content in synchrony with at least the first playback
5 device” limitation, it would have been obvious to combine any of these references
6 with, e.g., Yamaha, Spurgat, Isely, Balassanian, to arrive at said limitation because
7 those references disclose such limitation, and a POSITA would have been motivated
8 to consult references that disclose synchronous playback – a feature that, to the
9 extent was allegedly missing from the primary reference, a user would find
10 desirable, or that can be improved by relying on art more focused on implementing
11 synchrony, e.g., via coordination between devices. *See, e.g.,* Yamaha, Airport
12 Express; Chromecast; Spurgat, Isely, Balassanian.

13 For another example, to the extent that a primary reference does not disclose
14 “transmitting, to the computing device via the initial communication path, at least a
15 third message indicating that the playback device has successfully received the
16 network configuration parameters” limitation, it would have been obvious to do so
17 because a confirmation or acknowledgment message was common in many existing
18 communication protocols. For example, a POSITA would simply substitute the data
19 transmission protocol from UDP to TCP, which has built-in reliability mechanisms
20 and confirmation messages (acknowledgments) to ensure successful data
21 transmission. A POSITA would also be motivated to do so because confirmation of
22 successful receipt of the network configuration parameters helps the computing
23 device monitor whether the playback device can successfully connect to the WLAN
24 and provide remedial measures in case of a failure.

25 By way of another example, to the extent that a primary reference does not
26 disclose the “a command to assign a name to the playback device” limitation, it
27 would have been obvious and trivial to do so because assigning a name to a newly
28 connected device was well known and common practice at the time. Further,

1 primary references such as Gassho discuss in detail as exemplary the setup of a
2 wireless printer. Assigning a name to a newly connected printer was and remains
3 common practice for any user, and therefore it would be obvious to apply that
4 principle to other network devices discussed in Gassho and other references such as
5 cell phones and audio devices. *See, e.g.*, Gassho, Rector, Cheshire, Yamaha,
6 Spurgat, Isely, Balassanian.

7 Additional obviousness combinations of the references identified here are
8 possible, and Defendant may rely on such combination(s) in this litigation. In
9 particular, Defendant is currently unaware of Sonos' allegations with respect to the
10 level of skill in the art and the qualifications of a POSITA. Defendant is also
11 unaware of the extent, if any, to which Sonos may contend that limitations of the
12 claims at issue are not disclosed in the prior art identified by defendant as
13 anticipatory, and the extent to which Sonos will contend that elements not disclosed
14 in the asserted patent specifications would have been known to a POSITA. And
15 Defendant does not yet know how the Court will construe terms in the asserted
16 claim. Defendant is also continuing its investigation of the large universe of prior
17 art to identify potential prior art systems, publications related to those systems, and
18 third parties that may have information about those systems. Defendant reserves the
19 right to amend and supplement these contentions to identify other prior art and
20 combinations rendering the asserted claim obvious.

21 **C. Invalidity Contentions Pursuant to S.P.R. 2.5.4 – 35 U.S.C. § 112**

22 Pursuant to S.P.R. 2.5.4, Google contends that certain Asserted Claims of the
23 Patents- In-Suit are invalid under 35 U.S.C. § 112 because: (1) the claims lack
24 adequate written description; (2) the claims are not enabled, and/or (3) the claims
25 are indefinite. Defendant's contentions that the following claims are invalid under
26 35 U.S.C. § 112 are made in the alternative and do not constitute, and should not be
27 interpreted as, admissions regarding the construction or scope of the claims of the
28 Patents-In-Suit, or that any of the claims of the Patents-In-Suit are not anticipated or

1 rendered obvious by prior art. The following contentions, made pursuant to P.R. 3-
2 3(d), are subject to revision and amendment pursuant to Federal Rule of Civil
3 Procedure 26(e) and the Orders of record in this matter to the extent appropriate,
4 e.g., in light of further investigation and discovery regarding the defenses, the
5 Court’s construction of the claims at issue, and/or review and analysis of expert
6 witnesses.

7 **1. Enablement and Written Description**

8 The asserted claims are invalid for failure to comply with the written
9 description and enablement requirements because the Patents-in-Suit do not contain
10 sufficient written description of the claimed invention and do not provide a
11 sufficiently enabling disclosure. *See* 35 U.S.C. § 112. To satisfy the written
12 description requirement, a patent specification must describe the claimed invention
13 in sufficient detail that one skilled in the art can reasonably conclude that the
14 inventor had possession of the claimed invention at the time of filing the patent
15 application. *See generally Ariad Pharm., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336
16 (Fed. Cir. 2010) (en banc). “To be enabling, the specification of a patent must teach
17 those skilled in the art how to make and use the full scope of the claimed invention
18 without undue experimentation.” *MagSil Corp. v. Hitachi Global Storage Techs.*,
19 687 F.3d 1377, 1380-81 (Fed. Cir. 2012) (citation omitted). The specifications of
20 the Patents-in-Suit do not adequately describe or enable the claimed inventions
21 recited in the Asserted Claims.

22 The “enablement requirement is satisfied when one skilled in the art, after
23 reading the specification, could practice the claimed invention without undue
24 experimentation.” *Auto. Techs. Int’l, Inc. v. BMW of N. Am.*, 501 F.3d 1274, 1282
25 (Fed. Cir. 2007). A claimed invention may be invalid for lack of written description
26 and non-enablement even if it was disclosed in the prior art: “It is the specification,
27 not the knowledge of one skilled in the art, that must supply the novel aspects of an
28 invention in order to constitute adequate enablement.” *Genentech v. Novo Nordisk*,

1 108 F.3d 1361, 1366 (Fed. Cir. 1997). The patentee is “required to provide an
2 adequate enabling disclosure in the specification; it cannot simply rely on the
3 knowledge of a person of ordinary skill to serve as a substitute for the missing
4 information in the specification.” *Alza Corp. v. Andrx Pharms., LLC*, 603 F.3d 935,
5 940-41 (Fed. Cir. 2010). “A patentee who chooses broad claim language must make
6 sure the broad claims are fully enabled.” *Sitrick v. Dreamworks, LLC*, 516 F.3d
7 993, 999-1000 (Fed. Cir. 2008). As the Federal Circuit has explained:

8 Enablement serves the dual function in the patent system of ensuring adequate
9 disclosure of the claimed invention and of preventing claims broader than the
10 disclosed invention. This important doctrine prevents both inadequate disclosure of
11 an invention and overbroad claiming that might otherwise attempt to cover more
12 than was actually invented. Thus, a patentee chooses broad claim language at the
13 peril of losing any claim that cannot be enabled across its full scope of coverage.
14 *Magsil Corp. and MIT v. Hitachi*, 687 F.3d 1377, 1380-81 (Fed. Cir. 2012). “The
15 specification must contain sufficient disclosure to enable an ordinarily skilled artisan
16 to make and use the entire scope of the claimed invention at the time of filing.” *Id.*
17 at 1381-82.

18 Google contends that the specification does not provide sufficient written
19 description and enablement for each of the claim limitations identified below, which
20 identify grounds of invalidity for lack of enablement and written description with
21 respect to the asserted claim and the limitations of the asserted claim, pursuant to
22 S.P.R. 2.5.4. Where Google has identified a phrase as lacking written description
23 and/or enablement, Google also contends that the subparts of the phrase lack written
24 description and/or enablement within the context recited in the claim.

25 The following discussion includes the identification and discussion of claim
26 terms and limitations lacking § 112 written description and enablement support. A
27 more detailed basis for Defendant’s written description and enablement defenses
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1 may be set forth in any expert report(s) on invalidity to be served by Defendant in
2 accordance with the Court’s Scheduling Order.

3 (a) **’949 Patent**

4 Asserted claims 1, 2, 4, 5, 8, 9, 11, and 12 of the ’949 patent fail to satisfy the
5 requirements of 35 U.S.C. § 112 at least because the ’949 patent fails to provide an
6 adequate written description or enablement of the following limitations, at least as
7 those limitations are applied by Sonos in its infringement contentions:

- 8 • “the player group for synchronized playback of a multimedia output
9 from the same multimedia source” (claim 1)
- 10 • “each of the players in the player group to adjust its respective volume”
11 (claims 1 and 8)
- 12 • “the volumes of each of the players in the player group should be
13 adjusted in scale” (claims 4 and 11)

14 The foregoing phrases are not described in such a way that a person having
15 ordinary skill in the art at the time of the alleged invention would have understood
16 that the individuals named as the inventors on the face of the ’949 patent were in
17 possession of the claimed subject matter, at least to the extent the claims are
18 interpreted consistently with the positions taken in Plaintiff’s infringement
19 contentions. Furthermore, to the extent the claims are interpreted consistently the
20 positions taken in Plaintiff’s infringement contentions, the ’949 patent fails to teach
21 a person of ordinary skill in the art how to make and use the full scope of the
22 claimed invention without undue experimentation with respect to foregoing phrases.
23 To the extent the claims are construed or interpreted to be as broad as the positions
24 taken in Plaintiff’s infringement contentions, the ’949 patent does not provide
25 adequate written description or enable the full scope of the claim limitations listed
26 above.

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(b) '014 Patent

Asserted claims 25, 32, 35, 38, 42, and 43 of the '014 patent fail to satisfy the requirements of 35 U.S.C. § 112 at least because the '014 patent fails to provide an adequate written description or enablement of the following limitations, at least as those limitations are applied by Sonos in its infringement contentions:

- “displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group” (claim 25)
- “wherein any one of the players in the group serves as a zone group head” (claim 25)
- “synchronizing all players in the zone group in accordance with the zone group head ” (claim 25)
- “adjusting a volume meter represented by an averaged value of audio volumes of the [p]layers in the group” (claims 25 and 38)
- “adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user” (claim 25)
- “selecting the zone group to be de-grouped from the first list” (claim 35)
- “another list showing all the players within the zone group to be de-grouped” (claim 35)
- “selecting one or more players from the another list” (claim 35)
- “disassociating the selected players from the zone group” (claim 35)
- “adjusting of the one of the volume meters includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user” (claim 38)
- “maintaining relative volume loudness difference among each of the players in the group” (claim 42)

- 1 • “configure the playback device to perform a second equalization of the
2 audio” (claim 5)
- 3 • “the signal comprises an instruction for the playback device to pair with
4 one or more playback devices”/“an instruction for the playback device
5 to pair with one or more playback devices” (claims 10 and 29)

6 The foregoing phrases are not described in such a way that a person having
7 ordinary skill in the art at the time of the alleged invention would have understood
8 that the individuals named as the inventors on the face of the '959 patent were in
9 possession of the claimed subject matter, at least to the extent the claims are
10 interpreted consistently with the positions taken in Plaintiff's infringement
11 contentions. Furthermore, to the extent the claims are interpreted consistently the
12 positions taken in Plaintiff's infringement contentions, the '959 patent fails to teach
13 a person of ordinary skill in the art how to make and use the full scope of the
14 claimed invention without undue experimentation with respect to foregoing phrases.
15 To the extent the claims are construed or interpreted to be as broad as the positions
16 taken in Plaintiff's infringement contentions, the '959 patent does not provide
17 adequate written description or enable the full scope of the claim limitations listed
18 above.

19 (d) **'025 Patent**

20 Asserted claims 1, 10, 12, 13, and 18 of the '025 patent fail to satisfy the
21 requirements of 35 U.S.C. § 112 at least because the '025 patent fails to provide an
22 adequate written description or enablement of the following limitations, at least as
23 those limitations are applied by Sonos in its infringement contentions:

- 24 • “receive a signal from a controller over the network” (claim 1)
- 25 • “the signal comprises an instruction for the playback device to become
26 paired with one or more other playback devices such that, after pairing,
27 the playback device and the one or more other playback devices have
28 different playback roles” (claims 1 and 18)

- 1 • “determine that either (a) the playback device is not paired with the one
2 or more other playback devices ” (claims 1 and 18)
- 3 • “configure the playback device to perform a first processing of the audio
4 data so as to output two-channel audio based on the audio data from the
5 one or more speaker drivers after the playback device has determined it
6 is not paired with the one or more other playback devices” (claim 1 and
7 18)
- 8 • “determine . . . (b) that the playback device is paired with the one or more
9 other playback devices such that the playback device and the one or more
10 other playback devices have the different playback roles” (claim 1)
- 11 • “configuring the playback device to perform a second processing of the
12 audio data so as to output one-channel audio based on the audio data
13 from the one or more speaker drivers after the playback device has
14 determined it is paired with the one or more other playback devices”
15 (claim 1)
- 16 • “separate the audio data into separate audio channels” (claims 10 and 12)
- 17 • “output audio based on audio data of at least one separate audio channel
18 from the one or more speaker drivers” (claims 10 and 12)
- 19 • “the playback device is further configured to receive another signal from
20 the controller over the network, wherein the other signal comprises an
21 instruction for the playback device to separate the pair with the one or
22 more other playback devices” (claim 13)
- 23 • “Configuring the playback device to perform a second processing of the
24 audio data so as to output one-channel audio based on the audio data
25 from the one or more speaker drivers” (claim 18)

26 The foregoing phrases are not described in such a way that a person having
27 ordinary skill in the art at the time of the alleged invention would have understood
28 that the individuals named as the inventors on the face of the '025 patent were in

1 possession of the claimed subject matter, at least to the extent the claims are
2 interpreted consistently with the positions taken in Plaintiff’s infringement
3 contentions. Furthermore, to the extent the claims are interpreted consistently the
4 positions taken in Plaintiff’s infringement contentions, the ’025 patent fails to teach
5 a person of ordinary skill in the art how to make and use the full scope of the
6 claimed invention without undue experimentation with respect to foregoing phrases.
7 To the extent the claims are construed or interpreted to be as broad as the positions
8 taken in Plaintiff’s infringement contentions, the ’025 patent does not provide
9 adequate written description or enable the full scope of the claim limitations listed
10 above.

11 (e) **’953 Patent**

12 Asserted claims 7, 8, 12-14, 18, 22-25, and 28-30 of the ’953 patent fail to
13 satisfy the requirements of 35 U.S.C. § 112 at least because the ’953 patent fails to
14 provide an adequate written description or enablement of the following limitations,
15 at least as those limitations are applied by Sonos in its infringement contentions:

- 16 • “receiving a request to enter into a synchrony group with at least a second
17 zone player that is communicatively coupled with the first zone player
18 over a local area network (LAN)” (claims 7, 25)
- 19 • “receiving, from the second zone player over the LAN, clock timing
20 information that comprises at least one reading of the clock time of the
21 second zone player” (claims 7, 25)
- 22 • “receiving, from the second zone player over the LAN, (a) audio
23 information for at least a first audio track and (b) playback timing
24 information associated with the audio information for the first audio
25 track that comprises an indicator of a first future time, relative to the
26 clock time of the second zone player, at which the first and second zone
27 players are to initiate synchronous playback of the audio information for
28 the first audio track” (claims 7, 25)

- 1 • “receiving the request to enter into the synchrony group with at least the
2 second zone player over the LAN from one or both of (a) a controller
3 device that is communicatively coupled to the first zone player over the
4 LAN and (b) the second zone player” (claim 8)
- 5 • “wherein receiving the audio information for the first audio track from
6 the second zone player over the LAN comprises: receiving a series of
7 frames that each include a respective portion of the obtained audio
8 information for the first audio track” (claim 12)
- 9 • “wherein a first frame in the series of frames includes the indicator of the
10 first future time” (claim 13)
- 11 • “an indicator of a respective future time, relative to the clock time of the
12 second zone player, at which the frame is to be synchronously played
13 back by the first and second zone players” (claim 14)
- 14 • “after determining the initial differential between the clock time of the
15 first zone player and the clock time of the second zone player, receiving,
16 from the second zone player over the LAN, updated clock timing
17 information that includes at least one updated reading of the clock time
18 of the second zone player; and based on the updated timing information,
19 determining an updated differential between the clock time of the first
20 zone player and the clock time of the second zone player” (claims 18,
21 28)
- 22 • “receiving, from the second zone player over the LAN, a command to
23 adjust an individual volume of the first zone player; and in response to
24 receiving the command, adjusting the individual volume of the first zone
25 player” (claims 22, 29)
- 26 • “while operating as the slave of the synchrony group, receiving, from the
27 second zone player over the LAN, control information that enables the
28 first zone player to begin operating as the master of the synchrony group;

1 and in response to receiving the control information, transitioning from
2 operating as the slave of the synchrony group to operating as the master
3 of the synchrony group” (claims 23, 30)

4 The foregoing phrases are not described in such a way that a person having
5 ordinary skill in the art at the time of the alleged invention would have understood
6 that the individuals named as the inventors on the face of the '953 patent were in
7 possession of the claimed subject matter, at least to the extent the claims are
8 interpreted consistently with the positions taken in Plaintiff's infringement
9 contentions. Furthermore, to the extent the claims are interpreted consistently the
10 positions taken in Plaintiff's infringement contentions, the '953 patent fails to teach
11 a person of ordinary skill in the art how to make and use the full scope of the
12 claimed invention without undue experimentation with respect to foregoing phrases.
13 To the extent the claims are construed or interpreted to be as broad as the positions
14 taken in Plaintiff's infringement contentions, the '953 patent does not provide
15 adequate written description or enable the full scope of the claim limitations listed
16 above.

17 (f) **'258 Patent**

18 Asserted claims 17, 21-24, and 26 of the '258 patent fail to satisfy the
19 requirements of 35 U.S.C. § 112 at least because the '258 patent fails to provide an
20 adequate written description or enablement of the following limitations, at least as
21 those limitations are applied by Sonos in its infringement contentions:

- 22 • “a network interface configured to interface the first zone player with at
23 least a local area network (LAN)” (claim 17)
 - 24 • “receive control information from any one of a plurality of controllers
25 over the LAN via the network interface, wherein the received control
26 information comprises a direction for the first zone player to enter into a
27 synchrony group with at least a second zone player” (claim 17)
- 28

- 1 • “transmit status information to at least one of the plurality of controllers
2 over the LAN via the network interface, wherein the status information
3 comprises an indication of a status of the synchrony group” (claim 17)

4 The foregoing phrases are not described in such a way that a person having
5 ordinary skill in the art at the time of the alleged invention would have understood
6 that the individuals named as the inventors on the face of the '258 patent were in
7 possession of the claimed subject matter, at least to the extent the claims are
8 interpreted consistently with the positions taken in Plaintiff's infringement
9 contentions. Furthermore, to the extent the claims are interpreted consistently the
10 positions taken in Plaintiff's infringement contentions, the '258 patent fails to teach
11 a person of ordinary skill in the art how to make and use the full scope of the
12 claimed invention without undue experimentation with respect to foregoing phrases.
13 To the extent the claims are construed or interpreted to be as broad as the positions
14 taken in Plaintiff's infringement contentions, the '258 patent does not provide
15 adequate written description or enable the full scope of the claim limitations listed
16 above.

17 (g) **'715 Patent**

18 Asserted claims 7, 9, 11, 13, 15, and 17 of the '715 patent fail to satisfy the
19 requirements of 35 U.S.C. § 112 at least because the '715 patent fails to provide an
20 adequate written description or enablement of the following limitations, at least as
21 those limitations are applied by Sonos in its infringement contentions:

- 22 • “wherein in the master device role, the first zone player is configured to
23 control synchronous playback of information content by both the first
24 zone player and the second zone player in response to playback
25 commands received from a controller device via a network interface of
26 the first zone player” (claim 7)
- 27 • “while performing the master device role, evaluating one or more
28 operational performance metrics of the one or more processors or the at

1 least one network interface indicating potential degradation in
2 performance of synchronous playback of information content by both the
3 first and second zone player, and based on the evaluation, determining
4 that the second zone player should perform the master device role for the
5 synchrony group” (claims 7, 13)

- 6 • “in response to determining that the second zone player should perform
7 the master device role for the synchrony group, initiating migration of
8 the master device role from the first zone player to the second zone
9 player” (claims 7, 13)
- 10 • “after migration of the master device role from the first zone player to
11 the second zone player, ceasing to perform the master device role for the
12 synchrony group, and playing back information content in synchrony
13 with the second zone player while the second zone player is performing
14 the master device role for the synchrony group” (claims 7, 13)
- 15 • “wherein the one or more operational performance metrics comprise a
16 network latency metric, and wherein while performing the master device
17 role, evaluating one or more operational performance metrics of the one
18 or more processors or the at least one network interface indicating
19 potential degradation in performance of synchronous playback of
20 information content by both the first and second zone player comprises
21 the first zone player determining that migrating the master device role
22 from the first zone player to the second zone player would improve
23 latency of message transmission within the synchrony group” (claims 9,
24 15)

25 The foregoing phrases are not described in such a way that a person having
26 ordinary skill in the art at the time of the alleged invention would have understood
27 that the individuals named as the inventors on the face of the '715 patent were in
28 possession of the claimed subject matter, at least to the extent the claims are

1 interpreted consistently with the positions taken in Plaintiff’s infringement
2 contentions. Furthermore, to the extent the claims are interpreted consistently the
3 positions taken in Plaintiff’s infringement contentions, the ’715 patent fails to teach
4 a person of ordinary skill in the art how to make and use the full scope of the
5 claimed invention without undue experimentation with respect to foregoing phrases.
6 To the extent the claims are construed or interpreted to be as broad as the positions
7 taken in Plaintiff’s infringement contentions, the ’715 patent does not provide
8 adequate written description or enable the full scope of the claim limitations listed
9 above.

10 (h) **’001 Patent**

11 Asserted claims 12-14, 17-25, and 28-33 of the ’001 patent fail to satisfy the
12 requirements of 35 U.S.C. § 112 at least because the ’001 patent fails to provide an
13 adequate written description or enablement of the following limitations, at least as
14 those limitations are applied by Sonos in its infringement contentions:

- 15 • “a network interface that is configured to communicatively couple the
16 first zone player to at least one data network” (claim 12)
- 17 • “receiving, via the network interface, a request to engage in synchronous
18 playback of audio content as part of a synchrony group that includes at
19 least a second zone player that is communicatively coupled to the first
20 zone player via the at least one data network” (claim 12)
- 21 • “detecting an indication that the first zone player is to operate in (a) one
22 of a control-master mode or a control-slave mode for the synchrony
23 group and (b) one of an audio-master mode or an audio-slave mode for
24 the synchrony group; and beginning to operate in the synchrony group
25 in accordance with the indication” (claims 12, 23)
- 26 • “wherein, while operating in the control-master mode for the synchrony
27 group, the first zone player is configured to: receive, via the network
28 interface, first control information for the synchrony group from a

1 network device that is communicatively coupled to the first zone player;
2 and based on the first control information, cause, via the network
3 interface, at least one playback action to be applied in the synchrony
4 group” (claims 12, 23)

5 • “wherein, while operating in the control-slave mode for the synchrony
6 group, the first zone player is configured to: receive, via the network
7 interface, second control information from another zone player; and
8 perform one or more playback actions in accordance with the second
9 control information” (claims 12, 23)

10 • “wherein, while operating in the audio-master mode for the synchrony
11 group, the first zone player is configured to: obtain audio information
12 that is representative of the audio content; generate playback timing
13 information associated with the obtained audio information that is
14 indicative of at least one future time that is relative to a reference clock
15 time and denotes a time at which at least the first and second zone players
16 are to engage in synchronous playback of a corresponding portion of the
17 obtained audio information; and transmit, via the network interface, the
18 obtained audio information and the generated playback timing
19 information to the second zone player” (claim 12)

20 • “wherein, while operating in the audio-slave mode for the synchrony
21 group, the first zone player is configured to: receive, via the network
22 interface, audio information and playback timing information associated
23 with the received audio information from another zone player; and
24 engage in synchronous playback of the received audio information with
25 at least the second zone player based on the received playback timing
26 information associated with the received audio information while a local
27 clock time of the first zone player differs from a local clock time of the
28 second zone player” (claims 12, 23)

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- “wherein detecting an indication that the first zone player is to operate in (a) one of a control-master mode or a control-slave mode for the synchrony group and (b) one of an audio-master mode or an audio-slave mode for the synchrony group comprises detecting an indication that the first zone player is to operate in (a) the control-master mode for the synchrony group and (b) the audio-master mode for the synchrony group” (claims 13, 24)
- “wherein the playback timing further comprises a future time relative to the reference clock time that denotes a time at which at least the first and second zone players are to initiate synchronous playback at the beginning of the obtained audio information” (claims 14, 25)
- “wherein beginning to operate in the synchrony group in accordance with the indication comprises either (a) transitioning from operating in the audio-master mode to operating in the audio-slave mode or (b) transitioning from operating in the audio-slave mode to operating in the audio-master mode” (claims 17, 28)
- “wherein the first control information identifies particular audio content to be played back by the synchrony group that is available at an audio source outside of the at least one data network, and wherein causing the at least one playback action to be applied in the synchrony group comprises causing a zone player operating in the audio-master mode to obtain audio information that is representative of the particular audio content” (claims 18, 29)
- “wherein the at least one future time relative to the reference clock time comprise at least one first future time that is determined based on a local clock of a zone player other than the first zone player” (claim 19)

- 1 • “wherein at least one future time relative to the reference clock time
2 comprises at least one first future time that is determined based a local
3 clock of the first zone player” (claim 20)
- 4 • “wherein the playback timing information that is received while
5 operating in the audio-slave mode comprises at least one future time at
6 which at least the first and second zone players are to engage in
7 synchronous playback of a corresponding portion of the received audio
8 information, and wherein being configured while operating in the audio-
9 slave mode to engage in synchronous playback of the received audio
10 information with at least the second zone player comprises being
11 configured to: update the at least one future time to account for a
12 differential between the local clock time of the first zone player and a
13 local clock time of another zone player; and when the local clock time
14 of the first zone player reaches the updated at least one future time,
15 engage in synchronous playback of the corresponding portion of the
16 received audio information with at least the second zone player” (claim
17 22)
- 18 • “receiving, via a network interface at the first zone player, a request to
19 engage in synchronous playback of audio content as part of a synchrony
20 group that includes at least a second zone player that is communicatively
21 coupled to the first zone player via at least one data network” (claim 23)
- 22 • “wherein, while operating in the audio-master mode for the synchrony
23 group, the first zone player is configured to: obtain audio information
24 that is representative of the audio content; generate playback timing
25 information associated with the obtained audio information that is
26 indicative of one or more future times relative to a reference clock time,
27 wherein an individual future time denotes a time at which at least the
28 first and second zone players are to engage in synchronous playback of

1 a corresponding portion of the obtained audio information; and transmit,
2 via the network interface, the obtained audio information and the
3 generated playback timing information to the second zone player” (claim
4 23)

- 5 • “wherein an individual future time relative to the reference clock time
6 comprise at least one first future time that is determined based on a local
7 clock of a zone player other than the first zone player” (claim 30)
- 8 • “wherein the at least one an individual future time relative to the
9 reference clock time comprise at least one first future time that is
10 determined based on a local clock of the first zone player” (claim 31)
- 11 • “wherein the playback timing information that is received while
12 operating in the audio-slave mode comprises at least one future time at
13 which at least the first and second zone players are to engage in
14 synchronous playback of a corresponding portion of the received audio
15 information, and wherein operating in the audio-slave mode to engage in
16 synchronous playback of the received audio information with at least the
17 second zone player comprises: updating the at least one future time to
18 account for a differential between the local clock time of the first zone
19 player and a local clock time of another zone player; and when the local
20 clock time of the first zone player reaches the updated at least one future
21 time, engaging in synchronous playback of the corresponding portion of
22 the received audio information with at least the second zone player”
23 (claim 33)

24 The foregoing phrases are not described in such a way that a person having
25 ordinary skill in the art at the time of the alleged invention would have understood
26 that the individuals named as the inventors on the face of the '001 patent were in
27 possession of the claimed subject matter, at least to the extent the claims are
28 interpreted consistently with the positions taken in Plaintiff’s infringement

1 contentions. Furthermore, to the extent the claims are interpreted consistently the
2 positions taken in Plaintiff’s infringement contentions, the ’001 patent fails to teach
3 a person of ordinary skill in the art how to make and use the full scope of the
4 claimed invention without undue experimentation with respect to foregoing phrases.
5 To the extent the claims are construed or interpreted to be as broad as the positions
6 taken in Plaintiff’s infringement contentions, the ’001 patent does not provide
7 adequate written description or enable the full scope of the claim limitations listed
8 above.

9 (i) **’896 Patent**

10 Asserted claims 1, 5, 6, 8, 9, 12, 13, 15, 17, and 18 of the ’896 patent fail to
11 satisfy the requirements of 35 U.S.C. § 112 at least because the ’896 patent fails to
12 provide an adequate written description or enablement of the following limitations,
13 at least as those limitations are applied by Sonos in its infringement contentions:

- 14 • “a secure wireless local area network (WLAN) that is defined by an
15 access point,” “the secure WLAN that is defined by the access point,”
16 and “the initial communication path with the given playback device does
17 not traverse the access point” (claims 1, 13);
- 18 • “before transmitting the second message containing the network
19 configuration parameters, obtaining the network configuration
20 parameters” (claims 8, 17);
- 21 • “wherein obtaining the network configuration parameters comprises
22 retrieving the current network configuration parameters of the
23 computing device” (claims 9, 18); and
- 24 • “transmitting a command to the given playback device to form a group
25 with at least a first playback device of a networked audio system such
26 that the given playback device is configured to play back audio content
27 in synchrony with at least the first playback device” (claim 12).

1 device that is installed with an application for controlling the playback
2 device” (claims 1, 14);

- 3 • “the triggering event comprises one of (a) powering on the playback
4 device or (b) receiving user input via a physical interface of the playback
5 device.” (claims 2, 15);
- 6 • “receiving, from the computing device, a command to assign a name to
7 the playback device” (claim 9);
- 8 • “receiving a command related to playback of audio content” (claim 10);
- 9 • “the command comprises a command to retrieve audio content for
10 playback from an audio source that is accessible via a communication
11 path that includes the secure WLAN, and wherein the playback device
12 further comprises program instructions stored on the non-transitory
13 computer-readable medium that, when executed by the at least one
14 processor, cause the playback device to perform functions comprising:
15 in response to receiving the command, retrieving the audio content from
16 the audio source via the communication path that includes the secure
17 WLAN” (claims 11, 19); and
- 18 • “a command to form a group with at least a first playback device of a
19 networked audio system such that the playback device is configured to
20 play back audio content in synchrony with at least the first playback
21 device” (claim 13).

22 The foregoing phrases are not described in such a way that a person having
23 ordinary skill in the art at the time of the alleged invention would have understood
24 that the individuals named as the inventors on the face of the ’883 patent were in
25 possession of the claimed subject matter, at least to the extent the claims are
26 interpreted consistently with the positions taken in Plaintiff’s infringement
27 contentions. Furthermore, to the extent the claims are interpreted consistently the
28 positions taken in Plaintiff’s infringement contentions, the ’883 patent fails to teach

1 a person of ordinary skill in the art how to make and use the full scope of the
2 claimed invention without undue experimentation with respect to foregoing phrases.
3 To the extent the claims are construed or interpreted to be as broad as the positions
4 taken in Plaintiff's infringement contentions, the '883 patent does not provide
5 adequate written description or enable the full scope of the claim limitations listed
6 above.

7 **2. Indefiniteness**

8 One or more terms of the Asserted Claims may suffer from defects that render
9 them indefinite, as those claims are applied by Sonos to the accused products in
10 Sonos' Infringement Contentions. A more detailed basis for Google's indefiniteness
11 defenses may be set forth in any expert report(s) on invalidity to be served by
12 Google in accordance with the Court's Scheduling Order and/or at an appropriate
13 later stage of this lawsuit, such as claim construction. To the extent that Google has
14 identified any instance of a term or limitation in a particular claim as rendering the
15 claim invalid as indefinite, Google contends that every instance of the challenged
16 term or limitation in each Asserted Claim renders the claim invalid for the same
17 reason.

18 **(a) '949 Patent**

19 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
20 '949 patent may suffer from defects that render them indefinite, at least under
21 interpretations and/or applications of the claim language that Sonos appears to be
22 asserting, including, for example:

- 23 • "the player group for synchronized playback of a multimedia output
24 from the same multimedia source" (claim 1)
- 25 • "each of the players in the player group to adjust its respective volume"
26 (claims 1 and 8)
- 27 • "the volumes of each of the players in the player group should be
28 adjusted in scale" (claims 4 and 11)

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(b) '014 Patent

One or more Asserted Claims, and/or terms of the Asserted Claims, of the '014 patent may suffer from defects that render them indefinite, at least under interpretations and/or applications of the claim language that Sonos appears to be asserting, including, for example:

- “displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group” (claim 25)
- “wherein any one of the players in the group server as a zone group head” (claim 25)
- “synchronizing all players in the zone group in accordance with the zone group head ” (claim 25)
- “adjusting a volume meter represented by an averaged value of audio volumes of the [p]layers in the group” (claims 25, 38)
- “adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user” (claim 25)
- “presenting the zone group in a manner that indicates a grouping” (claim 32)
- “selecting the zone group to be de-grouped from the first list” (claim 35)
- “another list showing all the players within the zone group to be de-grouped” (claim 35)
- “selecting one or more players from the another list” (claim 35)
- “disassociating the selected players from the zone group” (claim 35)
- “adjusting of the one of the volume meters includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user” (claim 38)

- 1 • “maintaining relative volume loudness difference among each of the
2 players in the group” (claim 42)

3 (c) **'959 Patent**

4 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
5 '959 patent may suffer from defects that render them indefinite, at least under
6 interpretations and/or applications of the claim language that Sonos appears to be
7 asserting, including, for example:

- 8 • “process the audio data” (claims 5 and 29)
9 • “determine that a type of pairing ” (claim 5)
10 • “the first type of pairing, the playback device is configured to output
11 audio comprising two channel sound via the plurality of speaker drivers”
12 (claim 5)
13 • “in the second type of pairing, the playback device is configured to
14 output audio comprising no more than one channel of the two channel
15 sound via the plurality of speaker drivers” (claim 5)
16 • “configure the playback device to perform a first equalization of the
17 audio data” (claim 5)
18 • “configure the playback device to perform a second equalization of the
19 audio” (claim 5)
20 • “the signal comprises an instruction for the playback device to pair with
21 one or more playback devices”/“an instruction for the playback device
22 to pair with one or more playback devices” (claims 10 and 29)

23 (d) **'025 Patent**

24 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
25 '025 patent may suffer from defects that render them indefinite, at least under
26 interpretations and/or applications of the claim language that Sonos appears to be
27 asserting, including, for example:

- 28 • “receive a signal from a controller over the network” (claim 1)

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- “the signal comprises an instruction for the playback device to become paired with one or more other playback devices such that, after pairing, the playback device and the one or more other playback devices have different playback roles” (claims 1, 18)
- “determine that either (a) the playback device is not paired with the one or more other playback devices ” (claims 1 and 18)
- “configure the playback device to perform a first processing of the audio data so as to output two-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is not paired with the one or more other playback devices” (claim 1 and 18)
- “determine . . . (b) that the playback device is paired with the one or more other playback devices such that the playback device and the one or more other playback devices have the different playback roles” (claim 1)
- “configuring the playback device to perform a second processing of the audio data so as to output one-channel audio based on the audio data from the one or more speaker drivers after the playback device has determined it is paired with the one or more other playback devices” (claim 1)
- “separate the audio data into separate audio channels” (claims 10, 12)
- “output audio based on audio data of at least one separate audio channel from the one or more speaker drivers” (claims 10 and 12)
- “the playback device is further configured to receive another signal from the controller over the network, wherein the other signal comprises an instruction for the playback device to separate the pair with the one or more other playback devices” (claim 13)

- 1 • “Configuring the playback device to perform a second processing of the
2 audio data so as to output one-channel audio based on the audio data
3 from the one or more speaker drivers” (claim 18)

4 (e) **'953 Patent**

5 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
6 '953 patent may suffer from defects that render them indefinite, at least under
7 interpretations and/or applications of the claim language that Sonos appears to be
8 asserting, including, for example:

- 9 • “receiving a request to enter into a synchrony group with at least a second
10 zone player that is communicatively coupled with the first zone player
11 over a local area network (LAN)” (claims 7, 25)
- 12 • “receiving, from the second zone player over the LAN, clock timing
13 information that comprises at least one reading of the clock time of the
14 second zone player” (claims 7, 25)
- 15 • “receiving, from the second zone player over the LAN, (a) audio
16 information for at least a first audio track and (b) playback timing
17 information associated with the audio information for the first audio
18 track that comprises an indicator of a first future time, relative to the
19 clock time of the second zone player, at which the first and second zone
20 players are to initiate synchronous playback of the audio information for
21 the first audio track” (claims 7, 25)
- 22 • “receiving the request to enter into the synchrony group with at least the
23 second zone player over the LAN from one or both of (a) a controller
24 device that is communicatively coupled to the first zone player over the
25 LAN and (b) the second zone player” (claim 8)
- 26 • “wherein receiving the audio information for the first audio track from
27 the second zone player over the LAN comprises: receiving a series of
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1 frames that each include a respective portion of the obtained audio
2 information for the first audio track” (claim 12)

- 3 • “wherein a first frame in the series of frames includes the indicator of the
4 first future time” (claim 13)
- 5 • “an indicator of a respective future time, relative to the clock time of the
6 second zone player, at which the frame is to be synchronously played
7 back by the first and second zone players” (claim 14)
- 8 • “after determining the initial differential between the clock time of the
9 first zone player and the clock time of the second zone player, receiving,
10 from the second zone player over the LAN, updated clock timing
11 information that includes at least one updated reading of the clock time
12 of the second zone player; and based on the updated timing information,
13 determining an updated differential between the clock time of the first
14 zone player and the clock time of the second zone player” (claims 18,
15 28)
- 16 • “receiving, from the second zone player over the LAN, a command to
17 adjust an individual volume of the first zone player; and in response to
18 receiving the command, adjusting the individual volume of the first zone
19 player” (claims 22, 29)
- 20 • “while operating as the slave of the synchrony group, receiving, from the
21 second zone player over the LAN, control information that enables the
22 first zone player to begin operating as the master of the synchrony group;
23 and in response to receiving the control information, transitioning from
24 operating as the slave of the synchrony group to operating as the master
25 of the synchrony group” (claims 23, 30)

26 (f) **'258 Patent**

27 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
28 '258 patent may suffer from defects that render them indefinite, at least under

1 interpretations and/or applications of the claim language that Sonos appears to be
2 asserting, including, for example:

- 3 • “a network interface configured to interface the first zone player with at
4 least a local area network (LAN)” (claim 17)
- 5 • “receive control information from any one of a plurality of controllers
6 over the LAN via the network interface, wherein the received control
7 information comprises a direction for the first zone player to enter into a
8 synchrony group with at least a second zone player” (claim 17)
- 9 • “transmit status information to at least one of the plurality of controllers
10 over the LAN via the network interface, wherein the status information
11 comprises an indication of a status of the synchrony group” (claim 17)

12 (g) **'715 Patent**

13 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
14 '715 patent may suffer from defects that render them indefinite, at least under
15 interpretations and/or applications of the claim language that Sonos appears to be
16 asserting, including, for example:

- 17 • “wherein in the master device role, the first zone player is configured to
18 control synchronous playback of information content by both the first
19 zone player and the second zone player in response to playback
20 commands received from a controller device via a network interface of
21 the first zone player” (claim 7)
- 22 • “while performing the master device role, evaluating one or more
23 operational performance metrics of the one or more processors or the at
24 least one network interface indicating potential degradation in
25 performance of synchronous playback of information content by both the
26 first and second zone player, and based on the evaluation, determining
27 that the second zone player should perform the master device role for the
28 synchrony group” (claims 7, 13)

1 least a second zone player that is communicatively coupled to the first
2 zone player via the at least one data network” (claim 12)

- 3 • “detecting an indication that the first zone player is to operate in (a) one
4 of a control-master mode or a control-slave mode for the synchrony
5 group and (b) one of an audio-master mode or an audio-slave mode for
6 the synchrony group; and beginning to operate in the synchrony group
7 in accordance with the indication” (claims 12, 23)
- 8 • “wherein, while operating in the control-master mode for the synchrony
9 group, the first zone player is configured to: receive, via the network
10 interface, first control information for the synchrony group from a
11 network device that is communicatively coupled to the first zone player;
12 and based on the first control information, cause, via the network
13 interface, at least one playback action to be applied in the synchrony
14 group” (claims 12, 23)
- 15 • “wherein, while operating in the control-slave mode for the synchrony
16 group, the first zone player is configured to: receive, via the network
17 interface, second control information from another zone player; and
18 perform one or more playback actions in accordance with the second
19 control information” (claims 12, 23)
- 20 • “wherein, while operating in the audio-master mode for the synchrony
21 group, the first zone player is configured to: obtain audio information
22 that is representative of the audio content; generate playback timing
23 information associated with the obtained audio information that is
24 indicative of at least one future time that is relative to a reference clock
25 time and denotes a time at which at least the first and second zone players
26 are to engage in synchronous playback of a corresponding portion of the
27 obtained audio information; and transmit, via the network interface, the
28

1 obtained audio information and the generated playback timing
2 information to the second zone player” (claim 12)

- 3 • “wherein, while operating in the audio-slave mode for the synchrony
4 group, the first zone player is configured to: receive, via the network
5 interface, audio information and playback timing information associated
6 with the received audio information from another zone player; and
7 engage in synchronous playback of the received audio information with
8 at least the second zone player based on the received playback timing
9 information associated with the received audio information while a local
10 clock time of the first zone player differs from a local clock time of the
11 second zone player” (claims 12, 23)
- 12 • “wherein detecting an indication that the first zone player is to operate in
13 (a) one of a control-master mode or a control-slave mode for the
14 synchrony group and (b) one of an audio-master mode or an audio-slave
15 mode for the synchrony group comprises detecting an indication that the
16 first zone player is to operate in (a) the control-master mode for the
17 synchrony group and (b) the audio-master mode for the synchrony
18 group” (claims 13, 24)
- 19 • “wherein the playback timing further comprises a future time relative to
20 the reference clock time that denotes a time at which at least the first and
21 second zone players are to initiate synchronous playback at the
22 beginning of the obtained audio information” (claims 14, 25)
- 23 • “wherein beginning to operate in the synchrony group in accordance
24 with the indication comprises either (a) transitioning from operating in
25 the audio-master mode to operating in the audio-slave mode or (b)
26 transitioning from operating in the audio-slave mode to operating in the
27 audio-master mode” (claims 17, 28)

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- “wherein the first control information identifies particular audio content to be played back by the synchrony group that is available at an audio source outside of the at least one data network, and wherein causing the at least one playback action to be applied in the synchrony group comprises causing a zone player operating in the audio-master mode to obtain audio information that is representative of the particular audio content” (claims 18, 29)
- “wherein the at least one future time relative to the reference clock time comprise at least one first future time that is determined based on a local clock of a zone player other than the first zone player” (claim 19)
- “wherein at least one future time relative to the reference clock time comprises at least one first future time that is determined based a local clock of the first zone player” (claim 20)
- “wherein the playback timing information that is received while operating in the audio-slave mode comprises at least one future time at which at least the first and second zone players are to engage in synchronous playback of a corresponding portion of the received audio information, and wherein being configured while operating in the audio-slave mode to engage in synchronous playback of the received audio information with at least the second zone player comprises being configured to: update the at least one future time to account for a differential between the local clock time of the first zone player and a local clock time of another zone player; and when the local clock time of the first zone player reaches the updated at least one future time, engage in synchronous playback of the corresponding portion of the received audio information with at least the second zone player” (claim 22)

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- “receiving, via a network interface at the first zone player, a request to engage in synchronous playback of audio content as part of a synchrony group that includes at least a second zone player that is communicatively coupled to the first zone player via at least one data network” (claim 23)
- “wherein, while operating in the audio-master mode for the synchrony group, the first zone player is configured to: obtain audio information that is representative of the audio content; generate playback timing information associated with the obtained audio information that is indicative of one or more future times relative to a reference clock time, wherein an individual future time denotes a time at which at least the first and second zone players are to engage in synchronous playback of a corresponding portion of the obtained audio information; and transmit, via the network interface, the obtained audio information and the generated playback timing information to the second zone player” (claim 23)
- “wherein an individual future time relative to the reference clock time comprise at least one first future time that is determined based on a local clock of a zone player other than the first zone player” (claim 30)
- “wherein the at least one an individual future time relative to the reference clock time comprise at least one first future time that is determined based on a local clock of the first zone player” (claim 31)
- “wherein the playback timing information that is received while operating in the audio-slave mode comprises at least one future time at which at least the first and second zone players are to engage in synchronous playback of a corresponding portion of the received audio information, and wherein operating in the audio-slave mode to engage in synchronous playback of the received audio information with at least the second zone player comprises: updating the at least one future time to

1 account for a differential between the local clock time of the first zone
2 player and a local clock time of another zone player; and when the local
3 clock time of the first zone player reaches the updated at least one future
4 time, engaging in synchronous playback of the corresponding portion of
5 the received audio information with at least the second zone player”
6 (claim 33)

7 (i) **'896 Patent**

8 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
9 '896 patent may suffer from defects that render them indefinite, at least under
10 interpretations and/or applications of the claim language that Sonos appears to be
11 asserting, including, for example:

- 12 • “receiving, via a graphical user interface (GUI) associated
13 with an application for controlling one or more playback devices, user
14 input indicating that a user wishes to set up a playback device to operate
15 on the secure WLAN” (claims 1, 13);
- 16 • “transmitting a command to the given playback device related to
17 playback of audio content” (claims 5);
- 18 • “a command to retrieve audio content for playback from an audio source
19 that is accessible via a communication path that includes the secure
20 WLAN” (claims 6);
- 21 • “before transmitting the second message containing the network
22 configuration parameters, obtaining the network configuration
23 parameters” (claims 8, 17);
- 24 • “retrieving the current network configuration parameters of the
25 computing device” (claims 9, 18);
- 26 • “transmitting a command to the given playback device to form a group
27 with at least a first playback device of a networked audio system such
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1 that the given playback device is configured to play back audio content
2 in synchrony with at least the first playback device” (claim 12); and

- 3 • “transmitting a command to retrieve audio content for playback
4 from an audio source that is accessible via a communication path that
5 includes the secure WLAN” (claim 15)

6 (j) **’883 Patent**

7 One or more Asserted Claims, and/or terms of the Asserted Claims, of the
8 ’883 patent may suffer from defects that render them indefinite, at least under
9 interpretations and/or applications of the claim language that Sonos appears to be
10 asserting, including, for example:

- 11 • “detecting a triggering event that causes the playback device to enter a
12 setup mode in which the playback device transmits at least a first
13 message indicating that the playback device is available for setup”
14 (claims 1, 14);
- 15 • “while in the setup mode, receiving a response to the first message that
16 facilitates establishing an initial communication path with a computing
17 device that is installed with an application for controlling the playback
18 device” (claims 1, 14);
- 19 • “the triggering event comprises one of (a) powering on the playback
20 device or (b) receiving user input via a physical interface of the playback
21 device.” (claims 2, 15)
- 22 • “receiving, from the computing device, a command to assign a name to
23 the playback device” (claim 9);
- 24 • “receiving a command related to playback of audio content” (claim 10);
- 25 • “the command comprises a command to retrieve audio content for
26 playback from an audio source that is accessible via a communication
27 path that includes the secure WLAN, and wherein the playback device
28 further comprises program instructions stored on the non-transitory

1 computer-readable medium that, when executed by the at least one
2 processor, cause the playback device to perform functions comprising:
3 in response to receiving the command, retrieving the audio content from
4 the audio source via the communication path that includes the secure
5 WLAN” (claims 11, 19);

- 6 • “The computing device of claim 1, further comprising...” and “cause the
7 computing device to perform functions comprising” (claim 13); and
- 8 • “a command to form a group with at least a first playback device of a
9 networked audio system such that the playback device is configured to
10 play back audio content in synchrony with at least the first playback
11 device” (claim 13).

12 **D. Invalidity Contentions Pursuant to S.P.R. 2.5.4 – 35 U.S.C. § 101**

13 In addition to the preceding invalidity contentions, Google further contends
14 that the Asserted Claims are drawn to subject matter that is not patentable under 35
15 U.S.C. § 101. To be patentable subject matter under § 101, a claim must be directed
16 to one of four eligible subject matter categories: “new and useful process, machine,
17 manufacture, or composition of matter.” 35 U.S.C. § 101. “Claims that fall within
18 one of the four subject matter categories may nevertheless be ineligible if they
19 encompass laws of nature, physical phenomena, or abstract ideas.” *Diamond v.*
20 *Chakrabarty*, 447 U.S. 303, 309 (1980). The Supreme Court established a two-step
21 test for deciding the subject matter eligibility of claims under § 101. *Alice Corp. Pty.*
22 *Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). First, the claims must be
23 analyzed to determine whether they are drawn to one of the statutory exceptions. *Id.*
24 Second, the elements of the claims must be viewed both individually and as an
25 ordered combination to see if there is an “inventive concept.” *Id.*

26 **1. ’949 Patent**

27 The asserted claims of the ’949 Patent are invalid under 35 U.S.C. § 101
28 because they are directed to non-patentable subject matter. The asserted claims are

1 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
2 lack utility and the alleged invention claimed does not constitute patentable subject
3 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
4 *Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
5 no elements of the asserted claims that transform the nature of the claim into a
6 patent-eligible application of the abstract idea or provide the necessary inventive
7 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
8 merely involve well-understood, routine, conventional activity and implementations
9 previously used by those in the field at the time of the alleged inventions of the
10 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
11 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
12 entail nothing of patentable significance, and they are therefore invalid for failure to
13 meet the requirements of 35 U.S.C. § 101.

14 Regarding *Alice* step one, the asserted claims are directed to the abstract idea
15 of a user interface for grouping together playback devices and adjusting their volume.
16 The alleged invention implements these abstract concepts using conventional
17 hardware and software, such as a controller with a user interface and a local area
18 network. The fact that the claimed invention describes a controller programmed with
19 software to perform the grouping and volume adjustment steps does not render the
20 claims non-abstract. It simply automates abstract processes that were performed
21 manually in existing audio systems.

22 Regarding *Alice* step two, whether in an individual limitation or the ordered
23 combination of the limitations, the asserted claims do not contain an “inventive
24 concept” that transforms the abstract idea into patent eligible claims. It is well-settled
25 that mere recitation of concrete, tangible components is insufficient to confer patent
26 eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent Litig.*, 823
27 F.3d 607, 613 (Fed. Cir. 2016). For example, claim 8 is directed to program
28 instructions to perform the steps of grouping and volume adjustments. Mere storage

1 of these programs in a generic non-transitory storage medium does not render the
2 claim patent eligible.

3 The ordered combination of claims does not contain inventive concepts either.
4 Furthermore, the Supreme Court has explained that “simply appending conventional
5 steps, specified at a high level of generality, to . . . abstract ideas cannot make those
6 . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
7 Ct. 1289, 1300 (2012). Here, the alleged invention does not provide an
8 improvement to existing hardware or software. It simply uses conventional
9 hardware and software components to implement the abstract concepts of grouping
10 and volume adjustment. The generic hardware and software recited in the claims—
11 e.g., a controller, user interface, and local area network—are not used in any
12 specialized way or improved by virtue of the claimed invention. As such, the claims
13 do not recite an “inventive concept” to overcome the abstract idea. *See*
14 *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341 (Fed. Cir. 2019).

15 2. '014 Patent

16 The asserted claims of the '014 Patent are invalid under 35 U.S.C. § 101
17 because they are directed to non-patentable subject matter. The asserted claims are
18 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
19 lack utility and the alleged invention claimed does not constitute patentable subject
20 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
21 *Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
22 no elements of the asserted claims that transform the nature of the claim into a
23 patent-eligible application of the abstract idea or provide the necessary inventive
24 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
25 merely involve well-understood, routine, conventional activity and implementations
26 previously used by those in the field at the time of the alleged inventions of the
27 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
28 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims

1 entail nothing of patentable significance, and they are therefore invalid for failure to
2 meet the requirements of 35 U.S.C. § 101.

3 Regarding *Alice* step one, claim the asserted claims is are directed towards the
4 abstract of idea of a user interface for grouping together playback devices and
5 adjusting their volume. The alleged invention implements these abstract concepts
6 using conventional hardware and software, such as a controller with a user interface
7 and a local area network. The fact that the claimed invention describes a controller
8 programmed with software to perform the grouping and volume adjustment steps
9 does not render the claims non-abstract. It simply automates abstract processes that
10 were performed manually in existing audio systems.

11 Regarding *Alice* step two, whether in an individual limitation or the ordered
12 combination of the limitations, the asserted claims do not contain an “inventive
13 concept” that transforms the abstract idea into patent eligible claims. It is well-
14 settled that mere recitation of concrete, tangible components is insufficient to confer
15 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
16 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). For example, claim 35 is directed to an
17 application module to perform the steps of grouping. Mere storage of this
18 application module in a generic memory does not render the claim patent eligible.
19 The ordered combination of claims does not contain inventive concepts either.
20 Furthermore, the Supreme Court has explained that “simply appending conventional
21 steps, specified at a high level of generality, to . . . abstract ideas cannot make those
22 . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
23 Ct. 1289, 1300 (2012). Here, the alleged invention does not provide an
24 improvement to existing hardware or software. It simply uses conventional
25 hardware and software components to implement the abstract concepts of grouping
26 and volume adjustment. The generic hardware and software recited in the claims—
27 e.g., a controller, user interface, and local area network—are not used in any
28 specialized way or improved by virtue of the claimed invention. As such, the claims

1 do not recite an “inventive concept” to overcome the abstract idea. *See*
2 *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341 (Fed. Cir. 2019).

3 3. '959 Patent

4 The asserted claims of the '959 Patent are invalid under 35 U.S.C. § 101
5 because they are directed to non-patentable subject matter. The asserted claims are
6 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
7 lack utility and the alleged invention claimed does not constitute patentable subject
8 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
9 *Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
10 no elements of the asserted claims that transform the nature of the claim into a
11 patent-eligible application of the abstract idea or provide the necessary inventive
12 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
13 merely involve well-understood, routine, conventional activity and implementations
14 previously used by those in the field at the time of the alleged inventions of the
15 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
16 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
17 entail nothing of patentable significance, and they are therefore invalid for failure to
18 meet the requirements of 35 U.S.C. § 101.

19 Regarding *Alice* step one, the asserted claims are directed towards the abstract
20 of idea of pairing two audio output devices and adjusting the equalization of audio
21 data. The alleged invention implements these abstract concepts using conventional
22 hardware and software, such as a network interface, speaker drivers, processors, and
23 memory. The fact that the claimed invention describes logic in a playback device to
24 determine whether it is in a paired arrangement and perform equalization of audio
25 data does not render the claims non-abstract. It simply automates abstract processes
26 that were performed manually in existing audio systems.

27 Regarding *Alice* step two, whether in an individual limitation or the ordered
28 combination of the limitations, the asserted claims do not contain an “inventive

1 concept” that transforms the abstract idea into patent eligible claims. It is well-
2 settled that mere recitation of concrete, tangible components is insufficient to confer
3 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
4 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). For example, claim 29 is directed to a
5 signal to perform the steps of pairing. Merely transmitting this signal does not
6 render the claim patent eligible.

7 The ordered combination of claims does not contain inventive concepts either.
8 Furthermore, the Supreme Court has explained that “simply appending conventional
9 steps, specified at a high level of generality, to . . . abstract ideas cannot make those
10 . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
11 Ct. 1289, 1300 (2012). Here, the alleged invention does not provide an
12 improvement to existing hardware or software. It simply uses conventional
13 hardware and software components to implement the abstract concepts of pairing
14 and equalization. The generic hardware and software recited in the claims—e.g., a
15 network interface, speaker drivers, processors, and memory—are not used in any
16 specialized way or improved by virtue of the claimed invention. As such, the claims
17 are directed to the abstract idea of wireless transmission and output of audio data
18 and do not recite an “inventive concept” to overcome the abstract idea. *See, e.g.*,
19 *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341 (Fed. Cir. 2019).

20 4. ’025 Patent

21 The asserted claims of the ’025 Patent are invalid under 35 U.S.C. § 101
22 because they are directed to non-patentable subject matter. The asserted claims are
23 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
24 lack utility and the alleged invention claimed does not constitute patentable subject
25 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
26 *Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
27 no elements of the asserted claims that transform the nature of the claim into a
28 patent-eligible application of the abstract idea or provide the necessary inventive

1 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
2 merely involve well-understood, routine, conventional activity and implementations
3 previously used by those in the field at the time of the alleged inventions of the
4 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
5 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
6 entail nothing of patentable significance, and they are therefore invalid for failure to
7 meet the requirements of 35 U.S.C. § 101.

8 Regarding *Alice* step one, the asserted claims are directed towards the abstract
9 of idea of pairing two audio output devices and adjusting the equalization of audio
10 data. The alleged invention implements these abstract concepts using conventional
11 hardware and software, such as a network interface, speaker drivers, processors, and
12 memory. The fact that the claimed invention describes logic in a playback device to
13 determine whether it is in a paired arrangement and process audio data does not
14 render the claims non-abstract.

15 Regarding *Alice* step two, whether in an individual limitation or the ordered
16 combination of the limitations, the asserted claims do not contain an “inventive
17 concept” that transforms the abstract idea into patent eligible claims. It is well-
18 settled that mere recitation of concrete, tangible components is insufficient to confer
19 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
20 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). For example, claim 18 is directed to
21 program instructions to perform the steps of determining whether it is in a paired
22 arrangement and process audio data. Merely storing these programs in a computer
23 readable memory does not render the claim patent eligible.

24 The ordered combination of claims does not contain inventive concepts either.
25 Furthermore, the Supreme Court has explained that “simply appending conventional
26 steps, specified at a high level of generality, to . . . abstract ideas cannot make those
27 . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
28 Ct. 1289, 1300 (2012). Here, the alleged invention does not provide an

1 improvement to existing hardware or software. It simply uses conventional
2 hardware and software components to implement the abstract concepts of pairing
3 and equalization. The generic hardware and software recited in the claims—e.g., a
4 network interface, speaker drivers, processors, and memory—are not used in any
5 specialized way or improved by virtue of the claimed invention. As such, the claims
6 are directed to the abstract idea of wireless transmission and output of audio data
7 and do not recite an “inventive concept” to overcome the abstract idea. *See, e.g.,*
8 *Chamberlain Grp., Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341 (Fed. Cir. 2019).

9 **5. ’953 Patent**

10 The asserted claims of the ’953 Patent are invalid under 35 U.S.C. § 101
11 because they are directed to non-patentable subject matter. The asserted claims are
12 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
13 lack utility and the alleged invention claimed does not constitute patentable subject
14 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
15 *Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
16 no elements of the asserted claims that transform the nature of the claim into a
17 patent-eligible application of the abstract idea or provide the necessary inventive
18 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
19 merely involve well-understood, routine, conventional activity and implementations
20 previously used by those in the field at the time of the alleged inventions of the
21 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
22 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
23 entail nothing of patentable significance, and they are therefore invalid for failure to
24 meet the requirements of 35 U.S.C. § 101.

25 Regarding *Alice* step one, asserted claims 7, 8, 12-14, 18, 22-25, and 28-30
26 are directed towards the abstract of idea of synchronizing a group of zone players
27 (*i.e.*, speakers). This abstract idea is confirmed by Sonos’ reliance on the same
28 evidence alleging infringement for accused products. Sonos does not identify any

1 specific way of syncing speakers and instead merely identifies the fact that the
2 speakers are synchronized to allege infringement of the claims.

3 The specification confirms that the claims are directed to the abstract idea of
4 synchronizing a group of zone players. The specification states that “the present
5 invention relates generally to the field of digital data processing devices, and more
6 particularly to systems and methods for synchronizing operations among a plurality
7 of independently-clocked digital data processing devices.” ’953 patent at 1:30-34. It
8 also states “the invention relates to the field of arrangements that synchronize output
9 generated by a number of output generators, including audio output, video output,
10 combinations of audio and video, as well as other types of output as will be
11 appreciated by those skilled in the art, provide by a common channel.” *Id.* at 1:41-
12 46. This focus confirms that the focus of the alleged invention was merely
13 synchronizing independent devices that have independent clocks. *See ChargePoint,*
14 *Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 765-66 (Fed. Cir. 2019) (explaining that
15 the step one inquiry “as looking at the ‘focus’ of the claims” and the specification
16 may illuminate the true focus.”).

17 As recited in the claims, the concept of synchronizing a group of zone players
18 with independent clocks without more is an abstract idea. For example, independent
19 claim 7 attempts to add additional limitations such as communicating over a LAN, a
20 processor and a synchrony group. These limitations all relate to the main portion of
21 the claim which describes synchronizing the electronic devices.

22 Regarding *Alice* step two, whether in an individual limitation or the ordered
23 combination of the limitations, the asserted claims do not contain an “inventive
24 concept” that transforms the abstract idea into patent eligible claims. It is well-
25 settled that mere recitation of concrete, tangible components is insufficient to confer
26 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
27 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). The ordered combination of claims does
28 not contain inventive concepts either. Furthermore, the Supreme Court has

1 explained that “simply appending conventional steps, specified at a high level of
2 generality, to . . . abstract ideas cannot make those . . . ideas patentable.” *Mayo*
3 *Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012). The
4 issues apply to asserted claims 7, 8, 12-14, 18, 22-25, and 28-30. Here, for example,
5 all of the limitations in claim 7 merely instruct the practitioner how to implement
6 synchronization with two devices. Moreover, the hardware limitations (LAN,
7 Processor, and memory) do not rectify the issues with the claims. These limitations
8 are well known and conventional and routinely appear in prior art, such as that
9 identified by Google. Finally, the transfer of information between zone players for
10 synchronization is not an inventive concept—such limitations merely involve the
11 transfer of information regarding a zone player’s clock and the audio to be played. It
12 is well known and conventional that, to sync multiple speakers, information needs to
13 be shared amongst those speakers. The dependent claims also add nothing but
14 conventional additional limitations. For example, claims 12-14 merely describe
15 content that is typically exchanged between the zone players, claim 22 describes
16 changing the volume of the players, and claims 23-24 describe operations of devices
17 as slaves and masters to the group.

18 **6. ’258 Patent**

19 The asserted claims of the ’258 Patent are invalid under 35 U.S.C. § 101
20 because they are directed to non-patentable subject matter. The asserted claims are
21 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
22 lack utility and the alleged invention claimed does not constitute patentable subject
23 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
24 *Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
25 no elements of the asserted claims that transform the nature of the claim into a
26 patent-eligible application of the abstract idea or provide the necessary inventive
27 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
28 merely involve well-understood, routine, conventional activity and implementations

1 previously used by those in the field at the time of the alleged inventions of the
2 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
3 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
4 entail nothing of patentable significance, and they are therefore invalid for failure to
5 meet the requirements of 35 U.S.C. § 101.

6 Regarding *Alice* step one, asserted claims 17, 21-24, and 26 are directed to the
7 patent-ineligible abstract idea of synchronizing a group of zone players (*i.e.*,
8 speakers) with independent clocks. This abstract idea is confirmed by Sonos’
9 reliance on the same evidence alleging infringement for accused products. Sonos
10 does not identify any specific way of syncing speakers and instead merely identifies
11 the fact that the speakers are synchronized to allege infringement of the claims.

12 The specification confirms that the claims are directed to the abstract idea of
13 synchronizing a group of zone players. The specification states that “the present
14 invention relates generally to the field of digital data processing devices, and more
15 particularly to systems and methods for synchronizing operations among a plurality
16 of independently-clocked digital data processing devices.” ’258 patent at 1:33-36. It
17 also states “the invention relates to the field of arrangements that synchronize output
18 generated by a number of output generators, including audio output, video output,
19 combinations of audio and video, as well as other types of output as will be
20 appreciated by those skilled in the art, provide by a common channel.” *Id.* at 1:44-
21 49. This focus confirms that the focus of the alleged invention was merely
22 synchronizing independent devices that have independent clocks. *See ChargePoint,*
23 *Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 765-66 (Fed. Cir. 2019) (explaining that
24 the step one inquiry “as looking at the ‘focus’ of the claims” and the specification
25 may illuminate the true focus.”)

26 As recited in the claims, the concept of synchronizing a group of zone players
27 with independent clocks without more is an abstract idea. For example, independent
28 claim 17 attempts to add additional limitations such as communicating over a LAN,

1 and joining a group of devices that are synchronized. These limitations all relate to
2 the main portion of the claim which describes synchronizing the electronic devices.

3 Regarding *Alice* step two, whether in an individual limitation or the ordered
4 combination of the limitations, the asserted claims do not contain an “inventive
5 concept” that transforms the abstract idea into patent eligible claims. It is well-
6 settled that mere recitation of concrete, tangible components is insufficient to confer
7 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
8 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). The ordered combination of claims does
9 not contain inventive concepts either. Furthermore, the Supreme Court has
10 explained that “simply appending conventional steps, specified at a high level of
11 generality, to . . . abstract ideas cannot make those . . . ideas patentable.” *Mayo*
12 *Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012). The
13 issues apply to asserted claims 17, 21-24, and 26. Here, for example, all of the
14 limitations in claim 17 merely instruct the practitioner how to implement
15 synchronization with two devices – both of which have their own independent
16 clocks. Moreover, the hardware limitations (LAN, Processor, and memory) do not
17 rectify the issues with the claims. These limitations are well known and
18 conventional and routinely appear in prior art, such as that identified by Google.
19 Finally, the transfer of information between zone players for synchronization is not
20 an inventive concept—such limitations merely involve the transfer of information
21 regarding a zone player’s clock and the audio to be played. It is well known and
22 conventional that, to sync multiple speakers, information needs to be shared
23 amongst those speakers. The dependent claims also add nothing but conventional
24 additional limitations. For example, claims 21-23 merely identify the zone players
25 as master and slave (something done in electronics long before the alleged invention
26 date), claim 24 relates to playing the audio that is to be synchronized, and claim 26
27 describes the known process of playing the audio in sync with the timing
28 information transmitted.

1 **7. '715 Patent**

2 The asserted claims of the '715 Patent are invalid under 35 U.S.C. § 101
3 because they are directed to non-patentable subject matter. The asserted claims are
4 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
5 lack utility and the alleged invention claimed does not constitute patentable subject
6 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
7 *Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
8 no elements of the asserted claims that transform the nature of the claim into a
9 patent-eligible application of the abstract idea or provide the necessary inventive
10 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
11 merely involve well-understood, routine, conventional activity and implementations
12 previously used by those in the field at the time of the alleged inventions of the
13 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
14 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
15 entail nothing of patentable significance, and they are therefore invalid for failure to
16 meet the requirements of 35 U.S.C. § 101.

17 Regarding *Alice* step one, asserted claims 7, 9, 11, 13, 15, and 17 are directed
18 towards the abstract of idea of synchronizing a group of zone players (*i.e.*,
19 speakers). This abstract idea is confirmed by Sonos' reliance on the same evidence
20 alleging infringement for accused products. Sonos does not identify any specific
21 way of syncing speakers and instead merely identifies the fact that the speakers are
22 synchronized to allege infringement of the claims.

23 The specification confirms that the claims are directed to the abstract idea of
24 synchronizing a group of zone players. The specification states that “the present
25 invention relates generally to the field of digital data processing devices, and more
26 particularly to systems and methods for synchronizing operations among a plurality
27 of independently-clocked digital data processing devices.” '715 patent at 1:26-30. It
28 also states “the invention relates to the field of arrangements that synchronize output

1 generated by a number of output generators, including audio output, video output,
2 combinations of audio and video, as well as other types of output as will be
3 appreciated by those skilled in the art, provided by a common channel.” *Id.* at 1:37-
4 42. This focus confirms that the focus of the alleged invention was merely
5 synchronizing independent devices that have independent clocks. *See ChargePoint,*
6 *Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 765-66 (Fed. Cir. 2019) (explaining that
7 the step one inquiry “as looking at the ‘focus’ of the claims” and the specification
8 may illuminate the true focus.”).

9 As recited in the claims, the concept of synchronizing a group of zone players
10 with independent clocks without more is an abstract idea. For example, independent
11 claim 7 attempts to add additional limitations such as a processor and a synchrony
12 group. These limitations all relate to the main portion of the claim which describes
13 synchronizing the electronic devices.

14 Regarding *Alice* step two, whether in an individual limitation or the ordered
15 combination of the limitations, the asserted claims do not contain an “inventive
16 concept” that transforms the abstract idea into patent eligible claims. It is well-
17 settled that mere recitation of concrete, tangible components is insufficient to confer
18 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
19 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). The ordered combination of claims does
20 not contain inventive concepts either. Furthermore, the Supreme Court has
21 explained that “simply appending conventional steps, specified at a high level of
22 generality, to . . . abstract ideas cannot make those . . . ideas patentable.” *Mayo*
23 *Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012). The
24 issues apply to asserted claims 7, 9, 11, 13, 15, and 17. Here, for example, all of the
25 limitations in claim 7 merely instruct the practitioner how to implement
26 synchronization with two devices. Moreover, the hardware limitations (*e.g.*, “one or
27 more processors” and “tangible, non-transitory computer-readable media”) do not
28 rectify the issues with the claims. These limitations are well known and

1 conventional and routinely appear in prior art, such as that identified by Google.
2 Finally, the transfer of information between zone players for synchronization is not
3 an inventive concept—such limitations merely involve the transfer of information
4 regarding a zone player’s clock and the audio to be played. It is well known and
5 conventional that, to sync multiple speakers, information needs to be shared
6 amongst those speakers. The dependent claims also add nothing but conventional
7 additional limitations.

8 **8. ’001 Patent**

9 The asserted claims of the ’001 Patent are invalid under 35 U.S.C. § 101
10 because they are directed to non-patentable subject matter. The asserted claims are
11 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
12 lack utility and the alleged invention claimed does not constitute patentable subject
13 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
14 *Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
15 no elements of the asserted claims that transform the nature of the claim into a
16 patent-eligible application of the abstract idea or provide the necessary inventive
17 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
18 merely involve well-understood, routine, conventional activity and implementations
19 previously used by those in the field at the time of the alleged inventions of the
20 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
21 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
22 entail nothing of patentable significance, and they are therefore invalid for failure to
23 meet the requirements of 35 U.S.C. § 101.

24 Regarding *Alice* step one, asserted claims 12-14, 17-25, and 28-33 are
25 directed towards the abstract of idea of synchronizing a group of zone players (*i.e.*,
26 speakers). This abstract idea is confirmed by Sonos’ reliance on the same evidence
27 alleging infringement for accused products. Sonos does not identify any specific
28

1 way of syncing speakers and instead merely identifies the fact that the speakers are
2 synchronized to allege infringement of the claims.

3 The specification confirms that the claims are directed to the abstract idea of
4 synchronizing a group of zone players. The specification states that “the present
5 invention relates generally to the field of digital data processing devices, and more
6 particularly to systems and methods for synchronizing operations among a plurality
7 of independently-clocked digital data processing devices.” ’001 patent at 1:25-29. It
8 also states “the invention relates to the field of arrangements that synchronize output
9 generated by a number of output generators, including audio output, video output,
10 combinations of audio and video, as well as other types of output as will be
11 appreciated by those skilled in the art, provided by a common channel.” *Id.* at 1:36-
12 41. This focus confirms that the focus of the alleged invention was merely
13 synchronizing independent devices that have independent clocks. *See ChargePoint,*
14 *Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 765-66 (Fed. Cir. 2019) (explaining that
15 the step one inquiry “as looking at the ‘focus’ of the claims” and the specification
16 may illuminate the true focus.”).

17 As recited in the claims, the concept of synchronizing a group of zone players
18 with independent clocks without more is an abstract idea. For example, independent
19 claim 12 attempts to add additional limitations such as a processor and a synchrony
20 group. These limitations all relate to the main portion of the claim which describes
21 synchronizing the electronic devices.

22 Regarding *Alice* step two, whether in an individual limitation or the ordered
23 combination of the limitations, the asserted claims do not contain an “inventive
24 concept” that transforms the abstract idea into patent eligible claims. It is well-
25 settled that mere recitation of concrete, tangible components is insufficient to confer
26 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
27 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). The ordered combination of claims does
28 not contain inventive concepts either. Furthermore, the Supreme Court has

1 explained that “simply appending conventional steps, specified at a high level of
2 generality, to . . . abstract ideas cannot make those . . . ideas patentable.” *Mayo*
3 *Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012). The
4 issues apply to asserted claims 12-14, 17-25, and 28-33. Here, for example, all of
5 the limitations in claim 12 merely instruct the practitioner how to implement
6 synchronization with two devices. Moreover, the hardware limitations (*e.g.*, “at least
7 one processor” and “a tangible, non-transitory computer-readable medium”) do not
8 rectify the issues with the claims. These limitations are well known and
9 conventional and routinely appear in prior art, such as that identified by Google.
10 Finally, the transfer of information between zone players for synchronization is not
11 an inventive concept—such limitations merely involve the transfer of information
12 regarding a zone player’s clock and the audio to be played. It is well known and
13 conventional that, to sync multiple speakers, information needs to be shared
14 amongst those speakers. The dependent claims also add nothing but conventional
15 additional limitations.

16 **9. ’896 Patent**

17 The asserted claims of the ’896 Patent are invalid under 35 U.S.C. § 101
18 because they are directed to non-patentable subject matter. The asserted claims are
19 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
20 lack utility and the alleged invention claimed does not constitute patentable subject
21 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
22 *Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
23 no elements of the asserted claims that transform the nature of the claim into a
24 patent-eligible application of the abstract idea or provide the necessary inventive
25 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
26 merely involve well-understood, routine, conventional activity and implementations
27 previously used by those in the field at the time of the alleged inventions of the
28 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.

1 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
2 entail nothing of patentable significance, and they are therefore invalid for failure to
3 meet the requirements of 35 U.S.C. § 101.

4 Regarding *Alice* step one, the '896 patent claims are directed towards the
5 abstract of idea of using an initial communication path to provide network
6 configuration parameters to another device. This is just receiving and sending data
7 – an abstract idea. In addition, the concept does not improve any technology; rather,
8 it is just allegedly a convenient way to provide network configuration parameters.
9 Moreover, even this concept predates and is independent of the specific
10 technological environment recited in the claims (e.g., connecting a playback device
11 to a secure WLAN), since the same basic concept is applicable to any type of device
12 (e.g., printers) and network (e.g., non-secure WLAN or any other network). In fact,
13 the basic idea even applies to users exchanging and then manually entering network
14 configuration parameters, such as the user of a first device reading such parameters
15 to a user of a second device. Finally, Sonos' attempt to claim the basic idea of using
16 an initial communication path, especially when coupled with Sonos' overly broad
17 claim interpretations and attempted application of DOE, reflects an effort to preempt
18 the entire field of connecting devices to the Internet.

19 Regarding *Alice* step two, whether in an individual limitation or the ordered
20 combination of the limitations, the asserted claims do not contain an “inventive
21 concept” that transforms the abstract idea into patent eligible claims. It is well-
22 settled that mere recitation of concrete, tangible components is insufficient to confer
23 patent eligibility to an otherwise abstract idea. *In re TLI Commc'ns LLC Patent*
24 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). For example, the '896 patent claims
25 recite program instructions to perform the steps of network configuration and
26 merely claiming a generic, non-transitory storage medium that stores those program
27 instructions is insufficient to confer patent eligibility of the abstract idea.

1 The ordered combination of claims does not contain inventive concepts either.
2 Furthermore, the Supreme Court has explained that “simply appending conventional
3 steps, specified at a high level of generality, to . . . abstract ideas cannot make those
4 . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
5 Ct. 1289, 1300 (2012). Here, establishing an initial communication path and
6 exchanging messages are conventional steps in network communication and do not
7 contain inventive concepts.

8 **10. '883 Patent**

9 The asserted claims of the '883 Patent are invalid under 35 U.S.C. § 101
10 because they are directed to non-patentable subject matter. The asserted claims are
11 invalid for failure to meet the requirements of 35 U.S.C. § 101 because the claims
12 lack utility and the alleged invention claimed does not constitute patentable subject
13 matter. The asserted claims are directed to a patent-ineligible concepts. *See Alice*
14 *Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are
15 no elements of the asserted claims that transform the nature of the claim into a
16 patent-eligible application of the abstract idea or provide the necessary inventive
17 concept. *See id.* at 2357. In addition, all of the elements of the asserted claims
18 merely involve well-understood, routine, conventional activity and implementations
19 previously used by those in the field at the time of the alleged inventions of the
20 Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
21 Ct. 1289, 1294 (2012). The alleged inventions described in the asserted claims
22 entail nothing of patentable significance, and they are therefore invalid for failure to
23 meet the requirements of 35 U.S.C. § 101.

24 Regarding *Alice* step one, the '883 patent claims are directed towards the
25 abstract of idea of using an initial communication path to provide network
26 configuration parameters to another device. This is just receiving and sending data
27 – an abstract idea. In addition, the concept does not improve any technology; rather,
28 it is just allegedly a convenient way to provide network configuration parameters.

1 Moreover, even this concept predates and is independent of the specific
2 technological environment recited in the claims (e.g., connecting a playback device
3 to a secure WLAN), since the same basic concept is applicable to any type of device
4 (e.g., printers) and network (e.g., non-secure WLAN or any other network). In fact,
5 the basic idea even applies to users exchanging and then manually entering network
6 configuration parameters, such as the user of a first device reading such parameters
7 to a user of a second device. Finally, Sonos’ attempt to claim the basic idea of using
8 an initial communication path, especially when coupled with Sonos’ overly broad
9 claim interpretations and attempted application of DOE, reflects an effort to preempt
10 the entire field of connecting devices to the Internet.

11 Regarding *Alice* step two, whether in an individual limitation or the ordered
12 combination of the limitations, the asserted claims do not contain an “inventive
13 concept” that transforms the abstract idea into patent eligible claims. It is well-
14 settled that mere recitation of concrete, tangible components is insufficient to confer
15 patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent*
16 *Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). For example, the ’883 patent claims
17 recite program instructions to perform the steps of network configuration and
18 merely claiming a generic, non-transitory storage medium that stores those program
19 instructions is insufficient to confer patent eligibility of the abstract idea.

20 The ordered combination of claims does not contain inventive concepts either.
21 Furthermore, the Supreme Court has explained that “simply appending conventional
22 steps, specified at a high level of generality, to . . . abstract ideas cannot make those
23 . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S.
24 Ct. 1289, 1300 (2012). Here, establishing an initial communication path and
25 exchanging messages are conventional steps in network communication and do not
26 contain inventive concepts.

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1 **VIII. ADDITIONAL INVALIDITY/UNENFORCEABILITY CONTENTIONS**

2 In addition to the preceding contentions, Google further contends that the
3 Asserted Claims are invalid and/or unenforceable for the reasons set forth below.

4 **A. Inequitable Conduct**

5 The Asserted Patents are unenforceable due to inequitable conduct committed
6 by the inventors, attorneys, and/or applicants during prosecution. *See* Initial
7 Determination (public version) in 337-TA-1191 ITC investigation (noting
8 allegations of same).

9 **B. Lack of Inventorship Under 35.U.S.C. § 102**

10 The Asserted Claims of the Asserted Patents are unenforceable due to lack of
11 inventorship under 35 U.S.C. § 102. *See* Initial Determination (public version) in
12 337-TA-1191 ITC investigation (noting allegations of same).

13 **1. '258 Patent**

14 The asserted claims of the '258 patent are invalid under 35 U.S.C. § 102(f)
15 because Nicholas Millington did not invent the subject matter sought to be patented.
16 Section 102 states that “A person shall be entitled to a patent unless . . . (f) he did
17 not himself invent the subject matter sought to be patented.” In this case, the
18 alleged inventor, Mr. Millington got the idea for the content of the claims from
19 someone else, who should have been the true inventor, if the patent would have even
20 been filed.

21 Nicholas A.J. Millington is the sole named inventor of the '258 patent. On
22 information and belief, Mr. Millington worked at Microsoft from June 1998 to April
23 2003. <https://www.linkedin.com/in/nickmillington/>. On information and belief, in or
24 near February 2003, another employee of Sonos, Andrew Schulert, who also
25 previously worked at Microsoft, contacted Mr. Millington about joining Sonos.
26 <https://www.wired.com/story/sonos-nick-millington-exclusive-interview/>.

27 On July 28, 2003, after Mr. Millington left Microsoft, Sonos filed
28 a provisional application for the '258 patent allegedly disclosing (at least in part)

1 Sonos' speaker synchronization solution. Tellingly, Microsoft was working on its
2 own speaker synchronization solution during this time, filing applications for at least
3 U.S. Pat. App. Pub. No. 2002/015003 ("Gray") on April 17, 2001; U.S. Pat. No.
4 7,295,548 ("Blank I") on November 27, 2002; U.S. Pat. App. Pub. No.
5 2004/0252400 ("Blank II") on July 13, 2003. Gray, Blank I, and Blank II, alone or
6 in combination, disclose or render obvious the claims of the asserted patent. Thus,
7 upon information and belief, it appears that Mr. Millington copied at least part of the
8 subject matter claimed in the '258 patent from other Microsoft employees and/or
9 conceived at least part of the claimed inventions during his time at Microsoft. In
10 any event, Mr. Millington is not the proper inventor of the '258 patent, and therefore
11 it is invalid.

12 **2. '953 Patent**

13 The asserted claims of the '953 Patent are invalid under 35 U.S.C. § 102(f)
14 because Nicholas Millington did not invent the subject matter sought to be patented.
15 Section 102 states that "A person shall be entitled to a patent unless . . . (f) he did
16 not himself invent the subject matter sought to be patented." In this case, the
17 alleged inventor, Mr. Millington clearly got the idea for the content of the claims
18 from someone else, who should have been the true inventor, if the patent would
19 have even been filed.

20 Nicholas A.J. Millington is the sole named inventor of the '953 patent. On
21 information and belief, Mr. Millington worked at Microsoft from June 1998 to April
22 2003. <https://www.linkedin.com/in/nickmillington/>. On information and belief, in or
23 near February 2003, another employee of Sonos, Andrew Schulert, who also
24 previously worked at Microsoft, contacted Mr. Millington about joining Sonos.
25 <https://www.wired.com/story/sonos-nick-millington-exclusive-interview/>.

26 On July 28, 2003, after Mr. Millington left Microsoft, Sonos filed
27 a provisional application for the '258 patent allegedly disclosing (at least in part)
28 Sonos' speaker synchronization solution. Tellingly, Microsoft was working on its

1 own speaker synchronization solution during this time, filing applications for at least
2 U.S. Pat. App. Pub. No. 2002/015003 (“Gray”) on April 17, 2001; U.S. Pat. No.
3 7,295,548 (“Blank I”) on November 27, 2002; U.S. Pat. App. Pub. No.
4 2004/0252400 (“Blank II”) on July 13, 2003. Gray, Blank I, and Blank II, alone or
5 in combination, disclose or render obvious the claims of the asserted patent. Thus,
6 upon information and belief, it appears that Mr. Millington copied at least part of the
7 subject matter claimed in the ’953 patent from other Microsoft employees and/or
8 conceived at least part of the claimed inventions during his time at Microsoft. In
9 any event, Mr. Millington is not the proper inventor of the ’953 patent, and therefore
10 it is invalid.

11 **3. ’959 Patent**

12 The asserted claims of the ’959 patent are invalid under 35 U.S.C. § 102(f)
13 because the named inventors did not invent the subject matter sought to be patented.
14 *See* Initial Determination (public version) in 337-TA-1191 ITC investigation (noting
15 allegations of same). Google may seek further discovery on this topic.

16 **4. ’025 Patent**

17 On belief, for the similar reasons as the ’959 patent, the asserted claims of the
18 ’025 patent are invalid under 35 U.S.C. § 102(f). Google may seek further
19 discovery on this topic.

20 **5. ’949 Patent**

21 The asserted claims of the ’949 patent are invalid under 35 U.S.C. § 102(f)
22 because the named inventors did not invent the subject matter sought to be patented.
23 *See* Initial Determination (public version) in 337-TA-1191 ITC investigation (noting
24 allegations of same). Google may seek further discovery on this topic.

25 **6. ’014 Patent**

26 On belief, for the similar reasons as the ’949 patent, the asserted claims of the
27 ’014 patent are invalid under 35 U.S.C. § 102(f). Google may seek further
28 discovery on this topic.

1 **7. '896 Patent**

2 On belief, for the similar reasons as the '949 patent, the asserted claims of the
3 '014 patent are invalid under 35 U.S.C. § 102(f). *See* Initial Determination (public
4 version) in 337-TA-1191 ITC investigation (noting allegations of same). Google
5 may seek further discovery on this topic.

6 **8. '883 Patent**

7 On belief, for the similar reasons as the '949 patent, the asserted claims of the
8 '014 patent are invalid under 35 U.S.C. § 102(f). *See* Initial Determination (public
9 version) in 337-TA-1191 ITC investigation (noting allegations of same). Google
10 may seek further discovery on this topic.

11 **C. Prosecution Laches**

12 **1. '896 and '883 Patents**

13 The '896 and the '883 Patents are unenforceable under the doctrine of
14 prosecution laches, which bars enforcement of patents where the applicant
15 unreasonably and inexcusably delays prosecution, resulting in prejudice to others.
16 *Symbol Technologies, Inc. v. Lemelson Medical, Education & Research Foundation,*
17 *LP*, 422 F.3d 1378 (Fed. Cir. 2005), 1385-86.

18 Sonos engaged in a prolonged prosecution strategy for obtaining the '896 and
19 the '883 Patents, characterized by repeated continuation filings and deferrals,
20 effectively extending the pendency of the application well beyond the statutory
21 norm. Sonos initially filed its provisional application No. 60/577,284 (the '284
22 Provisional Application”) on June 5, 2004. On June 6, 2005, Sonos filed its first
23 application No. 11/147,116 (the “'116 Application”) in this patent family, which
24 resulted in issued patent No. 8,326,951 (the “'951 Patent”). Sonos subsequently
25 filed three continuations of the '116 Application on September 14, 2012 (application
26 No. 13/618,829), September 15, 2014 (application 14/486,667), and April 5, 2016
27 (application No. 15/091,113) which eventually resulted in issued patent Nos.
28

1 8,868,698 (the “’698 Patent”), 9,866,447 (the “’447 Patent”), and 10,979,310 (the
2 “’310 Patent”), respectively.

3 The ’896 and the ’883 Patent applications were filed concurrently on March
4 11, 2019 as continuations of the application that led to ’310 Patent. The original
5 claims of the ’896 recited “secure wireless local area network (WLAN)” or “secure
6 WLAN.” *See* ’896 File History. In response to a non-final office action, Sonos
7 appended the claims to “secure wireless local area network (WLAN) that is defined
8 by an access point” and “the secure WLAN that is defined by the access point.” *Id.*
9 Sonos also amended the claim term “the initial communication path with the
10 computing device is outside of the secure WLAN” to “the initial communication
11 path with the computing device does not traverse the access point.” *Id.* Sonos also
12 submitted terminal disclaimers to overcome an obviousness double patenting
13 rejection over its predecessor applications. *Id.* The claims were allowed after the
14 amendment.

15 The prosecution history of the ’883 Patent followed a similar pattern. *See*
16 ’883 File History.

17 None of the predecessor applications in this patent family included the
18 limitation “[wireless local area network (WLAN)] defined by an/the access point” in
19 their respective original claims. It was not until February 7, 2017 that Sonos first
20 introduced a claim limitation “wireless local area network provided by a wireless
21 access point” in its response to an office action dated November 2, 2016 rejecting all
22 the then pending claims of the application that led to the ’447 Patent. *See* ’447 File
23 History. Sonos also added the claim limitation “wherein the controller is a device
24 separate from the wireless access point and the playback device” in the same
25 amendment in order to overcome an obviousness rejection. *Id.*

26 As discussed above, Google does not concede that Sonos has provided
27 adequate disclosure in satisfaction of the written description requirement for the
28 claim limitations “secure wireless local area network (WLAN)/WLAN that is

1 defined by an/the access point.” In addition, Sonos waited almost 12 years since its
2 original ’116 Application to add such claim limitations, after Google had released
3 three iterations of its first Chromecast products¹⁴ and received significant market
4 appreciation. The delay constituted a strategic abuse of the patent system to obtain
5 de facto submarine patents and resulted in material prejudice to Google and to the
6 public. Plus, on information and belief, Sonos knew about Google’s Chromecast
7 products and other similar technologies and revised its claims or filed new claims
8 (including claims with limitations not supported by the originally filed provisional
9 and non-provisional applications) in an attempt to specifically target Google’s
10 Chromecast products and any other similar technologies that were released after the
11 originally filed provisional and non-provisional applications. Accordingly, under
12 Federal Circuit precedent and consistent with the equitable principles underlying the
13 patent system, the ’896 and the ’883 Patents should be deemed unenforceable due to
14 prosecution laches.

15 2. ’025 Patent

16 The ’025 patent is unenforceable under the doctrine of prosecution laches,
17 which bars enforcement of patents where the applicant unreasonably and
18 inexcusably delays prosecution, resulting in prejudice to others. *Symbol*
19 *Technologies, Inc. v. Lemelson Medical, Education & Research Foundation, LP*,
20 422 F.3d 1378 (Fed. Cir. 2005), 1385-86.

21 Sonos engaged in a prolonged prosecution strategy to obtain the ’025 patent
22 through repeated continuation and continuations-in-part filings extended the
23 application beyond the norm. Sonos initially filed its initial provisional application
24
25

26
27 ¹⁴ Google released the first generation Chromecast in July, 2013 and the second
28 generation in September, 2015. Google subsequently released a model Chromecast
Ultra in November, 2016.

1 no. 60/825,407 on September 12, 2006 and alleges it is entitled to a priority date of
2 January 25, 2011.¹⁵

3 The '025 patent was filed on October 31, 2019. In other words, Sonos waited
4 more than 13 years since its provisional application to file the '025 patent after
5 Google had released three iterations of its first Chromecast products.¹⁶ This
6 unreasonable and inexcusable delay constitutes a strategic abuse of the patent
7 system to obtain a *de facto* submarine patent and resulted in material prejudice to
8 Google and to the public. Indeed, Sonos made clear during prosecution, that this
9 delay was to abuse the patent system to materially prejudice Google and the public.
10 For example, on October 7, 2020 Sonos filed a replacement response based on the
11 ITC's claim construction ruling for the purpose of this litigation and to materially
12 prejudice Google. *See* October 21, 2020 Applicant-Initiated Interview Summary
13 ("Applicant called to explain the 10/07/2020 replacement response to the 8/31/2020
14 filing due to the narrowing court construal of the claimed equalization.").

15 Accordingly, under Federal Circuit precedent and consistent with the
16 equitable principles underlying the patent system, the '025 patent should be deemed
17 unenforceable under prosecution laches.

18 3. '258, '953, '715, and '001 Patents

19 The '258, '953, '715, and '001 patents are unenforceable under the doctrine
20 of prosecution laches, which bars enforcement of patents where the applicant
21 unreasonably and inexcusably delays prosecution, resulting in prejudice to others.
22

23 ¹⁵ The '025 patent is not entitled to the alleged January 25, 2011 priority
24 date. During prosecution, Sonos admitted the earliest priority date is April 8, 2011.
25 Applicant Arguments/Remarks Dated Oct. 7, 2020 at 11 ("Applicant submits the
26 claimed subject matter has a priority date at least as early as April 8, 2011[.]").

27 ¹⁶ Google released the first generation Chromecast in July, 2013 and the second
28 generation in September, 2015. Google subsequently released a model Chromecast
Ultra in November, 2016.

1 *Symbol Technologies, Inc. v. Lemelson Medical, Education & Research Foundation,*
2 *LP*, 422 F.3d 1378 (Fed. Cir. 2005), 1385-86.

3 Sonos engaged in a prolonged prosecution strategy to obtain these patents
4 through repeated continuation and continuations-in-part filings that extended the
5 applications beyond the norm. For all four patents, Sonos initially filed its initial
6 provisional application no. 60/490,768 on July 28, 2003, and Sonos alleges that it is
7 entitled to a priority date of April 1, 2004 (for the '258 and '953 patents) or July 28,
8 2003 (for the '715 and '001 patents).

9 The '258 patent was filed on February 20, 2014; the '953 patent was filed on
10 August 31, 2018; and the '715 and '001 patents were both filed on April 17, 2013.
11 In other words, Sonos waited nearly 10 years (or more) since its provisional
12 application to file the '258, '953, '715, and '001 patents. The more than 15 year
13 delay with respect to the '953 patent is particularly staggering. Google released
14 multi-room audio by December 2015.
15 [https://www.techtimes.com/articles/115214/20151210/googles-chromecast-audio-](https://www.techtimes.com/articles/115214/20151210/googles-chromecast-audio-update-now-supports-multi-room-hi-res.htm)
16 [update-now-supports-multi-room-hi-res.htm](https://www.techtimes.com/articles/115214/20151210/googles-chromecast-audio-update-now-supports-multi-room-hi-res.htm) (“Chromecast Audio now lets users
17 group multiple speakers together under one unit in its multi-room feature so that the
18 same song will play on all of them at the same time.”). Google also disclosed its
19 multizone audio features to Sonos during at least a June 2014 meeting between the
20 parties. This unreasonable and inexcusable delay constitutes a strategic abuse of the
21 patent system to obtain a *de facto* submarine patent and resulted in material
22 prejudice to Google and to the public.

23 Accordingly, under Federal Circuit precedent and consistent with the
24 equitable principles underlying the patent system, the '258, '953, '715, and '001
25 patents should be deemed unenforceable under prosecution laches.

1 **D. Obviousness-type Double Patenting**

2 **1. '014 Patent**

3 The asserted claims of the '014 patent are invalid under obviousness-type
4 double patenting at least based on the '949 patent. *See generally In re Collect, LLC*,
5 No. 2022-1293, 81 F.4th 1216 (Fed. Cir. 2023).

6 The '014 patent and '949 patent are in the same family, claim June 5, 2004 as
7 their priority date, and do not claim distinctive subject matter. The '949 patent has
8 expired. The '014 patent will expire no later than March 28, 2027 because of a
9 patent term adjustment. In other words, the '014 and '949 patents would have
10 expired on the same day but for the patent term adjustment. As such, the asserted
11 claims of the '014 patent are invalid under obviousness-type double patenting at
12 least based on the expired '949 patent.

13 **2. '715 Patent**

14 The asserted claims of the '715 Patent are invalid under obviousness-type
15 double patenting at least based on the earlier-issued, earlier-expiring claims of the
16 '258 Patent. *See generally In re Collect, LLC*, No. 2022-1293, 81 F.4th 1216 (Fed.
17 Cir. 2023). The '715 and '258 Patents are part of the same family, claim the same
18 July 28, 2003 priority date, and claim patentably indistinct subject matter. But the
19 '715 Patent has a patent term nearly three years longer than that of the '258 Patent,
20 as the result of a 1,008 day PTA that was granted during prosecution and the
21 patentee's failure to properly file a terminal disclaimer for patentably indistinct
22 claims.

23 For example, both sets of asserted claims are directed to systems for
24 “synchronous playback” or “playing back audio in synchrony” within a “synchrony
25 group,” and include first and second zone players that serve as one of either a
26 “master” or “slave” device within the synchrony group. *Compare* '715 Patent, cl. 7
27 *with* '258 Patent, cl. 17. As another example, they both claim obvious variations of
28 monitoring the synchrony group, by either transmitting an indication related to the

1 “status of the synchrony group” (’258 Patent, cl. 17) or evaluating “operational
2 performance metrics” related to the synchrony group (’715 Patent, cl. 7). Thus, as
3 in *In re Collect*, the later-expiring asserted claims of the ’715 Patent constitute “an
4 improper timewise extension of a patent term,” for an “obvious variation” of earlier-
5 expiring claims within the same family. *See* 81 F.4th at 1229-30.

6 3. ’001 Patent

7 The asserted claims of the ’001 Patent are invalid under obviousness-type
8 double patenting at least based on the earlier-issued, earlier-expiring claims of the
9 ’258 and ’953 Patents. *See generally In re Collect, LLC*, No. 2022-1293, 81 F.4th
10 1216 (Fed. Cir. 2023). The ’001, ’258, and ’953 Patents are part of the same family,
11 claim the same July 28, 2003 priority date, and claim patentably indistinct subject
12 matter. But the ’001 Patent has a term nearly two years longer than that of the ’258
13 and ’953 Patents, as the result of a 708 day PTA that was granted during prosecution
14 and the patentee’s failure to properly file a terminal disclaimer for patentably
15 indistinct claims. For example, all three sets of claims are directed to obvious
16 variations of a system for synchronous playback among a plurality of devices within
17 a synchrony group, where master and slave devices are designated according to their
18 respective roles, and where devices may be used to control and/or monitor the
19 synchrony group. *Compare* ’001 Patent, cl. 12 *with* ’258 Patent, cl. 17 *and* ’953
20 Patent, cl. 7. Thus, as in *In re Collect*, the later-expiring asserted claims of the ’001
21 Patent constitute “an improper timewise extension of a patent term,” for an “obvious
22 variation” of earlier-expiring claims within the same family. *See* 81 F.4th at 1229-
23 30.

24 IX. GOOGLE’S DOCUMENT PRODUCTION

25 Pursuant to S.P.R. 2.6.1, Google is producing source code, specifications,
26 schematics, flow charts, artwork, formulas and/or other documentation sufficient to
27 show the operation of any aspects or elements of an Accused Instrumentality
28

1 identified by Sonos in its Infringement Contentions at GOOG-SONOSITC-
2 00000001-1903.

3 Pursuant to S.P.R. 2.6.2, Google is producing copy or sample of the prior art
4 identified under S.P.R. 2.5.1 that does not appear in the file history of the patent(s)
5 at issue at GOOG-SONOSITC-PA-00000001-27086 and GOOG-SONOSCDCA-
6 PA-00000001-7479. To the extent any such item is not in English, an English
7 translation of the portion relied upon is provided.

8 **X. CONCLUSION**

9 For the reasons discussed above, and those revealed through further
10 discovery, the asserted claims of the Patents-in-Suit are invalid and unenforceable.

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1 DATED: April 28, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on April 28, 2025, a copy of the foregoing document—
Defendant Google LLC’s Invalidity Contentions—was served on counsel of record
for Plaintiff Sonos, Inc., via email:

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