

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

SONOS, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	
	)	C.A. No. 24-131-JNR
LINKPLAY TECHNOLOGY INC. and LINKPLAY	)	
TECHNOLOGY, INC. NANJING	)	
	)	
Defendants.	)	

**DEFENDANTS LINKPLAY TECHNOLOGY INC. AND LINKPLAY TECHNOLOGY INC.,  
NANJING'S INVALIDITY CONTENTIONS**

Complying with at least Paragraph 4(g)(iv) of the Court’s Scheduling Order (D.I. 44), Defendants Linkplay Technology Inc. and Linkplay Technology Inc., Nanjing (collectively, “Linkplay”) hereby serves its Invalidity Contentions and accompanying production to Sonos, Inc. (“Sonos”) as to the Asserted Claims<sup>1</sup> of U.S. Patent No. 7,571,014 (the “’014 Patent”), U.S. Patent No. 9,164,532 (the “’532 Patent”), U.S. Patent No. 9,213,357 (the “’357 Patent”), U.S. Patent No. 10,146,498 (the “’498 Patent”), U.S. Patent No. 10,541,883 (the “’883 Patent”), and U.S. Patent No. 10,853,023 (the “’023 Patent”) (collectively, the “Asserted Patents”).<sup>2</sup> These Invalidity Contentions supplement those served solely on behalf of Linkplay Technology Inc. on October 28, 2024, as well as the Invalidity Conventions served on behalf of both Linkplay Technology Inc. and Linkplay Technology Inc., Nanjing on December 19, 2024.

Linkplay makes this disclosure based upon its present understanding of the Asserted Patents and the prior art. Linkplay’s investigation regarding the Asserted Patents and potential grounds for invalidity is ongoing, and Linkplay reserves the right to supplement these Invalidity Contentions with prior art not included in this disclosure that may become relevant to invalidity as discovery progresses, additional research is conducted, and/or prior art is discovered. Linkplay further reserves the right to supplement and/or modify these Invalidity Contentions to assert additional defenses under 35 U.S.C. §§ 102, 103, and/or 112, and/or any other reasonable grounds, including in response to Sonos’s infringement theories, Sonos’s contentions or any findings as to the priority or invention date of the Asserted Claims of the Asserted Patents, claim construction positions taken or orders issued, expert discovery, or otherwise pursuant to the Federal Rules of Civil Procedure, Local Rules, and/or Court Orders.

These Invalidity Contentions are based on information reasonably known and available to Linkplay at this time. Linkplay has not completed its investigation of the facts and documents relating to

---

<sup>1</sup> The “Asserted Claims” are identified below in Section I.

<sup>2</sup> See Section IV.A. for the attached Invalidity Contention Chart Exhibit Listings.

this action and has not completed its preparation for trial. Because Linkplay's investigation, prior art search, and analysis are still ongoing, Linkplay may identify additional prior art or contentions that will add meaning to already known prior art or contentions, or possibly lead to additions or changes to these contentions. Several invalidity grounds in Linkplay's Invalidity Contentions require discovery from Sonos. Linkplay have issued discovery requests related to these issues to Sonos, whose responses were due but woefully deficient. Sonos' deficient discovery responses prejudice Linkplay's ability to further supplement its contentions. Linkplay reserves its rights to amend, modify, or supplement the contentions stated herein including adding additional grounds and/or additional theories under the grounds.

To the extent that these Invalidity Contentions rely on or otherwise suggest particular constructions of terms or phrases in the Asserted Claims, Linkplay is not proposing any such constructions as proper constructions of those terms or phrases. The Court has not issued a claim construction order. Accordingly, for purposes of these invalidity contentions, Linkplay may set forth alternative, and even inconsistent, claim construction positions. In particular, certain contentions, including those in the attached charts, may be based on claim constructions that appear to underlie Sonos's infringement contentions. Linkplay does not concede that Sonos's apparent constructions are proper and may contest any such constructions. Moreover, Linkplay does not admit that any accused product or service, or that any of Linkplay's other products or services, infringes any of the Asserted Claims of the Asserted Patents.

Nothing in these Invalidity Contentions should be interpreted as an admission that any claim satisfies the written description, enablement, or definiteness requirements, or the requirements associated with means-plus-function claims, pursuant to 35 U.S.C. § 112. Similarly, nothing in these Invalidity Contentions concerning the failure of any claim to satisfy 35 U.S.C. § 112 should be

interpreted as an admission that any element in the prior art fails to disclose any element in the claimed inventions of the Asserted Claims of the Asserted Patents.

Linkplay contends that each of the Asserted Claims of the Asserted Patents is invalid at least under 35 U.S.C. §§ 102, 103 112 and/or other grounds. Linkplay's claim charts cite to exemplary teachings and disclosures of the prior art as applied to features of the Asserted Claims of the Asserted Patents. However, persons having ordinary skill in the art may view an item of prior art generally in the context of their experience, training, other publications, literature, products, and understanding. Accordingly, Linkplay reserves the right to rely on portions of the prior art references that are not cited and on other publications and expert testimony as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that a claim limitation is known or disclosed. Linkplay further reserves the right to rely on portions of the prior art references that are not cited, other publications, and testimony to establish bases for combinations of certain cited references that render the Asserted Claims of the Asserted Patents obvious.

The references discussed in the claim charts, or elsewhere identified, may disclose the limitations of the Asserted Claims of the Asserted Patents explicitly and/or inherently. The prior art references may also be relied upon to show the state of the art in the relevant time frame. The exemplary obviousness combinations are provided in the alternative to Linkplay's anticipation contentions, and are not to be construed to suggest that any reference is not itself anticipatory.

Further, Linkplay may rely on inventor admissions concerning the scope of the prior art relevant to the Asserted Patents found in, *inter alia*: the patent prosecution history corresponding to each of the Asserted Patents and any patents or patent applications related to the Asserted Patents; any deposition testimony of any named inventor on any of the Asserted Patents and any patents or patent applications related to the Asserted Patents in this action or any other action; and the papers filed and any evidence

submitted by Sonos in connection with this action or other actions.

Linkplay reserves the right to supplement its contentions that the Asserted Claims of the Asserted Patents are invalid under 35 U.S.C. § 102(f)<sup>3</sup> in the event that Linkplay obtains evidence that any inventor named in the Asserted Patents did not invent (either alone or in conjunction with others) the subject matter claimed in the Asserted Patents or any other person not named as an inventor to the Asserted Patents actually invented the subject matter claimed in the Asserted Patents. If Linkplay obtains such evidence, it will supplement its contentions.

During prosecution of the Asserted Patents and related patents, Sonos made numerous admissions concerning prior art in the specification and/or the prosecution history (including the prosecution history of any reexamination), including admissions that certain claim elements of certain Asserted Claims of the Asserted Patents were present in the prior art. Sonos is thus estopped from taking positions inconsistent with its admissions in the prosecution history of the Asserted Patents and related patents. Linkplay thus reserves the right to assert that Sonos should be estopped from arguing that prior art does not disclose the claim elements that Sonos has already admitted are disclosed in the prior art should Sonos assert otherwise.

Linkplay incorporates by reference, in full, all prior art references and related patents (e.g., any patent that issued from any parent or ancestral application related in any way to a given patent and any continuing application, continuation-in-part application, divisional application, file-wrapper continuation, reexamination proceeding, reissue application, abandoned application or foreign counterpart application for that patent) cited in the Asserted Patents, their prosecution histories, and all references cited therein.

Linkplay also incorporates by reference the invalidity contentions and invalidity expert reports

---

<sup>3</sup> Linkplay applies the pre-AIA invalidity statutes to this case because the Asserted Patents each appear to have an effective filing date before March 16, 2013.

served, or will be served, by D&M and Google in their respective cases against Sonos. These prior cases involve many of the same patents and/or patents in the same family as those that Sonos asserts here, including (but not limited to) those shown in the table below:

Patent(s) Asserted Here	Related Patent(s) Asserted in Prior Case	Prior Case(s)
7,571,014	7,571,014	Sonos v. D&M, Sonos v. Google
	8,588,949	Sonos v. Google, Sonos v. D&M
9,164,532 9,213,357 10,146,498	9,213,357	Sonos v. D&M
	9,195,258	Sonos v. Google, Sonos v. D&M
	10,031,715	Sonos v. Google
	10,209,953	Sonos v. Google
	11,080,001	Sonos v. Google
10,541,883	10,439,896	Sonos v. Google
	10,541,883	Sonos v. Google
10,853,023	8,938,312	Sonos v. D&M

This incorporation of invalidity materials from the D&M and Google cases includes all grounds of invalidity asserted, whether under sections 101, 102, 103, 112, or some other ground, to the extent relevant and/or applicable to the patents asserted here. Not only is Sonos familiar with these materials and arguments but has also served many of these contentions and expert reports to Linkplay, and thus has notice that Linkplay may use the arguments contained within in this case.

Linkplay further incorporates by reference the current and future filings in the below proceedings before the PTAB, each relating to the invalidity of one or more of the asserted patents:

IPR2025-00509  
IPR2025-00510  
IPR2025-00511

Linkplay reserves the right to rely on any citations, explanations, evidence, and analyses provided in any of the above identified proceedings against any claims concerning related subject matter. Sonos's status as patent owner in these proceedings ensures that Sonos will be on notice of all theories and

explanations made in those proceedings, without any potential for unfairness or prejudice to Sonos. Linkplay further reserves the right to amend these contentions based on further filings, evidence, or other events, including but not limited to any analyses Sonos conducts in the above identified PTAB proceedings or analyses presented in this litigation concerning the grounds raised in the above proceedings.

**I. ASSERTED CLAIMS**

Linkplay’s Invalidation Contentions are limited to the Asserted Claims (the “Asserted Claims”) identified by Sonos in its September 27, 2024, Infringement Contentions and Supplemental January 16, 2025, Infringement Contentions, as reproduced below.

<b>Asserted Patent</b>	<b>Asserted Claims</b>
'014 Patent	1-5, 8-16, 18-26, 32-38, 41-44
'532 Patent	1-34
'357 Patent	1-20
'498 Patent	1-4, 6, 8-13, 15-17, 19, 22
'883 Patent	1-20
'023 Patent	1-17

**II. PRIORITY DATE**

Based on Sonos’s July 8, 2024, response to Linkplay’s Interrogatory No. 1, Linkplay understands that Sonos is asserting the following priority dates for the Asserted Patents:

<b>Asserted Patent</b>	<b>Priority Date</b>
'014 Patent	Claim 25: No later than June 5, 2004
'532 Patent	Claim 34: No later than April 1, 2004
'357 Patent	Claim 9: No later than April 1, 2004
'883 Patent	Claim 1: No later than June 5, 2004
'023 Patent	Claim 1: No later than April 18, 2011

With respect to the '498 Patent, Sonos has not alleged any entitlement to any priority date for any claims. Accordingly, Linkplay understands Sonos is not asserting any priority date earlier than the '498 Patent’s filing date of April 17, 2013.

To the extent the Court allows Sonos to assert earlier priority dates, Linkplay reserves its right to supplement its contentions to include additional prior art. Linkplay also disagrees that the Asserted Patents are actually entitled to these priority dates listed above.

Further, none of the asserted patents are entitled to the benefit of priority to any earlier filing dates than their respective filing dates because the claims include subject matter outside of the descriptions contained in any priority applications.

For example, the '532 Patent claims priority under 35 USC §120 to Non-Provisional application No. 13/297,000, filed Nov. 15, 2011, which is a continuation of Non-Provisional application No. 10/816,217, now U.S. Pat. No. 8,234,395, filed on Apr. 1, 2004, which further claims priority under 35 USC§ 119 to Provisional application No. 60/490,768 ("768 Provisional), filed on Jul. 28, 2003 (collectively, "Priority Applications" of the '532 Patent). But each of the Priority Applications to the '532 Patent fails to support the asserted claims of the '532 patent. For example, each of the Priority Applications to the '532 Patent fails to provide written description support and/or enable at least those claim elements of the '532 patent identified below in Section XI.A. For at least these reasons the asserted claims from the '532 patent are not entitled to any claimed priority date prior to its own filing date of March 30, 2012.

As a further example, the '357 Patent claims priority to Non-Provisional application No. 13/297,000, filed Nov. 15, 2011, which is a continuation of Non-Provisional application No. 10/816,217, now U.S. Pat. No. 8,234,395, filed on Apr. 1, 2004, which further claims priority under 35 USC§ 119 to Provisional application No. 60/490,768 ("768 Provisional), filed on Jul. 28, 2003 (collectively, "Priority Applications" of the '357 Patent). But each of the Priority Applications of the '357 Patent fails to provide written description support and/or enable at least those claim elements of the '357 patent identified below in Section XI.A. For at least these reasons the asserted claims from the

'357 Patent are not entitled are not entitled to any claimed priority date prior to its own filing date of October 17, 2014.

As a further example, the '498 Patent also claims priority to Non-Provisional application No. 13/297,000, now U.S. Pat. No. 9,182,777, filed Nov. 15, 2011, which is a continuation of Non-Provisional application No. 10/816,217, now U.S. Pat. No. 8,234,395, filed on Apr. 1, 2004, which is further claims priority under 35 USC§ 119 to Provisional application No. 60/490,768 ("768 Provisional), filed on Jul. 28, 2003 (collectively, "Priority Applications" of the '498 Patent). But each of the Priority Applications of the '498 Patent fails to provide written description support and/or enable at least those claim elements of the '498 patent identified below in Section XI.A. For at least these reasons the asserted claims from the '498 Patent are not entitled to any claimed priority date prior to its own filing date of April 17, 2013.

In addition to and separately from the above, each of the '357, '532, '498, and '014 Patents claim priority to U.S. Patent Application No. 10/816,217, which was filed on April 1, 2004 and abandoned shortly thereafter as described in detail below in XII.B. Accordingly, due to the broken priority chain, none of these four patents is entitled to claim priority to or through the '217 application. As a result, each of these patents does not entitle to the filing date of the '217 application as priority date.

Accordingly, each of the '357, '532, '498, and '014 Patents is not entitled to the earlier priorities, but rather, only their own filing dates, as follows:

<b>Asserted Patent</b>	<b>Priority Date</b>
'014 Patent	No earlier than June 5, 2004
'532 Patent	No earlier than March 30, 2012
'357 Patent	No earlier than October 17, 2014
'498 Patent	No earlier than April 17, 2013

As a further example, the '883 Patent also claims priority to Non-Provisional application No. 15/091,113, filed April 5, 2016, which claims to be a continuation of Non-Provisional application No.

14/486,667, now U.S. Pat. No. 9,866,447, filed on September 15, 2014, which claims to be a continuation of Non-Provisional application No. 13/618,829, now U.S. Pat. No. 8,868,698, filed on October 21, 2014, which claims to be a continuation of Non-provisional application No. 11/147,116, now U.S. Pat. No. 8,326,951, filed December 4, 2012, claiming priority under 35 USC§ 119 to Provisional application No. 60/577,284 (“284 Provisional), filed on June 5, 2004 (collectively, “Priority Applications” of the ’883 Patent). But each of the Priority Applications of the ’883 Patent fails to provide written description support and/or enable at least those claim elements of the ’883 patent identified below in Section XI.A. For at least these reasons the asserted claims from the ’883 Patent are not entitled to any claimed priority date prior to its own filing date of March 11, 2019.

As a further example, the ’023 Patent also claims priority to Non-Provisional application No. No. 15/583,553, filed May 1, 2017, which claims to be a continuation of Non-Provisional application No. 14/628,999, now U.S. Pat. No. 9,686,606, filed on February 23, 2015, which claims to be a continuation of Non-Provisional application No. 14/561,421, now U.S. Pat. No. 9,681,223, filed on December 5, 2014, which claims to be a continuation of Non-provisional application No. 13/089,167, now U.S. Pat. No. 8,938,312, filed April 18, 2011 (collectively, “Priority Applications” of the ’883 Patent). But each of the Priority Applications of the ’023 Patent fails to provide written description support and/or enable at least those claim elements of the ’023 patent identified below in Section XI.A. For at least these reasons the asserted claims from the ’023 Patent are not entitled to any claimed priority date prior to its own filing date of October 22, 2018.

As such, each of the asserted claims of the ’883 Patent and the ’023 Patent lacks written description support and/or enablement from the earlier applications they claim priority from as contended in detail below in XI.A. Accordingly, the ’883 Patent and the ’023 Patent are not entitled to the earlier priorities, but rather, only their own filing dates, as follows:

Asserted Patent	Priority Date
'883 Patent	No earlier than March 11, 2019
'023 Patent	No earlier than October 22, 2018

### III. IDENTIFICATION OF PRIOR ART

The identified prior art references and systems below disclose the limitations of the Asserted Claims of the Asserted Patents explicitly, inherently, or as part of an obvious combination, and may also be relied upon to show the state of the art at the relevant times. Linkplay may also rely upon persons identified as inventors of the prior art patents, authors of the prior art publications, individuals with personal knowledge of prior art systems, and/or others as they become identified through further discovery. In addition, Linkplay may rely upon the facts as developed in discovery of prior invention or derivation of the alleged inventions claimed in the Asserted Patents.

Additionally, Linkplay's identification of prior art references also include references that are related to patent applications and issued patents that contain substantially the same subject matter (e.g., published U.S. patent applications, and issued U.S. patents, foreign publications or issued patents) even if those related publications or patents are not expressly listed. Any citation to or quotation from any of these patent applications or patents, therefore, encompasses any parallel citation to the same subject matter in other related or corresponding applications or patents. For example, where a claim chart cites an issued patent that has a pre-grant publication of the patent application with substantially the same specification, Linkplay may rely upon the published patent application or the issued patent as prior art.

Much of the art identified in the attached Exhibits/charts reflects the common knowledge of persons of ordinary skill in the art and the state of the relevant art at the time of the earliest claim to priority. Linkplay may rely on additional citations, references, expert testimony, and other material to provide context or to aid in understanding the cited portions of the references or cited features of the

systems. Linkplay may also rely on expert testimony explaining relevant portions of references, relevant hardware or software products or systems, and other discovery regarding these subject matters.

Additionally, Linkplay may rely on other portions of any prior art reference for purposes of explaining the background and general technical subject area of the reference.

Because the '014 patent, the '357 patent, the '532 patent, and the '498 patent are directed to substantially overlapping subject matter, Linkplay identifies all prior art references identified for each of these three patents also as prior art references for the other two patents. All charts for each of these three patents, included as exhibits to Linkplay's Invalidation Contentions, should also be treated as charts prepared for the other two patents as disclosing any related claim elements.

Further, Sonos has not yet provided adequate discovery on products embodying the Asserted Patents that may have been previously used, publicly disclosed, published, offered for sale or sold prior to the alleged invention of the Asserted Patents. Linkplay reserves the right to supplement or amend these contentions based on future discovery related to Sonos products embodying the prior art.

**A. The '014 Patent**

The following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '014 Patent:

**Prior Art Patent Grant References**

<b>Patent Number</b>	<b>Reference Name</b>	<b>Filing Date</b>	<b>Issue Date</b>	<b>Prior Art Type(s)</b>
US6469633	Wachter	1/5/1998	10/22/2002	§§ 102(a), (b), (e)
US7627825B2	Kakuda	9/29/2004	12/1/2009	§§ 102(a), (e)
US6826283B1	Wheeler	7/27/2000	11/30/2004	§§ 102(a), (e)
US5761320A	Farinelli	6/26/1995	6/2/1998	§§ 102(a), (b), (e)
US5182552A	Paynting	12/7/1990	1/26/1993	§§ 102(a), (b), (e)
US7197148B2	Nourse '148	9/9/2002	3/27/2007	§§ 102(a), (e)
US4509211A	Robbins	5/16/1983	4/2/1985	§§ 102(a), (b), (e)

US5086385A	Launey	1/31/1989	2/4/1992	§§ 102(a), (b), (e)
US7136934B2	Carter	6/19/2001	11/14/2006	§§ 102(a), (e)
US4994908A	Kuban	4/20/1989	2/19/1991	§§ 102(a), (b), (e)
US5740235A	Lester	2/9/1994	4/14/1998	§§ 102(a), (b), (e)
US6269406B1	Dutcher	10/19/1998	7/31/2001	§§ 102(a), (b), (e)
US7945636B2	Nelson	5/15/2002	5/17/2011	§§ 102(a), (e)
US5956025A	Goulden	6/6/1997	9/21/1999	§§ 102(a), (b), (e)
US6081266A	Sciammarella	4/21/1997	6/27/2000	§§ 102(a), (b), (e)
US6046550A	Ference	6/16/1999	4/4/2000	§§ 102(a), (b), (e)
US7139981B2	Mayer	6/13/2002	11/21/2006	§§ 102(a), (e)
US6915347B2	Hanko	12/6/2000	7/5/2005	§§ 102(a), (e)
US6901439B1	Bonasia	1/20/2000	5/31/2005	§§ 102(a), (e)
US7302644	Holtz	4/15/2002	11/27/2007	§§ 102(a), (e)
US7263110	Fujishiro	9/10/2003	8/28/2007	§ 102(e)
US7305694	Commons	9/7/2004	12/4/2007	§ 102(e)
US6684060	Curtin	4/11/2000	1/27/2004	§§ 102(a), (b), (e)
US6571103	Novakov	5/9/2000	5/27/2003	§§ 102(a), (b), (e)
US6208846	Chen	3/27/2001	3/27/2001	§§ 102(a), (b), (e)
US7710941	Reitschel	11/6/2002	5/4/2010	§ 102(e)
US6466832	Zuqert	8/24/1998	10/15/2002	§§ 102(a), (b), (e)
US7295548	Blank I	2/27/2002	11/13/2007	§§ 102(a), (b), (e)
US6697382	Eatherton	3/7/2000	2/24/2004	§§ 102(a), (b), (e)
US6324586	Johnson	9/17/1998	11/27/2001	§§ 102(a), (b), (e)
US5815689	Shaw	4/4/1997	9/29/1998	§§ 102(a), (b), (e)
US6389139	Curtis	11/18/1997	5/14/2002	§§ 102(a), (b), (e)
US7324857	Goddard	4/19/2002	1/29/2008	§§ 102(a), (b), (e)
US8024055B2	Holmgren	5/15/2004	9/20/2011	§§ 102(a), (b), (e)
EP0653144B1	Clair	7/30/1993	2/12/1998	§§ 102(a), (b), (e)
US5357511	DiNapoli	3/22/1993	8/18/1994	§§ 102(a), (b), (e)
US5406634	Anderson	3/16/1993	4/11/1995	§§ 102(a), (b), (e)
US5596420	Daum	6/7/1995	1/21/1997	§§ 102(a), (b), (e)
US7937118	Coutinho	10/30/2001	5/3/2011	§§ 102(a), (b), (e)
US8290173	Richenstein	1/22/2002	10/16/2012	§§ 102(a), (b), (e)
US7233769	Richenstein	10/30/2001	6/19/2007	§§ 102(a), (b), (e)
CN1886918	Richenstein	10/22/2004	12/27/2006	§§ 102(a), (b), (e)

US6987947	Richenstein	10/22/2003	1/17/2006	§§ 102(a), (b), (e)
-----------	-------------	------------	-----------	---------------------

**Prior Art Patent Publication References**

Patent Publication Number	Reference Name	Filing Date	Publication Date	Prior Art Type
US20020072816A1	Shdema	12/7/2000	1/13/2002	§§ 102(a), (b), (e)
US2002/0124097	Isely28	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0083342	Webb	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2002/0083172	Knowles I	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2003/0046703	Knowles II	8/29/2001	3/6/2003	§§ 102(a), (b), (e)
US20020072816A1	Shdema	12/7/2000	1/13/2002	§§ 102(a), (b), (e)
US2002/0124097	Isely28	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0072817A1	Champion	12/11/2000	6/13/2002	§§ 102(a), (b), (e)
US2002/0078293A1	Kou	10/12/2001	6/20/2002	§§ 102(a), (b), (e)
US2003/0014486A1	May	7/16/2001	1/16/2003	§§ 102(a), (b), (e)
US2002/0165921A1	Sapieyevski	4/24/2002	11/7/2002	§§ 102(a), (b), (e)
US2004/0177167A1	Iwamura	3/4/2003	9/9/2004	§§ 102(a), (e)
US2005/0060435A1	Xue	9/17/2003	3/17/2005	§§ 102(a), (e)
GB200213763D0	GB2002	6/14/2002	7/24/2002	§§ 102(a), (b)
CA2320451A1	Bonneville	9/22/2000	3/23/2001	§§ 102(a), (b)
US2002015003	Gray	4/17/2001	10/17/2002	§§ 102(a), (b), (e)
US20040252400	Blank II	6/13/2003	12/16/2004	§§ 102(a), (b), (e)
US20020124097	Isely '097	12/29/2002	9/5/2002	§§ 102(a), (b), (e)
US2005/0131558	Braithwaithe	5/8/2003	6/16/2005	§§ 102(a), (b), (e)
US2004/0223622	Linemann	4/6/2001	11/11/2004	§§ 102(a), (b), (e)
WO2002080012A1	Mushkin	3/27/2002	10/10/2002	§§ 102(a), (b), (e)
US2003/0050989	Marinescu	1/28/2002	3/13/2003	§§ 102(a), (b), (e)
US2002/0194309A1	Carter	6/19/2001	12/19/2002	§§ 102(a), (b), (e)
US2004/0157555A1	Richenstein	1/8/2003	8/12/2004	§§ 102(a), (b), (e)
US 2001/0038392 A1	Humpleman	9/22/1997	11/8/2001	§§ 102(a), (b), (e)
US2002/0085725A1	Bizjak	11/29/2000	7/4/2002	§§ 102(a), (b), (g), (e)

US2002/0002039A1	Qureshey	3/12/2001	1/3/2002	§§ 102(a), (b), (g), (e)
US20030094093A1	Smith	5/4/2001	5/22/2003	§§ 102(a), (b), (e)
US2003/0100335	Gassho '335	11/26/2002	5/29/2003	§§ 102(a), (b), (e)
US2003/0212802A1	Rector	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
US2004/0125964A1	Graham	12/31/2002	7/1/2004	§§ 102(a), (b), (e)
US2002/0067909A1	Iivonen	6/30/2000	6/6/2002	§§ 102(a), (b), (e)
WO1999017442A1	Lin	8/21/1998	4/8/1999	§§ 102(a), (b), (e)
WO2005/041447A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
WO2009/058974A1	Coutinho	10/31/2007	5/7/2009	§§ 102(a), (b), (e)
AU2004307459B2	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
CA2542735A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)

**Prior Art Printed Publications**

<b>Title</b>	<b>Publication Date</b>	<b>Author &amp; Publisher</b>	<b>Prior Art Type</b>
UPnP Standard	1999-2010	UPnP Forum	§§ 102(a), (b)
Escient Fireball MP-200 User's Manual	2/7/2006	D&M Holdings	§§ 102(a), (b)
Escient Fireball SE-D1 User's Manual	7/25/2006	D&M Holdings	§§ 102(a), (b)
Fireball Installation and User Guide	10/2023	D&M Holdings	§§ 102(a), (b)
Fireball Remote Control Guide	12/23/2003	D&M Holdings	§§ 102(a), (b)
Denon AV Surround Receiver AVR-1604/684 Operating Instructions	6/26/2003	Sound United LLC	§§ 102(a), (b)
Denon AV Surround Receiver AVR-5800 Operating Instructions	8/3/2000	Sound United LLC	§§ 102(a), (b)
Home Director Installation and Service Manual, IBM	June 1998	International Business Corporation	§§ 102(a), (b)
Home Director Owner's Manual	May 2009	International Business Corporation	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
EPSON PowerLite	2005	Seiko Epson	§§ 102(a), (b)

8300i User's Guide		Corporation	
EPSON PowerLite 8300i Quick Setup	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Information Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Brochure	2003	Seiko Epson Corporation	§§ 102(a), (b)
EasyMP SetUp Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EpsonNet 802.11b User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)

**Prior Art Use, Sale, and/or Offer for Sale (§§ 102(a), (b))**

Prior Art	Date	Person or Entity
UPnP System	1999-2010	UPnP Forum
Escient Fireball	2003/10 to 2006/7/25	D&M Holdings
Denon AVRs	2000-2003	Sound United LLC
Home Director	1998-1999	International Business Corporation
Model MRC44 Four Zone — Four Source Audio/Video Controller/Amplifier System	2002	Xantech Corporation
NexSys Software	1997	Crest Audio, Inc.
EPSON PowerLite 8300i	4/14/2003	Seiko Epson Corporation

**B. The '532 Patent**

The following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '532 Patent:

**Prior Art Patent Grant References**

Patent Number	Reference Name	Filing Date	Issue Date	Prior Art Type
US7263110	Fujishiro	9/10/2003	8/28/2007	§§ 102(a), (b), (e)

US7305694	Commons	9/7/2004	12/4/2007	§§ 102(a), (b), (e)
US6684060	Curtin	4/11/2000	1/27/2004	§§ 102(a), (b), (e)
US6571103	Novakov	5/9/2000	5/27/2003	§§ 102(a), (b), (e)
US6208846	Chen	1/13/1997	3/27/2001	§§ 102(a), (b), (e)
US6466832	Zuqert	8/24/1998	10/15/2002	§§ 102(a), (b), (e)
US7295548B2	Blank	11/7/2002	11/13/2007	§§ 102(a), (b), (e)
US7324857	Goddard	4/19/2002	1/29/2008	§§ 102(a), (b), (e)
US6353172B1	Fay	2/2/1999	3/5/2002	§§ 102(a), (b), (e)
US6313879B1	Kubo	9/11/1998	11/6/2001	§§ 102(a), (b), (e)
US5430485A	Lankford	9/30/1993	7/4/1995	§§ 102(a), (b), (e)
US4530091A	Crockett	7/8/1983	7/16/1985	§§ 102(a), (b), (e)
US5661665A	Glass	6/26/1996	8/26/1997	§§ 102(a), (b), (e)
US6321252B1	Bhola	7/17/1998	11/20/2001	§§ 102(a), (b), (e)
US5812201A	Yoo	12/27/1995	9/29/1998	§§ 102(a), (b), (e)
US6018376A	Nakatani	8/18/1997	1/25/2000	§§ 102(a), (b), (e)
US6859460B1	Chen '460	5/31/2000	2/22/2005	§§ 102(a), (b), (e)
US5960006A	Maturi '006	5/31/2000	2/22/2005	§§ 102(a), (b), (e)
US6246701B1	Slattery	1/14/1998	6/12/2001	§§ 102(a), (b), (e)
US7120168B2	Zimmerman	11/20/2001	10/10/2006	§§ 102(a), (b), (e)
US6654956B1	Trinh	4/10/2000	11/25/2003	§§ 102(a), (b), (e)
US6088063A	Shiba	1/29/1997	7/11/2000	§§ 102(a), (b), (e)
US7630501B2	Blank III	5/14/2004	12/8/2009	§§ 102(a), (b), (e)
US5815689	Shaw	4/4/1997	9/29/1998	§§ 102(a), (b), (e)
US6324586	Johnson	9/17/1998	11/27/2001	§§ 102(a), (b), (e)
US6389139	Curtis	11/18/1997	5/14/2002	§§ 102(a), (b), (e)
US7302644	Holtz	4/15/2002	11/27/2007	§§ 102(a), (e)
US8024055B2	Holmgren	5/15/2004	9/20/2011	§§ 102(a), (b), (e)
EP0653144B1	Clair	7/30/1993	2/12/1998	§§ 102(a), (b), (e)
US5357511	DiNapoli	3/22/1993	8/18/1994	§§ 102(a), (b), (e)
US5406634	Anderson	3/16/1993	4/11/1995	§§ 102(a), (b), (e)
US5596420	Daum	6/7/1995	1/21/1997	§§ 102(a), (b), (e)
US7937118	Coutinho	10/30/2001	5/3/2011	§§ 102(a), (b), (e)
US8290173	Richenstein	1/22/2002	10/16/2012	§§ 102(a), (b), (e)
US7233769	Richenstein	10/30/2001	6/19/2007	§§ 102(a), (b), (e)
CN1886918	Richenstein	10/22/2004	12/27/2006	§§ 102(a), (b), (e)

US6987947	Richenstein	10/22/2003	1/17/2006	§§ 102(a), (b), (e)
-----------	-------------	------------	-----------	---------------------

**Prior Art Patent Publication References**

Patent Publication Number	Reference Name	Filing Date	Publication Date	Prior Art Type
US2002/0124097	Isely	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0083342	Webb	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2002/0083172	Knowles I	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2003/0046703	Knowles II	8/29/2001	3/6/2003	§§ 102(a), (b), (e)
WO1999/023560A1	Ludwig	11/4/1998	5/14/1999	§§ 102(a), (b), (e)
US2002/0131761A1	Kawasaki '761	1/16/2002	9/19/2002	§§ 102(a), (b), (e)
US2002/0150053A1	Gray	4/17/2001	10/17/2002	§§ 102(a), (b), (e)
US2005/0131558	Braithwaite	5/8/2003	6/16/2005	§§ 102(a), (b), (e)
US2003/0014486A1	May	7/16/2001	1/16/2003	§§ 102(a), (b), (e)
US2004/0223622	Lindemann	4/6/2001	11/11/2004	§§ 102(a), (b), (e)
US20030050989	Marinescu	1/28/2002	3/13/2003	§§ 102(a), (b), (e)
US2002/0194309A1	Carter	6/19/2001	12/19/2002	§§ 102(a), (b), (e)
US20040252400A1	Blank	06/13/2003	12/16/2004	§§ 102(a), (b), (e)
US20070142944A1	Goldberg	12/04/2006	06/21/2007	§§ 102(a), (b), (e)
US20030073432A1	Meade	10/16/2001	04/17/2003	§§ 102(a), (b), (e)
US20040078383A1	Mercer	10/17/2002	04/22/2004	§§ 102(a), (b), (e)
US20020173273A1	Spurgat	05/16/2001	11/21/2002	§§ 102(a), (b), (e)
WO2005013047A2	Millington	2/7/2004	2/10/2005	§§ 102(a), (b), (e)
WO2005013047A3	Millington	2/7/2004	4/9/2009	§§ 102(a), (b), (e)
US2007/0038999A1	Millington	4/1/2004	2/15/2007	§§ 102(a), (b), (e)
US2004/0157555A1	Richenstein	1/8/2003	8/12/2004	§§ 102(a), (b), (e)
US 2001/0038392 A1	Humpleman	9/22/1997	11/8/2001	§§ 102(a), (b), (e)
US2002/0085725A1	Bizjak	11/29/2000	7/4/2002	§§ 102(a), (b), (g), (e)
US2002/0002039A1	Qureshey	3/12/2001	1/3/2002	§§ 102(a), (b), (g), (e)
US20030094093A1	Smith	5/4/2001	5/22/2003	§§ 102(a), (b), (e)
US2003/0100335	Gassho '335	11/26/2002	5/29/2003	§§ 102(a), (b), (e)
US2003/0212802A1	Rector	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
US2004/0125964A1	Graham	12/31/2002	7/1/2004	§§ 102(a), (b), (e)

WO2002080012A1	Mushkin	3/27/2002	10/10/2002	§§ 102(a), (b), (e)
US2002/0067909A1	Iivonen	6/30/2000	6/6/2002	§§ 102(a), (b), (e)
WO1999017442A1	Lin	8/21/1998	4/8/1999	§§ 102(a), (b), (e)
WO2005/041447A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
WO2009/058974A1	Coutinho	10/31/2007	5/7/2009	§§ 102(a), (b), (e)
AU2004307459B2	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
CA2542735A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)

**Prior Art Printed Publications**

<b>Title</b>	<b>Publication Date</b>	<b>Author &amp; Publisher</b>	<b>Prior Art Type</b>
UPnP Standard	1999-2010	UPnP Forum	§§ 102(a), (b)
Escient Fireball MP-200 User's Manual	2/7/2006	D&M Holdings	§§ 102(a), (b)
Escient Fireball SE-D1 User's Manual	7/25/2006	D&M Holdings	§§ 102(a), (b)
Fireball Installation and User Guide	10/2023	D&M Holdings	§§ 102(a), (b)
Fireball Remote Control Guide	12/23/2003	D&M Holdings	§§ 102(a), (b)
Denon AV Surround Receiver AVR-1604/684 Operating Instructions	6/26/2003	Sound United LLC	§§ 102(a), (b)
Denon AV Surround Receiver AVR-5800 Operating Instructions	8/3/2000	Sound United LLC	§§ 102(a), (b)
Home Director Installation and Service Manual, IBM	June 1998	International Business Corporation	§§ 102(a), (b)
Home Director Owner's Manual	May 2009	International Business Corporation	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
A Method to Improve the Robustness of MPEG Video Applications over Wireless Networks	2000	Pillai	§§ 102(a), (b)
A Distributed Real-Time MPEG Video Audio Player	1995	Cen	§§ 102(a), (b)
An Adaptive Protocol for	1997	Rothermel	§§ 102(a), (b)

Synchronizing Media Streams			
Synchronization in Joint-Viewing Environments	1992	Rothermel	§§ 102(a), (b)
A System Supporting Flexible Distributed RealTime Music Processing	2001	Dannenberg	§§ 102(a), (b)
Remote Access to Interactive Media	June 1996	Dannenberg	§§ 102(a), (b)
On the Importance Of Exact Synchronization for Distributed Audio Signal Processing	Nov. 2002	Lienhart	§§ 102(a), (b)
Multimedia conferencing over ISDN and IP networks using ITU-T H-series recommendations: architecture, control and coordination	1999	Reid	§§ 102(a), (b)
Wide Area Audio Synchronization	Nov. 1995	Barham	§§ 102(a), (b)
Feedback 'Techniques for Continuity and Synchronization in Multimedia Information Retrieval	1995/4	Rangan	§§ 102(a), (b)
Enhancing Internet Streaming Media with Cueing Protocols	Dec. 2000	Hewlett Packard	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
EPSON PowerLite 8300i User's Guide	2005	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Quick Setup	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Information Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Brochure	2003	Seiko Epson Corporation	§§ 102(a), (b)
EasyMP SetUp Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EpsonNet 802.11b User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)

**Prior Art Use, Sale, and/or Offer for Sale (§§ 102(a), (b))**

<b>Prior Art</b>	<b>Date</b>	<b>Person or Entity</b>
UPnP System	1999-2010	UPnP Forum
Escient Fireball	2003/10 to 2006/7/25	D&M Holdings
Denon AVRs	2000-2003	Sound United LLC
Home Director	1998-1999	International Business Corporation
Avago System	Feb. 2003-May 2004	Avago Systems
Model MRC44 Four Zone — Four Source Audio/Video Controller/Amplifier System	2002	Xantech Corporation
NexSys Software	1997	Crest Audio, Inc.
EPSON PowerLite 8300i	4/14/2003	Seiko Epson Corporation

### **C. The '357 Patent**

The following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '357 Patent:

#### **Prior Art Patent Grant References**

<b>Patent Number</b>	<b>Reference Name</b>	<b>Filing Date</b>	<b>Issue Date</b>	<b>Prior Art Type</b>
US7263110	Fujishiro	9/10/2003	8/28/2007	§§ 102(a), (b), (e)
US7305694	Commons	9/7/2004	12/4/2007	§§ 102(a), (b), (e)
US6684060	Curtin	4/11/2000	1/27/2004	§§ 102(a), (b), (e)
US6571103	Novakov	5/9/2000	5/27/2003	§§ 102(a), (b), (e)
US6208846	Chen	1/13/1997	3/27/2001	§§ 102(a), (b), (e)
US6466832	Zuqert	8/24/1998	10/15/2002	§§ 102(a), (b), (e)
US7295548B2	Blank	11/7/2002	11/13/2007	§§ 102(a), (b), (e)
US7324857	Goddard	4/19/2002	1/29/2008	§§ 102(a), (b), (e)
US6353172B1	Fay	2/2/1999	3/5/2002	§§ 102(a), (b), (e)
US6313879B1	Kubo	9/11/1998	11/6/2001	§§ 102(a), (b), (e)
US5430485A	Lankford	9/30/1993	7/4/1995	§§ 102(a), (b), (e)
US4530091A	Crockett	7/8/1983	7/16/1985	§§ 102(a), (b), (e)

US5661665A	Glass	6/26/1996	8/26/1997	§§ 102(a), (b), (e)
US6321252B1	Bhola	7/17/1998	11/20/2001	§§ 102(a), (b), (e)
US5812201A	Yoo	12/27/1995	9/29/1998	§§ 102(a), (b), (e)
US6018376A	Nakatani	8/18/1997	1/25/2000	§§ 102(a), (b), (e)
US6859460B1	Chen '460	5/31/2000	2/22/2005	§§ 102(a), (b), (e)
US5960006A	Maturi '006	5/31/2000	2/22/2005	§§ 102(a), (b), (e)
US6246701B1	Slattery	1/14/1998	6/12/2001	§§ 102(a), (b), (e)
US7120168B2	Zimmerman	11/20/2001	10/10/2006	§§ 102(a), (b), (e)
US6654956B1	Trinh	4/10/2000	11/25/2003	§§ 102(a), (b), (e)
US6088063A	Shiba	1/29/1997	7/11/2000	§§ 102(a), (b), (e)
US7630501B2	Blank III	5/14/2004	12/8/2009	§§ 102(a), (b), (e)
US5815689	Shaw	4/4/1997	9/29/1998	§§ 102(a), (b), (e)
US7454331	Vinton	8/30/2002	11/18/2008	§§ 102(a), (b), (e)
US6324586	Johnson	9/17/1998	11/27/2001	§§ 102(a), (b), (e)
US6389139	Curtis	11/18/1997	5/14/2002	§§ 102(a), (b), (e)
US7302644	Holtz	4/15/2002	11/27/2007	§§ 102(a), (e)
US8024055B2	Holmgren	5/15/2004	9/20/2011	§§ 102(a), (b), (e)
EP0653144B1	Clair	7/30/1993	2/12/1998	§§ 102(a), (b), (e)
US5357511	DiNapoli	3/22/1993	8/18/1994	§§ 102(a), (b), (e)
US5406634	Anderson	3/16/1993	4/11/1995	§§ 102(a), (b), (e)
US5596420	Daum	6/7/1995	1/21/1997	§§ 102(a), (b), (e)
US7937118	Coutinho	10/30/2001	5/3/2011	§§ 102(a), (b), (e)
US8290173	Richenstein	1/22/2002	10/16/2012	§§ 102(a), (b), (e)
US7233769	Richenstein	10/30/2001	6/19/2007	§§ 102(a), (b), (e)
CN1886918	Richenstein	10/22/2004	12/27/2006	§§ 102(a), (b), (e)
US6987947	Richenstein	10/22/2003	1/17/2006	§§ 102(a), (b), (e)
US 7,116,894	Chatterton	05/24/2002	10/03/2006	§ 102(e)

**Prior Art Patent Publication References**

<b>Patent Publication Number</b>	<b>Reference Name</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Prior Art Type</b>
US2002/0124097	Isely	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0083342	Webb	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2002/0083172	Knowles I	5/5/2001	5/27/2002	§§ 102(a), (b), (e)

US2003/0046703	Knowles II	8/29/2001	3/6/2003	§§ 102(a), (b), (e)
WO1999/023560A1	Ludwig	11/4/1998	5/14/1999	§§ 102(a), (b), (e)
US2002/0131761A1	Kawasaki '761	1/16/2002	9/19/2002	§§ 102(a), (b), (e)
US2002/0150053A1	Gray	4/17/2001	10/17/2002	§§ 102(a), (b), (e)
US2005/0131558	Braithwaite	5/8/2003	6/16/2005	§§ 102(a), (b), (e)
US20030014486A1	May	7/16/2001	1/16/2003	§§ 102(a), (b), (e)
US2004/0223622	Lindemann	4/6/2001	11/11/2004	§§ 102(a), (b), (e)
US20030050989	Marinescu	1/28/2002	3/13/2003	§§ 102(a), (b), (e)
US2002/0194309A1	Carter	6/19/2001	12/19/2002	§§ 102(a), (b), (e)
WO2005013047A2	Millington	2/7/2004	2/10/2005	§§ 102(a), (b), (e)
WO2005013047A3	Millington	2/7/2004	4/9/2009	§§ 102(a), (b), (e)
WO2005013047A2	Millington	2/7/2004	4/9/2009	§§ 102(a), (b), (e)
US2007/0038999A1	Millington	4/1/2004	2/15/2007	§§ 102(a), (b), (e)
US2004/0157555A1	Richenstein	1/8/2003	8/12/2004	§§ 102(a), (b), (e)
US 2001/0038392 A1	Humpleman	9/22/1997	11/8/2001	§§ 102(a), (b), (e)
US2002/0085725A1	Bizjak	11/29/2000	7/4/2002	§§ 102(a), (b), (g), (e)
US2002/0002039A1	Qureshey	3/12/2001	1/3/2002	§§ 102(a), (b), (g), (e)
US20030094093A1	Smith	5/4/2001	5/22/2003	§§ 102(a), (b), (e)
US2003/0100335	Gassho '335	11/26/2002	5/29/2003	§§ 102(a), (b), (e)
US2003/0212802A1	Rector	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
US2004/0125964A1	Graham	12/31/2002	7/1/2004	§§ 102(a), (b), (e)
WO2002080012A1	Mushkin	3/27/2002	10/10/2002	§§ 102(a), (b), (e)
US2002/0067909A1	Iivonen	6/30/2000	6/6/2002	§§ 102(a), (b), (e)
WO1999017442A1	Lin	8/21/1998	4/8/1999	§§ 102(a), (b), (e)
WO2005/041447A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
WO2009/058974A1	Coutinho	10/31/2007	5/7/2009	§§ 102(a), (b), (e)
AU2004307459B2	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
CA2542735A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
US2003/0083024	Richenstein	7/3/2002	5/1/2003	§ 102 (b)

**Prior Art Printed Publications**

<b>Title</b>	<b>Publication Date</b>	<b>Author &amp; Publisher</b>	<b>Prior Art Type</b>
UPnP Standard	1999-2010	UPnP Forum	§§ 102(a), (b)
Escient Fireball MP-200 User's Manual	2/7/2006	D&M Holdings	§§ 102(a), (b)

Escent Fireball SE-D1 User's Manual	7/25/2006	D&M Holdings	§§ 102(a), (b)
Fireball Installation and User Guide	10/2023	D&M Holdings	§§ 102(a), (b)
Fireball Remote Control Guide	12/23/2003	D&M Holdings	§§ 102(a), (b)
Denon AV Surround Receiver AVR-1604/684 Operating Instructions	6/26/2003	Sound United LLC	§§ 102(a), (b)
Denon AV Surround Receiver AVR-5800 Operating Instructions	8/3/2000	Sound United LLC	§§ 102(a), (b)
Home Director Installation and Service Manual, IBM	June 1998	International Business Corporation	§§ 102(a), (b)
Home Director Owner's Manual	May 2009	International Business Corporation	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
A Method to Improve the Robustness of MPEG Video Applications over Wireless Networks	2000	Pillai	§§ 102(a), (b)
A Distributed Real-Time MPEG Video Audio Player	1995	Cen	§§ 102(a), (b)
An Adaptive Protocol for Synchronizing Media Streams	1997	Rothermel	§§ 102(a), (b)
Synchronization in Joint-Viewing Environments	1992	Rothermel	§§ 102(a), (b)
A System Supporting Flexible Distributed RealTime Music Processing	2001	Dannenberg	§§ 102(a), (b)
Remote Access to Interactive Media	June 1996	Dannenberg	§§ 102(a), (b)
On the Importance Of	Nov. 2002	Lienhart	§§ 102(a), (b)

Exact Synchronization for Distributed Audio Signal Processing			
Multimedia conferencing over ISDN and IP networks using ITU-T H-series recommendations: architecture, control and coordination	1999	Reid	§§ 102(a), (b)
Wide Area Audio Synchronisation	Nov. 1995	Barham	§§ 102(a), (b)
Feedback Techniques for Continuity and Synchronization in Multimedia Information Retrieval	1995/4	Rangan	§§ 102(a), (b)
Enhancing Internet Streaming Media with Cueing Protocols	Dec. 2000	Hewlett Packard	§§ 102(a), (b)
EPSON PowerLite 8300i User's Guide	2005	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Quick Setup	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Information Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Brochure	2003	Seiko Epson Corporation	§§ 102(a), (b)
EasyMP SetUp Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EpsonNet 802.11b User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)
Bogen ProMatrix Digitally Matrixed Amplifier Model PM3180			
RFC1889	Jan. 1996	IETF	§§ 102(a), 102(b)

**Prior Art Use, Sale, and/or Offer for Sale (§§ 102(a), (b))**

Prior Art	Date	Person or Entity
UPnP System	1999-2010	UPnP Forum
Escient Fireball	2003/10 to 2006/7/25	D&M Holdings
Denon AVRs	2000-2003	Sound United LLC
Home Director	1998-1999	International Business Corporation
Avago System	Feb. 2003-May 2004	Avago Systems
Model MRC44 Four Zone — Four Source Audio/Video Controller/Amplifier System	2002	Xantech Corporation
NexSys Software	1997	Crest Audio, Inc.
EPSON PowerLite 8300i	4/14/2003	Seiko Epson Corporation

#### D. The '498 Patent

The following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '498 Patent:

#### Prior Art Patent Grant References

Patent Number	Reference Name	Filing Date	Issue Date	Prior Art Type
US7263110	Fujishiro	9/10/2003	8/28/2007	§§ 102(a), (b), (e)
US7305694	Commons	9/7/2004	12/4/2007	§§ 102(a), (b), (e)
US6684060	Curtin	4/11/2000	1/27/2004	§§ 102(a), (b), (e)
US6571103	Novakov	5/9/2000	5/27/2003	§§ 102(a), (b), (e)
US6208846	Chen	1/13/1997	3/27/2001	§§ 102(a), (b), (e)
US6466832	Zuqert	8/24/1998	10/15/2002	§§ 102(a), (b), (e)
US7295548B2	Blank	11/7/2002	11/13/2007	§§ 102(a), (b), (e)
US7324857	Goddard	4/19/2002	1/29/2008	§§ 102(a), (b), (e)
US6353172B1	Fay	2/2/1999	3/5/2002	§§ 102(a), (b), (e)
US6313879B1	Kubo	9/11/1998	11/6/2001	§§ 102(a), (b), (e)
US5430485A	Lankford	9/30/1993	7/4/1995	§§ 102(a), (b), (e)
US4530091A	Crockett	7/8/1983	7/16/1985	§§ 102(a), (b), (e)
US5661665A	Glass	6/26/1996	8/26/1997	§§ 102(a), (b), (e)
US6321252B1	Bhola	7/17/1998	11/20/2001	§§ 102(a), (b), (e)

US5812201A	Yoo	12/27/1995	9/29/1998	§§ 102(a), (b), (e)
US6018376A	Nakatani	8/18/1997	1/25/2000	§§ 102(a), (b), (e)
US6859460B1	Chen '460	5/31/2000	2/22/2005	§§ 102(a), (b), (e)
US5960006A	Maturi '006	5/31/2000	2/22/2005	§§ 102(a), (b), (e)
US6246701B1	Slattery	1/14/1998	6/12/2001	§§ 102(a), (b), (e)
US7120168B2	Zimmerman	11/20/2001	10/10/2006	§§ 102(a), (b), (e)
US6654956B1	Trinh	4/10/2000	11/25/2003	§§ 102(a), (b), (e)
US6088063A	Shiba	1/29/1997	7/11/2000	§§ 102(a), (b), (e)
US7630501B2	Blank III	5/14/2004	12/8/2009	§§ 102(a), (b), (e)
US5815689	Shaw	4/4/1997	9/29/1998	§§ 102(a), (b), (e)
US6324586	Johnson	9/17/1998	11/27/2001	§§ 102(a), (b), (e)
US6389139	Curtis	11/18/1997	5/14/2002	§§ 102(a), (b), (e)
US7302644	Holtz	4/15/2002	11/27/2007	§§ 102(a), (e)
US8024055B2	Holmgren	5/15/2004	9/20/2011	§§ 102(a), (b), (e)
EP0653144B1	Clair	7/30/1993	2/12/1998	§§ 102(a), (b), (e)
US5357511	DiNapoli	3/22/1993	8/18/1994	§§ 102(a), (b), (e)
US5406634	Anderson	3/16/1993	4/11/1995	§§ 102(a), (b), (e)
US5596420	Daum	6/7/1995	1/21/1997	§§ 102(a), (b), (e)
US7937118	Coutinho	10/30/2001	5/3/2011	§§ 102(a), (b), (e)
US8290173	Richenstein	1/22/2002	10/16/2012	§§ 102(a), (b), (e)
US7233769	Richenstein	10/30/2001	6/19/2007	§§ 102(a), (b), (e)
CN1886918	Richenstein	10/22/2004	12/27/2006	§§ 102(a), (b), (e)
US6987947	Richenstein	10/22/2003	1/17/2006	§§ 102(a), (b), (e)
US 5,786,814 B1	Moran	11/03/1995	07/28/1998	§§ 102(a), (b), (e)
US 7,668,182	Hetzel	08/26/2005	03/02/2006	§§ 102(a), (b), (e)
US 6,353,174 B1	Schmidt	12/10/1999	03/05/2002	§§ 102(a), (b), (e)

**Prior Art Patent Publication References**

<b>Patent Publication Number</b>	<b>Reference Name</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Prior Art Type</b>
US2002/0124097	Isely	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0083342	Webb	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2002/0083172	Knowles I	5/5/2001	5/27/2002	§§ 102(a), (b), (e)

US2003/0046703	Knowles II	8/29/2001	3/6/2003	§§ 102(a), (b), (e)
WO1999/023560A1	Ludwig	11/4/1998	5/14/1999	§§ 102(a), (b), (e)
US2002/0131761A1	Kawasaki '761	1/16/2002	9/19/2002	§§ 102(a), (b), (e)
US2002/0150053A1	Gray	4/17/2001	10/17/2002	§§ 102(a), (b), (e)
US2005/0131558	Braithwaite	5/8/2003	6/16/2005	§§ 102(a), (b), (e)
US2003/0014486A1	May	7/16/2001	1/16/2003	§§ 102(a), (b), (e)
US2004/0223622	Lindemann	4/6/2001	11/11/2004	§§ 102(a), (b), (e)
US20030050989	Marinescu	1/28/2002	3/13/2003	§§ 102(a), (b), (e)
US2002/0194309A1	Carter	6/19/2001	12/19/2002	§§ 102(a), (b), (e)
US20040252400A1	Blank	06/13/2003	12/16/2004	§§ 102(a), (b), (e)
US20070142944A1	Goldberg	12/04/2006	06/21/2007	§§ 102(a), (b), (e)
US20030073432A1	Meade	10/16/2001	04/17/2003	§§ 102(a), (b), (e)
US20040078383A1	Mercer	10/17/2002	04/22/2004	§§ 102(a), (b), (e)
US20020173273A1	Spurgat	05/16/2001	11/21/2002	§§ 102(a), (b), (e)
WO2005013047A2	Millington	2/7/2004	2/10/2005	§§ 102(a), (b), (e)
WO2005013047A3	Millington	2/7/2004	4/9/2009	§§ 102(a), (b), (e)
US2007/0038999A1	Millington	4/1/2004	2/15/2007	§§ 102(a), (b), (e)
US2004/0157555A1	Richenstein	1/8/2003	8/12/2004	§§ 102(a), (b), (e)
US 2001/0038392 A1	Humpleman	9/22/1997	11/8/2001	§§ 102(a), (b), (e)
US2002/0085725A1	Bizjak	11/29/2000	7/4/2002	§§ 102(a), (b), (g), (e)
US2002/0002039A1	Qureshey	3/12/2001	1/3/2002	§§ 102(a), (b), (g), (e)
US20030094093A1	Smith	5/4/2001	5/22/2003	§§ 102(a), (b), (e)
US2003/0100335	Gassho '335	11/26/2002	5/29/2003	§§ 102(a), (b), (e)
US2003/0212802A1	Rector	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
US2004/0125964A1	Graham	12/31/2002	7/1/2004	§§ 102(a), (b), (e)
US2003/0012149A1	Maggenti	09/12/2002	1/16/2003	§§ 102(a), (b), (e)
WO2002080012A1	Mushkin	3/27/2002	10/10/2002	§§ 102(a), (b), (e)
US2002/0067909A1	Iivonen	6/30/2000	6/6/2002	§§ 102(a), (b), (e)
WO1999017442A1	Lin	8/21/1998	4/8/1999	§§ 102(a), (b), (e)
WO2005/041447A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
WO2009/058974A1	Coutinho	10/31/2007	5/7/2009	§§ 102(a), (b), (e)
AU2004307459B2	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
CA2542735A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
US2003/0083024	Richenstein	7/3/2002	5/1/2003	§ 102 (b)

**Prior Art Printed Publications**

<b>Title</b>	<b>Publication Date</b>	<b>Author &amp; Publisher</b>	<b>Prior Art Type</b>
UPnP Standard	1999-2010	UPnP Forum	§§ 102(a), (b)
Escient Fireball MP-200 User's Manual	2/7/2006	D&M Holdings	§§ 102(a), (b)
Escient Fireball SE-D1 User's Manual	7/25/2006	D&M Holdings	§§ 102(a), (b)
Fireball Installation and User Guide	10/2023	D&M Holdings	§§ 102(a), (b)
Fireball Remote Control Guide	12/23/2003	D&M Holdings	§§ 102(a), (b)
Denon AV Surround Receiver AVR-1604/684 Operating Instructions	6/26/2003	Sound United LLC	§§ 102(a), (b)
Denon AV Surround Receiver AVR-5800 Operating Instructions	8/3/2000	Sound United LLC	§§ 102(a), (b)
Home Director Installation and Service Manual, IBM	June 1998	International Business Corporation	§§ 102(a), (b)
Home Director Owner's Manual	May 2009	International Business Corporation	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
A Method to Improve the Robustness of MPEG Video Applications over Wireless Networks	2000	Pillai	§§ 102(a), (b)
A Distributed Real-Time MPEG Video Audio Player	1995	Cen	§§ 102(a), (b)
An Adaptive Protocol for Synchronizing Media Streams	1997	Rothermel	§§ 102(a), (b)
Synchronization in Joint-Viewing Environments	1992	Rothermel	§§ 102(a), (b)
A System Supporting Flexible Distributed RealTime Music Processing	2001	Dannenberg	§§ 102(a), (b)
Remote Access to Interactive Media	June 1996	Dannenberg	§§ 102(a), (b)
On the Importance Of Exact Synchronization for	Nov. 2002	Lienhart	§§ 102(a), (b)

Distributed Audio Signal Processing			
Multimedia conferencing over ISDN and IP networks using ITU-T H-series recommendations: architecture, control and coordination	1999	Reid	§§ 102(a), (b)
Wide Area Audio Synchronization	Nov. 1995	Barham	§§ 102(a), (b)
Feedback 'Techniques for Continuity and Synchronization in Multimedia Information Retrieval	1995/4	Rangan	§§ 102(a), (b)
Enhancing Internet Streaming Media with Cueing Protocols	Dec. 2000	Hewlett Packard	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
EPSON PowerLite 8300i User's Guide	2005	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Quick Setup	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Information Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Brochure	2003	Seiko Epson Corporation	§§ 102(a), (b)
EasyMP SetUp Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EpsonNet 802.11b User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)
Media Oriented System Transport Specification v. 2.0	2002	MOST Cooperation	§§ 102(a), (b)

**Prior Art Use, Sale, and/or Offer for Sale (§§ 102(a), (b))**

<b>Prior Art</b>	<b>Date</b>	<b>Person or Entity</b>
UPnP System	1999-2010	UPnP Forum
Escient Fireball	2003/10 to 2006/7/25	D&M Holdings
Denon AVRs	2000-2003	Sound United LLC
Home Director	1998-1999	International Business Corporation

Avago System	Feb. 2003-May 2004	Avago Systems
Model MRC44 Four Zone — Four Source Audio/Video Controller/Amplifier System	2002	Xantech Corporation
NexSys Software	1997	Crest Audio, Inc.
EPSON PowerLite 8300i	4/14/2003	Seiko Epson Corporation

**E. The '883 Patent**

The following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '883 Patent:

**Prior Art Patent Grant References**

Patent Number	Reference Name	Filing Date	Issue Date	Prior Art Type
US7313384	Meenan	10/31/2002	12/25/2007	§§ 102(a), (b), (e)
US7532862	Cheshire	03/19/2002	05/12/2009	§§ 102(a), (b), (e)
US7275156	Smetters '156	9/5/2003	9/25/2007	§§ 102(a), (b), (e)
US7454619	Smetters '619	9/5/2003	11/18/2008	§§ 102(a), (b), (e)
US7581096	Smetters '096	9/5/2003	8/25/2009	§§ 102(a), (b), (e)
US7757076	Smetters '076	9/5/2003	7/13/2010	§§ 102(a), (b), (e)
US7937089	Smetters '089	9/5/2003	5/3/2011	§§ 102(a), (b), (e)
US55774016A	Ketterer	4/9/1996	6/30/1998	§§ 102(a), (b), (e)
US8024055B2	Holmgren	5/15/2004	9/20/2011	§§ 102(a), (b), (e)
US7308188	Namatame	9/30/2002	12/11/2007	§§ 102(a), (b), (e)
US6919771	Nakajima	9/25/2003	7/19/2005	§§ 102(a), (b), (e)
US5440644	Farinelli	4/15/1993	8/8/1995	§§ 102(a), (b), (e)
US8654995B2	Silber	4/19/2007	2/18/2014	§§ 102(a), (b), (e)
US7558635B1	Thiel	7/10/2002	7/7/2009	§§ 102(a), (b), (e)
US6535121	Matheny	4/6/2000	3/18/2003	§§ 102(a), (b), (e)
CN1598767A	Huang's 767	9/15/2004	3/23/2005	§§ 102(a), (b)
EP1517464A2	Craig	8/31/2004	3/23/2005	§§ 102(a), (b)
US3956591A	Gates	12/18/1974	5/11/1976	§§ 102(a), (b), (e)

US4105974A	Rogers	10/14/1975	8/8/1978	§§ 102(a), (b), (e)
US4306114A	Callahan	1/21/1980	12/15/1981	§§ 102(a), (b), (e)
US5182552A	Paynting	12/7/1990	1/26/1993	§§ 102(a), (b), (e)
US5625350A	Fukatsu	12/27/1994	4/29/1997	§§ 102(a), (b), (e)
US5875233A	Cox	2/18/1997	2/23/1999	§§ 102(a), (b), (e)
US6873862B2	Reshefsky	7/24/2004	3/29/2005	§§ 102(a), (b), (e)
US7161939B2	Israel	6/29/2001	1/9/2007	§§ 102(a), (b), (e)
US7472058B2	Tseng	12/28/2004	12/30/2008	§§ 102(a), (b), (e)
US7721032B2	Bushell	8/20/2007	5/18/2010	§§ 102(a), (b), (e)
US7761176B2	Ben-Yaacov	11/23/2004	7/20/2010	§§ 102(a), (b), (e)
US7945708B2	Ohkita	1/9/2009	5/17/2011	§§ 102(a), (b), (e)
US7995732B2	Koch	10/4/2007	8/9/2011	§§ 102(a), (b), (e)
US8041062B2	Cohen	11/21/2006	10/18/2011	§§ 102(a), (b), (e)
US8233029B2	Yoshida	2/28/2007	7/31/2012	§§ 102(a), (b), (e)
US7987294	Bryce	10/16/2007	7/26/2011	§§ 102(a), (b), (e)
US7853341	McCarty	2/20/2004	12/14/2010	§§ 102(a), (b), (e)
US7653344	Feldman	1/9/2004	1/26/2010	§§ 102(a), (b), (e)
US6487296	Allen	9/30/1998	11/26/2002	§§ 102(a), (b), (e)
US6324586	Johnson	9/17/1998	11/27/2001	§§ 102(a), (b), (e)
US6389139	Curtis	11/18/1997	5/14/2002	§§ 102(a), (b), (e)
US7302644	Holtz	4/15/2002	11/27/2007	§§ 102(a), (e)
US7324857	Goddard	4/19/2002	1/29/2008	§§ 102(a), (b), (e)
US8290173	Richenstein	1/22/2002	10/16/2012	§§ 102(a), (b), (e)
US7233769	Richenstein	10/30/2001	6/19/2007	§§ 102(a), (b), (e)
CN1886918	Richenstein	10/22/2004	12/27/2006	§§ 102(a), (b), (e)
US6987947	Richenstein	10/22/2003	1/17/2006	§§ 102(a), (b), (e)

**Prior Art Patent Publication References**

<b>Patent Pub. No.</b>	<b>Reference Name</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Prior Art Type</b>
US2003/0212802	Rector	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
US2003/0181203	Cheshire	03/19/2002	09/25/2003	§§ 102(a), (b), (e)
US2003/0100335	Gassho '335	11/26/2002	05/29/2003	§§ 102(a), (b), (e)
US 2003/0091015	Gassho '015	10/31/2002	05/15/2003	§§ 102(a), (b), (e)
US20050129240	Smetters '240	12/15/2003	6/16/2005	§§ 102(a), (b), (e)

US20090124289A1	Nishida	11/10/2008	5/14/2009	§§ 102(a), (b), (e)
US20040185773A1	Gerber	3/18/2003	9/23/2004	§§ 102(a), (b), (e)
US20050154766A1	Huang '766	12/23/2004	7/14/2005	§§ 102(a), (b), (e)
US20060222186A1	Paige	4/5/2005	10/5/2006	§§ 102(a), (b), (e)
US20060259649A1	Hsieh	4/27/2006	11/16/2006	§§ 102(a), (b), (e)
US20070087686A1	Holm	10/18/2005	4/19/2007	§§ 102(a), (b), (e)
US20080205070A1	Osada	1/28/2008	8/28/2008	§§ 102(a), (b), (e)
US20080303947A1	Ohnishi	8/5/2008	12/11/2008	§§ 102(a), (b), (e)
US20100087089A1	Struthers	10/2/2009	4/8/2010	§§ 102(a), (b), (e)
US20110001632A1	Hohrorst	7/1/2009	1/6/2011	§§ 102(a), (b), (e)
WO2008082350A1	Lundmark	12/20/2007	7/10/2008	§§ 102(a), (b), (e)
US20040014426	Moore	7/19/2002	1/22/2004	§§ 102(a), (b), (e)
US2002/0124097	Isely	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0083342	Webb	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2002/0083172	Knowles I	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2003/0046703	Knowles II	8/29/2001	3/6/2003	§§ 102(a), (b), (e)
US2009/0060219	Inohara I	8/27/2008	3/5/2009	§§ 102(a), (b), (e)
US2009/0169030	Inohara II	12/16/2008	7/2/2009	§§ 102(a), (b), (e)
US2004/0157555A1	Richenstein	1/8/2003	8/12/2004	§§ 102(a), (b), (e)
US 2001/0038392 A1	Humpleman	9/22/1997	11/8/2001	§§ 102(a), (b), (e)
US2002/0085725A1	Bizjak	11/29/2000	7/4/2002	§§ 102(a), (b), (g), (e)
US2002/0002039A1	Qureshey	3/12/2001	1/3/2002	§§ 102(a), (b), (g), (e)
US20030094093A1	Smith	5/4/2001	5/22/2003	§§ 102(a), (b), (e)
US2004/0125964A1	Graham	12/31/2002	7/1/2004	§§ 102(a), (b), (e)
WO2002080012A1	Mushkin	3/27/2002	10/10/2002	§§ 102(a), (b), (e)
WO2005/041447A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
WO2009/058974A1	Coutinho	10/31/2007	5/7/2009	§§ 102(a), (b), (e)
AU2004307459B2	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
CA2542735A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
US2003/0083024	Richenstein	7/3/2002	5/1/2003	§§ 102(a), (b), (e)
US2002/0174243	Spurgat	5/16/2001	11/21/2002	§§ 102(a), (b), (e)
US2002/0188656	Patton	11/16/2001	12/12/2002	§§ 102(a), (b), (e)

**Prior Art Printed Publications**

<b>Title</b>	<b>Publication Date</b>	<b>Author &amp; Publisher</b>	<b>Prior Art Type</b>
EpsonNet 802.11b Wireless Print Server	01/14/2002	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i User's Guide	2005	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Quick Setup	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Information Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Brochure	2003	Seiko Epson Corporation	§§ 102(a), (b)
EasyMP SetUp Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EpsonNet 802.11b User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)
UPnP Standard	1999-2010	UPnP Forum	§§ 102(a), (b)
RFC 793	9/1981	Defense Advanced Research Projects Agency; Information Processing Techniques Office	§§ 102(b)
IEEE 802.15.1	June 14, 2002	IEEE Computer Society	§ 102(a), (b)
IEEE 802.11	1999	IEEE Computer Society	§ 102(a), (b)
Epson PowerLite 735 User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)
Point and Shoot Profile version 1.1	March 20, 2000	Infrared Data Association	§§ 102(a), (b), (e)

**Prior Art Use, Sale, and/or Offer for Sale (§§ 102(a), (b))**

<b>Item</b>	<b>Date</b>	<b>Person or Entity</b>
Apple Airport Express 802.116(1 <sup>st</sup> Generation)	5/20/2004	Apple, Inc.
BridgeCo Wireless Audio Adapter	1/7/2004	BridgeCo AG

Cd3o C200 and C300	1/9/2003	Cd30
Creative SoundBlaster Wireless Music	10/1/2003	Creative Technology Ltd.
EpsonNet 802.11b Wireless Print Server	1/14/2002	Seiko Epson Corporation
Hewlett Packard HP Deskjet 5800 Series	10/13/2003	Hewlett-Packard Company
Linksys Wireless-B Media Adapter	7/14/2003	The Linksys Group, Inc.
Philips Wireless PC Link Micro System (MCW770)	1/6/2004	Koninklijke Philips N.V.
SMC Networks EZ-Stream Universal Wireless Multimedia Receiver SMCWMR-AG	11/3/2003	SMC Networks, Inc.
Yamaha MusicCast MCX-A10 and MCX-1000	1/9/2003	Yamaha Corporation
Home Director	1998-1999	International Business Corporation
Model MRC44 Four Zone — Four Source Audio/Video Controller/Amplifier System	2002	Xantech Corporation
NexSys Software	1997	Crest Audio, Inc.
EPSON PowerLite 8300i	April 14, 2003	Seiko Epson Corporation
UPnP System	1999-2010	UPnP Forum
Epson PowerLite 735	2002	Seiko Epson Corporation

#### F. The '023 Patent

The following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '023 Patent:

#### Prior Art Patent Grant References

Patent Number	Reference Name	Filing Date	Issue Date	Prior Art Type
US55774016A	Ketterer	4/9/1996	6/30/1998	§§ 102(a), (b), (e)
US8024055B2	Holmgren	5/15/2004	9/20/2011	§§ 102(a), (b), (e)

US7308188	Namatame	9/30/2002	12/11/2007	§§ 102(a), (b), (e)
US6919771	Nakajima	9/25/2003	7/19/2005	§§ 102(a), (b), (e)
US5440644	Farinelli	4/15/1993	8/8/1995	§§ 102(a), (b), (e)
US8654995B2	Silber	4/19/2007	2/18/2014	§§ 102(a), (b), (e)
US7558635B1	Thiel	7/10/2002	7/7/2009	§§ 102(a), (b), (e)
US6535121	Matheny	4/6/2000	3/18/2003	§§ 102(a), (b), (e)
CN1598767A	Huang's 767	9/15/2004	3/23/2005	§§ 102(a), (b)
EP1517464A2	Craig	8/31/2004	3/23/2005	§§ 102(a), (b)
US3956591A	Gates	12/18/1974	5/11/1976	§§ 102(a), (b), (e)
US4105974A	Rogers	10/14/1975	8/8/1978	§§ 102(a), (b), (e)
US4306114A	Callahan	1/21/1980	12/15/1981	§§ 102(a), (b), (e)
US5182552A	Paynting	12/7/1990	1/26/1993	§§ 102(a), (b), (e)
US5625350A	Fukatsu	12/27/1994	4/29/1997	§§ 102(a), (b), (e)
US5875233A	Cox	2/18/1997	2/23/1999	§§ 102(a), (b), (e)
US6873862B2	Reshefsky	7/24/2004	3/29/2005	§§ 102(a), (b), (e)
US7161939B2	Israel	6/29/2001	1/9/2007	§§ 102(a), (b), (e)
US7472058B2	Tseng	12/28/2004	12/30/2008	§§ 102(a), (b), (e)
US7721032B2	Bushell	8/20/2007	5/18/2010	§§ 102(a), (b), (e)
US7761176B2	Ben-Yaacov	11/23/2004	7/20/2010	§§ 102(a), (b), (e)
US7945708B2	Ohkita	1/9/2009	5/17/2011	§§ 102(a), (b), (e)
US7995732B2	Koch	10/4/2007	8/9/2011	§§ 102(a), (b), (e)
US8041062B2	Cohen	11/21/2006	10/18/2011	§§ 102(a), (b), (e)
US8233029B2	Yoshida	2/28/2007	7/31/2012	§§ 102(a), (b), (e)
US7987294	Bryce	10/16/2007	7/26/2011	§§ 102(a), (b), (e)
US7853341	McCarty	2/20/2004	12/14/2010	§§ 102(a), (b), (e)
US7653344	Feldman	1/9/2004	1/26/2010	§§ 102(a), (b), (e)
US6487296	Allen	9/30/1998	11/26/2002	§§ 102(a), (b), (e)
US6324586	Johnson	9/17/1998	11/27/2001	§§ 102(a), (b), (e)
US6389139	Curtis	11/18/1997	5/14/2002	§§ 102(a), (b), (e)
US7302644	Holtz	4/15/2002	11/27/2007	§§ 102(a), (e)
US7324857	Goddard	4/19/2002	1/29/2008	§§ 102(a), (b), (e)
US8290173	Richenstein	1/22/2002	10/16/2012	§§ 102(a), (b), (e)
US7233769	Richenstein	10/30/2001	6/19/2007	§§ 102(a), (b), (e)
CN1886918	Richenstein	10/22/2004	12/27/2006	§§ 102(a), (b), (e)
US6987947	Richenstein	10/22/2003	1/17/2006	§§ 102(a), (b), (e)

**Prior Art Patent Publication References**

<b>Patent Publication Number</b>	<b>Reference Name</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Prior Art Type</b>
US2009/0124289A1	Nishida	11/10/2008	5/14/2009	§§ 102(a), (b), (e)
US2004/0185773A1	Gerber	3/18/2003	9/23/2004	§§ 102(a), (b), (e)
US2005/0154766A1	Huang '766	12/23/2004	7/14/2005	§§ 102(a), (b), (e)
US2006/0222186A1	Paige	4/5/2005	10/5/2006	§§ 102(a), (b), (e)
US2006/0259649A1	Hsieh	4/27/2006	11/16/2006	§§ 102(a), (b), (e)
US2007/0087686A1	Holm	10/18/2005	4/19/2007	§§ 102(a), (b), (e)
US2008/0205070A1	Osada	1/28/2008	8/28/2008	§§ 102(a), (b), (e)
US20080303947A1	Ohnishi	8/5/2008	12/11/2008	§§ 102(a), (b), (e)
US2010/0087089A1	Struthers	10/2/2009	4/8/2010	§§ 102(a), (b), (e)
US2011/0001632A1	Hohrorst	7/1/2009	1/6/2011	§§ 102(a), (b), (e)
WO2008/082350A1	Lundmark	12/20/2007	7/10/2008	§§ 102(a), (b), (e)
US2004/0014426	Moore	7/19/2002	1/22/2004	§§ 102(a), (b), (e)
US2002/0124097	Isely	12/29/2000	9/5/2002	§§ 102(a), (b), (e)
US2002/0112084	Deen	2/14/2001	8/15/2002	§§ 102(a), (b), (e)
US2003/0023411	Witmer	4/23/2001	1/30/2003	§§ 102(a), (b), (e)
US2002/0083342	Webb	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2002/0083172	Knowles I	5/5/2001	5/27/2002	§§ 102(a), (b), (e)
US2003/0046703	Knowles II	8/29/2001	3/6/2003	§§ 102(a), (b), (e)
US2009/0060219	Inohara I	8/27/2008	3/5/2009	§§ 102(a), (b), (e)
US2009/0169030	Inohara II	12/16/2008	7/2/2009	§§ 102(a), (b), (e)
US2004/0157555A1	Richenstein	1/8/2003	8/12/2004	§§ 102(a), (b), (e)
US 2001/0038392 A1	Humpleman	9/22/1997	11/8/2001	§§ 102(a), (b), (e)
US2002/0085725A1	Bizjak	11/29/2000	7/4/2002	§§ 102(a), (b), (g), (e)
US2002/0002039A1	Qureshey	3/12/2001	1/3/2002	§§ 102(a), (b), (g), (e)
US20030094093A1	Smith	5/4/2001	5/22/2003	§§ 102(a), (b), (e)
US2003/0100335	Gassho '335	11/26/2002	5/29/2003	§§ 102(a), (b), (e)
US2003/0212802A1	Rector	5/9/2002	11/13/2003	§§ 102(a), (b), (e)
US2004/0125964A1	Graham	12/31/2002	7/1/2004	§§ 102(a), (b), (e)
US8654995B2	Silber	4/19/2007	2/18/2014	§§ 102(a), (b), (e)
US2010/0325323A1	Barbe	9/28/2007	12/23/2010	§§ 102(a), (b), (e)

WO2002080012A1	Mushkin	3/27/2002	10/10/2002	§§ 102(a), (b), (e)
WO2005/041447A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
WO2009/058974A1	Coutinho	10/31/2007	5/7/2009	§§ 102(a), (b), (e)
AU2004307459B2	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)
CA2542735A1	Richenstein	10/22/2003	5/6/2005	§§ 102(a), (b), (e)

**Prior Art Printed Publications**

<b>Title</b>	<b>Publication Date</b>	<b>Author &amp; Publisher</b>	<b>Prior Art Type</b>
UPnP Standard	1999-2010	UPnP Forum	§§ 102(a), (b)
ProMatrix Digitally Matrixed Amplifier Model PM3180	1996	Bogen	§§ 102(a), (b)
Denon AV Surround Receiver AVR-1604/684 Operating Instructions	6/26/2003	Sound United LLC	§§ 102(a), (b)
Denon AV Surround Receiver AVR-5800 Operating Instructions	8/3/2000	Sound United LLC	§§ 102(a), (b)
Proficient Audio Systems M6 Quick Start Guide	1/27/2011	Proficient Audio Systems	§§ 102(a), (b)
Proficient Editor Advanced Programming Guide	5/9/2007	Proficient Audio Systems	§§ 102(a), (b)
Escient Fireball SE-D1 User's Manual	7/25/2006	D&M Holdings	§§ 102(a), (b)
Fireball Installation and User Guide	10/2023	D&M Holdings	§§ 102(a), (b)
Fireball Remote Control Guide	12/23/2003	D&M Holdings	§§ 102(a), (b)
Zpre2 Preamplifier	2008	Parasound	§§ 102(a), (b)
"Functional Overview Aios.w Networked Audio Platform"	5/11/2006	Avega Systems company	§§ 102(a), (b)
Home Director Installation and Service Manual, IBM	1998/6	International Business Corporation	§§ 102(a), (b)

Home Director Owner's Manual	2009/5	International Business Corporation	§§ 102(a), (b)
NexSys Software Manual	1997	Crest Audio, Inc.	§§ 102(a), (b)
EPSON PowerLite 8300i User's Guide	2005	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Quick Setup	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Information Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EPSON PowerLite 8300i Product Brochure	2003	Seiko Epson Corporation	§§ 102(a), (b)
EasyMP SetUp Guide	2003	Seiko Epson Corporation	§§ 102(a), (b)
EpsonNet 802.11b User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)
Epson PowerLite 735 User Guide	2002	Seiko Epson Corporation	§§ 102(a), (b)
Point and Shoot Profile version 1.1	March 20, 2000	Infrared Data Association	§§ 102(a), (b), (e)

**Prior Art Use, Sale, and/or Offer for Sale (§§ 102(a), (b))**

<b>Prior Art</b>	<b>Date</b>	<b>Person or Entity</b>
UPnP System	1999-2010	UPnP Forum
ProMatrix Digitally Matrixed Amplifier Model PM3180	1996	Bogen
Escient Fireball	2003/10 to 2006/7/25	D&M Holdings
Denon 1604	2000-2003	Sound United LLC
Avago System	Feb. 2003-May 2004	Avago Systems
M6	1/27/2011	Proficient Audio Systems
Zpre2 Preamplifier	2008	Parasound
RJP-201M Remote Jack Pack	2010	LG

“Auto-Sensing 4-Way Audio/Video Selector Switch”	2004	Radio Shack
AMP 100 User Manual	2003	AudioSource
High Definition AV AutoSelector	2008	Audio Authority
AXIS P8221 Network I/O Audio Module	2009	Axis Communication
Signal Sensing Audio Selector	2002	Audio Authority
Multi Channel AV Receiver	2007	Sony
M500	2009	Sony Ericsson
Aios Wireless Audio Platform	2005-2010	Avega Systems Company
Wireless Home Audio System	2008-2009	Cisco Systems, Inc.
S-Air System	2008	Sony, Inc.
Sonos System	August 2005 to April 17, 2010	Sonos, Inc.
Epson PowerLite 735	2002	Seiko Epson Corporation

#### **IV. THE ASSERTED CLAIMS ARE ANTICIPATED AND OBVIOUS**

Linkplay describes below whether each item of prior art (i) anticipates an Asserted Claim of the Asserted Patents, and/or (ii) renders obvious an Asserted Claim of the Asserted Patents in combination with another prior art reference or the knowledge of a person of ordinary skill in the relevant art at the time of the alleged invention.

To the extent that prior art identified by Linkplay as anticipating is found not to anticipate, Linkplay further contends the prior art establishes that the claimed subject matter was obvious to a person of ordinary skill in the art at the time of the alleged invention. In addition, obviousness is supported by the discussions in the cited references, the state of the art discussed in the references, and the knowledge of one of ordinary skill in the art as discussed below in Section VI.

While Linkplay has identified at least one citation per element or limitation for each

reference identified in the charts, each and every disclosure of the same element or limitation in the same reference is not necessarily identified. In an effort to focus the issues, Linkplay has cited exemplary relevant portions of identified references even where a reference may contain additional disclosures for a particular claim element or limitation. Linkplay reserves all rights to rely on other portions of the identified references to support its claims and defenses. Persons of ordinary skill in the art generally read a prior art reference as a whole and in the context of other publications and literature. Linkplay may rely on un-cited portions of the prior art references and on other publications and expert testimony to provide context and as aids to understanding and interpreting the portions of the prior art references that are cited. Disclosures relating to initial elements of dependent claims are disclosed in connection with the independent claims from which they depend.

Linkplay may also rely on un-cited portions of the prior art references, other publications, and the testimony of experts to establish that a person of ordinary skill in the art would have been motivated to modify or combine certain of the cited references or to have applied his or her general knowledge and common sense so as to render the claims obvious. Where Linkplay cites to a particular figure in a prior art reference, the citation should be understood to encompass, in addition to the figure itself, the caption and description of the figure, and any text relating to the figure. Similarly, where a cited portion of text refers to a figure, the citation should be understood to include the figure as well.

Linkplay may also rely upon persons identified as inventors of the patents and authors of the publications disclosed in the charts, as well as individuals identified in any of the parties' initial disclosures and discovery responses, and others as they become identified through further discovery, as prior inventors, as persons of ordinary skill in the art, or as persons having knowledge

of, or having previously used, publicly disclosed, published, offered for sale or sold, the alleged inventions claimed in the Asserted Patents. In addition, Linkplay may rely upon the facts as developed in discovery of prior invention or derivation of the alleged inventions claimed in the Asserted Patents. Discovery is ongoing and Linkplay continues to investigate and analyze the prior art. Linkplay reserves the right to supplement or amend these contentions based on the results of such investigation and analysis.

Linkplay may rely upon a subset of the cited references or all of the references depending upon the Court's claim construction and further investigation and discovery. In addition, because multiple claims may contain the same or similar elements, Linkplay may not have listed every reference that discloses a particular element in each instance of that element in the Asserted Claims. Accordingly, to provide disclosure for any given element, Linkplay reserves the right to rely upon any reference identified in the accompanying charts that disclose that element. Linkplay's contentions that the references, in various combinations, render certain Asserted Claims obvious under 35 U.S.C. § 103 are in no way an admission or suggestion that each reference does not independently anticipate the Asserted Claims under 35 U.S.C. § 102. With respect to certain claims, Linkplay provides the exemplary obviousness combinations in the alternative to their anticipation contentions in the event that Sonos identifies elements in one or more of the cited references that it believes are not present. Sonos has thus far not identified any limitation(s) that it believes are not present in any of the cited prior art references. If and when Sonos identifies any such elements, Linkplay reserves the right to identify other references and combinations that would have made it obvious to add the allegedly missing limitation to the disclosed device or its characteristics.

If Sonos challenges the combinations identified in the accompanying charts, Linkplay

reserves the right to supplement these invalidity contentions to substitute or add other references to combine and to identify reasons to combine particular references with one another with additional particularity.

**A. Accompanying Invalidity Contention Chart Exhibit Listings**

Where Linkplay cites to a particular document describing a prior art reference, the citation should be understood to be exemplary only. Where Linkplay cites to a particular figure, the citation should be understood to encompass, in addition to the figure itself, the caption and description of the figure, and any text relating to the figure. Similarly, where a cited portion of text refers to a figure, the citation should be understood to include the figure as well. In addition, citations necessarily include any contextual descriptions and disclosures in the reference.

In sections 1-5 below, Linkplay summarizes the prior arts' applicability to the asserted patents. The below referenced charts are organized according to individual elements and specific references to demonstrate the types of systems and materials that predated the asserted patents, but not to limit Linkplay to the charted citations and explanations. It should be understood that Linkplay is not limiting itself to the specific references or citations provided in the charts, and Linkplay reserves the right to rely on non-charted art which applies to the asserted elements in similar ways.

As shown below in, the asserted patents share principles and fields of technology and it should be understood that references charted for one patent may apply to other patents in a similar way. Accordingly, Linkplay reserves the right to supplement these contentions with additional charts, references, and explanations beyond those explicitly provided herein.

Due to the broken priority chain issues contended in II, the Asserted Claims of each Assert Patent are anticipated under 35 U.S.C. § 102 or at least rendered obvious under 35 U.S.C.

§ 103 by earlier publications in the same family that share the same disclosures as the Asserted Patents. These anticipation and obviousness grounds do not need detailed charts for Sonos to understand how the prior discloses the claim elements, and such grounds are therefore not charted.

Finally, on September 28, Sonos increased the number of asserted claims by 120. Dkt 107-108. Then between October 11-16, Sonos produced over 50,000 pages of documents including documents specifically relevant to the validity of the asserted patents. Based on the combined prejudice of 120 additional claims and Sonos' withholding of known materials until less than 3 weeks before the initial contentions were due, Linkplay reserves the right to supplement these contentions prior to the deadline for final infringement contentions.

### **1. *The '014 Patent***

- A1: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0072816A1 (“Shdema”)
- A2: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent No. US6469633 (“Wachter”)
- A3: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over EPSON PowerLite 8300i (“EPSON PowerLite”)
- A4: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0124097 (“Isely”)
- A5: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent No. US7295548B2 (“Blank I”)
- A6: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent No. US7324857 (“Goddard”)
- A7: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent No. US6826283B1 (“Wheeler”)
- A8: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent No. US5440644 (“Farinelli”)
- A9: Invalidity Claim Chart for '014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As

Invalid Under §102 and §103 Over Universal Plug and Play (“UPnP”)

- A10: Invalidity Claim Chart for ’014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent No. US 5,815,689 (“Shaw”)
- A11: Invalidity Claim Chart for ’014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2004/0157555A1 (“Richenstein”)
- A12: Invalidity Claim Chart for ’014 Patent Claims 1-5, 8-16, 18-26, 32-37, 38, and 41-44 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2004/0157555A1 (“Richenstein”) alone or in view of US2001/0038392A1 (“Humbleman”)

## **2. The ’532 Patent**

- B1: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent No. US 6,324,586 B1 (“Johnson”)
- B2: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over International Patent Application Publication No. WO2002080012A1 (“Mushkin”)
- B3: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent No. US5815689 (“Shaw”)
- B4: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0124097 (“Isely”)
- B5: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent No. US7295548B2 (“Blank I”)
- B6: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent No. US7324857 (“Goddard”)
- B7: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent No. US6826283B1 (“Wheeler”)
- B8: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent No. US5440644 (“Farinelli”)
- B9: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0194309A1 (“Carter”)
- B10: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent Application No. US 20030050989 (“Marinescu”)
- B11: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2004/0157555A1 (“Richenstein”)
- B12: Invalidity Claim Chart for ’532 Patent Claims 1-34 As Invalid Under §102 and §103 Over

U.S. Patent Application No. US2004/0157555A1 (“Richenstein”) alone or in view of US2001/0038392A1 (“Humpleman”)

### 3. *The '357 Patent*

- C1: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent No. US7263110 (“Fujishiro”)
- C2: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over EPSON PowerLite 8300i (“EPSON PowerLite”)
- C3: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0124097 (“Isely”)
- C4: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over Over U.S. Patent No. US7295548B2 (“Blank I”)
- C5: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent No. US7324857 (“Goddard”)
- C6: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over Universal Plug and Play (“UPnP”)
- C7: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent No. US7197148B2 & U. S. Patent Application No. US 2003/0063755 A1 (“Nourse”)
- C8: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0194309A1 (“Carter”)
- C9: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US 20030050989 (“Marinescu”)
- C10: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2004/0157555A1 (“Richenstein”)
- C11: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0085725A1 (“Bizjak”)
- C12: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0085725A1 (“Bizjak”) alone or in view of International Patent Application Publication No. WO2002080012A1 (“Mushkin”)
- C13: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0002039A1 (“Qureshey”)
- C14: Invalidity Claim Chart for '357 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0002039A1 (“Qureshey”) alone or in view of U.S. Patent No. US 6,324,586 B1 (“Johnson”)

#### 4. *The '883 Patent*

- D1: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. 2003/0212802 (“Rector”)
- D2: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent No. US7,532,86/U.S. Patent Application Publication No. US2003/0181203 (“Cheshire”)
- D3: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. US2003/0100335 (“Gassho '335”)
- D4: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application Publication US 2003/0091015 A1 (“Gassho '015”)
- D5: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over EPSON PowerLite 8300i (“EPSON PowerLite”)
- D6: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. US2003/0100335 (“Gassho '335”) alone or in view of U.S. Patent Application No. US2004/0157555A1 (“Richenstein”) or further in view of Request for Comments 793 (“RFC 793”)
- D7: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. 2003/0212802 (“Rector”) alone or in view of IEEE 802.15.1
- D8: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over EpsonNet 802.11b User’s Guide (“EpsonNet”), alone or in view of Epson PowerLite Product Information Guide (“Epson PowerLite”), further in view of IEEE 802.15.1
- D9: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over Epson PowerLite 735 User Guide (“PowerLite User Guide”), alone or in view of Epson PowerLite Product Information Guide (“Epson PowerLite Information Guide”), further in view of IEEE 802.15.1
- D10: Invalidity Claim Chart for '883 Patent Claims 1-20 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. 2002/0188656 (“Patton”)

#### 5. *The '023 Patent*

- E1: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent No. US5,774,016A (“Ketterer”)
- E2: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over US8024055B2 (“Holmgren”)

- E3: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. US20090124289A1 (“Nishida”)
- E4: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent US5440644 (“Farinelli”)
- E5: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent No. US7016266B2 (“Wang”)
- E6: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication US 2006/0083388 A1 (“Rothschild”)
- E7: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication US 2010/0325323 A1 (“Barbe”)
- E8: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. US 2008/0226101 A1 (“Silber”)
- E9: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. US 2007/0206829 A1 (“Weinans”)
- E10: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over EPSON PowerLite 8300i (“EPSON PowerLite”)
- E11: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2004/0157555A1 (“Richenstein”)
- E12: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication US 2010/0325323 A1 (“Barbe”) or further in view of U.S. Patent No. US7324857 (“Goddard”)
- E13: Invalidity Claim Chart for '023 Patent Claims 1-17 As Invalid Under §102 and §103 Over U.S. Patent Application Publication No. US 2008/0226101 A1 (“Silber”) alone or in view of U.S. Patent No. US8024055B2 (“Holmgren”)

#### **6. *The '498 Patent***

- G1: Invalidity Claim Chart for '532 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2004/0157555A1 (“Richenstein”)
- G2: Invalidity Claim Chart for '532 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over International Patent Application Publication No. WO2002080012A1 (“Mushkin”)
- G3: Invalidity Claim Chart for '498 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over U.S. Patent No. US 5,786,814 B1 (“Moran”)
- G4: Invalidity Claim Chart for '498 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over Media Oriented System Transport Specification v. 2.0 (“MOST”)

- G5: Invalidity Claim Chart for '498 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0085725A1 (“Bizjak”)
- G6: Invalidity Claim Chart for '498 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over U.S. Patent Application No. US2002/0124097 (“Isely”)
- G7: Invalidity Claim Chart for '498 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over U.S. Pat No. 6,353,174 B1 (“Schmidt”)
- G8: Invalidity Claim Chart for '498 Patent Claims 1-4, 6, 8-13, 15-17, 19, and 22 As Invalid Under §102 and §103 Over U.S. Patent No. 7,668,182 (“Hetzel”)

## V. ANTICIPATION UNDER 35 U.S.C. § 102

Section 102(a) provides that “[a] person shall be entitled to a patent unless . . . the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent . . . .” To be anticipatory, a reference must describe, either expressly or inherently, each and every limitation and enable one of skill in the art to practice an embodiment of the claimed invention without undue experimentation. *Stored Value Solutions, Inc. v. Card Activation Technologies, Inc.*, 2012 WL 6097674, at \*8 (Fed. Cir. 2012). A reference may anticipate inherently if a claim limitation that is not expressly disclosed “is necessarily present, or inherent, in the single anticipating reference.” *In re Aoyama*, 656 F.3d 1293, 1337 (Fed. Cir. 2011) (quoting *Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003)); *Akamai Technologies, Inc. v. Cable & Wireless Internet Services, Inc.*, 344 F.3d 1186, 1195 (Fed. Cir. 2003) (finding hierarchal DNS servers inherent in any Internet system).

Based on Linkplay’s present understanding of the Asserted Claims and the apparent constructions Sonos asserts based on its initial infringement contentions, the prior art references and systems listed in Section III and charted in the exhibits identified in Section IV identify items of prior art that anticipate at least one of the Asserted Claims. The charts identify where the elements of the Asserted Claims can be found in each item of prior art. To the extent a particular

charted reference does not disclose all or any portion of a particular claim element, such element would be inherent to one of ordinary skill in the art or, as explained below, it would be obvious to combine that charted reference with one or more other references listed herein to render the claim obvious.

Linkplay applies the prior art at least in part in light of Sonos's improper assertions of infringement and improper application of the claims. Linkplay does not agree with Sonos's application of the claims, or that the claims satisfy 35 U.S.C. § 112. Linkplay's Invalidity Contentions are not admissions or adoptions as to any particular claim scope or construction, or as any admission that any particular element is met in any particular way. Linkplay objects to any attempt to imply any particular claim construction from the attached charts. Linkplay's Invalidity Contentions are made in the alternative and do not necessarily represent Linkplay's agreement or view as to meaning, definiteness, written description support for, or enablement of any claim. Linkplay reserves the right to update these Invalidity Contentions once claim construction has taken place.

## **VI. OBVIOUSNESS UNDER 35 U.S.C. § 103**

In general, a claimed invention is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14 (1966). The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: “(1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness.” *Miles Labs., Inc. v.*

*Shandon, Inc.*, 997 F.2d 870, 877 (Fed. Cir. 1993). See also *Graham*, 383 U.S. at 17-18.

A claimed invention is obvious when a skilled artisan would have been motivated to combine the teaching of the prior art references to achieve the claimed invention, and the skilled artisan would have had a reasonable expectation of success in doing so. See, e.g., *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). “Any need or problem known in the field of endeavor at the time of the invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007). While an analysis of any teaching, suggestion, or motivation to combine elements from different prior art references is useful in an obviousness analysis, such analyses should not be rigidly applied; the overall inquiry must be expansive and flexible, and must include the common sense and ordinary creativity of a person having ordinary skill in the art as part of the analysis. *Id.* at 419-21.

**A. Scope And Content Of The Prior Art And Well-Known Elements In The Art**

Well before any of the asserted patents, wireless networking and wireless location area networks ("WLANs") had existed and been used decades. By at least the 1990s, for example, IEEE 802.11 standards development was well underway, including ways to setup devices on the network for secure communications and to use local networks to control media playback devices. The prior art identified above, as well as countless others Linkplay reserves the right to add moving forward, demonstrates how well-known the ideas described in the patents were.

Although IT professionals and even those with an elementary level of knowledge could set up commercial devices on secure wireless networks prior to the Asserted Patents, many devices already existed that did not require average consumers to have this knowledge, including home entertainment products that used wireless or wired Ethernet connections.

This is not surprising. Wireless home entertainment networks have long been an area of research and commercial development prior to the existence of Sonos, including the easy setup of these home networks. The prior art identified above and in the attached charts further demonstrate the widespread existence of companies, inventors, and products in this field that predate Sonos and its Asserted Patents.

Based on Linkplay's present understanding of the Asserted Claims, each of the prior art references standing alone renders at least one of the Asserted Claims obvious in view of the knowledge of a person or ordinary skill in the art as of the time of the alleged invention. It would have been obvious to one of ordinary skill in the art, applying nothing more than his own knowledge to modify the concepts of the prior art references discussed in Sections III and IV to include any of the well-known element in the art discussed below.

Further, Linkplay contends that the Asserted Claims are obvious, in part, because they merely arrange old elements, with each performing the same function that had been previously known, to perform and yield no more than what one having ordinary skill would expect from such an arrangement. Because there were a finite number of predictable solutions in the art at the time of the claimed inventions, it would have been obvious to a person having ordinary skill in the art to pursue the known options. A person skilled in the art of content delivery would have been familiar with all the claim limitations that the patentee used to distinguish the prior art during the prosecution of the Asserted Patents. The identified prior art references merely use those familiar elements for their primary or well-known purposes and in a manner well within the ordinary level of skill in the art. Accordingly, common sense and the knowledge of the prior art render the Asserted Claims invalid.

**1. '014 Patent**

The '014 Patent claims methods and controller devices relating to changing volume of

grouped devices. The claim elements include the well-known and non-inventive “display,” “network interface,” “input interface,” “audio data packets,” “processor,” “groups,” and “volume meter.”

**2. '532 Patent**

The '532 Patent claims methods, computer readable media, and controller devices relating to synchronized audio playback. The claim elements include the well-known and non-inventive “one or more processors,” “tangible, non-transitory, computer-readable memory,” “LAN,” “device clock,” “audio content,” and “playback timing.”

**3. '357 Patent**

The '357 Patent claims methods, computer readable media, and playback devices relating to synchronized audio playback. The claim elements include the well-known and non-inventive “one or more processors,” “tangible, non-transitory, computer-readable memory,” “LAN,” “network interface,” “device clock,” “audio content,” and “playback timing.”

**4. '498 Patent**

The '498 Patent claims systems relating to disengaging from and joining synchrony groups for synchronized audio playback. The claim elements include the well-known and non-inventive “one or more processors,” “tangible, non-transitory, computer-readable memory,” “LAN,” “network interface,” “device clock,” “audio content,” and “playback timing.”

**5. '883 Patent**

The '883 Patent claims methods, computer readable media, and playback devices relating to setup of the playback devices. The claim elements include the well-known and non-inventive “at least one processor,” “tangible, non-transitory, computer-readable memory,” “secure WLAN,” “network interface,” “setup mode,” “security key,” “SSID,” and “audio content.”

**6. '023 Patent**

The '023 Patent claims a playback device, computer readable media, and a method relating to source switching. The claim elements include the well-known and non-inventive “tangible, non-transitory computer readable media,” “encoded instructions,” “types of media content,” “line-in connectors,” “playing,” “pausing,” and “resuming.”

**B. Motivations to Combine**

To the extent Sonos argues that a piece of prior art does not disclose a limitation,

Linkplay reserves the right to rely on any combination of the prior art disclosed in these Invalidity Contentions, including the invalidity claim charts attached hereto and identified in Sections III and VI, the knowledge of those skilled in the art, and/or other prior art to show that it would have been obvious to include the allegedly missing limitation. The combinations and modifications of the prior art to invalidate the Asserted Claims would have arisen from ordinary innovation, ordinary skill, or common sense, or would have been obvious to try or otherwise predictable. In particular, it would have been obvious for a person of ordinary skill in the art to combine the teachings of the references identified in Sections III and VI and thereby obtain the alleged invention of the Asserted Claims for one or more of the following reasons: (1) the combination results from combining prior art elements according to known methods to yield predictable results, (2) the combination results from a simple substitution of one known element for another to obtain predictable results, (3) the combination results from the use of known techniques to improve similar methods in the same way, (4) the combination results from applying a known technique to a known method ready for improvement to yield predictable results, (5) the combination results from choosing a finite number of identified, predictable solutions, with a reasonable expectation of success, and therefore is obvious to try, (6) the combination results from known work in one field of endeavor prompting a variation of it for use in either the same field or a different one based on design incentives or other market forces and the variations would have been predictable to one of ordinary skill in the art, or (7) the combination results from using known techniques or solutions to address a problem addressed by the alleged invention or a problem that would be encountered by one of ordinary skill in the art working in the field.

Further, a person having ordinary skill would have been motivated to combine the

identified prior art based on the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. Design incentives and other market forces would have prompted those combinations and modifications. “When there is a design or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue known options within his or her technical grasp.” *KSR Int’l*, 127 S. Ct. at 1742. Moreover, some pieces of prior art refer to or discuss other pieces of prior art, illustrating the close technical relationship among the prior art. To the extent any piece of prior art refers to or discusses other pieces of prior art, either expressly or inherently, it would have been obvious to combine those pieces of prior art for that reason.

The Asserted Claims are obvious, in part, because they merely arrange old elements, with each performing the same function that had been known, to perform and yield no more than what one of ordinary skill would expect from such an arrangement. Because there were a finite number of predictable solutions in the art of delivering content in response to a request, it would have been obvious to a person of ordinary skill in the art to pursue the known options. The identified prior art references merely use those familiar elements for their primary or well-known purposes and in a manner well within the ordinary level of skill in the art. Accordingly, common sense and the knowledge of the prior art render the Asserted Claims invalid as well.

Additionally, a person having ordinary skill in the art would have been motivated to combine these references because these references are related to common objectives and subject matter. The references also share commonalities in terms of their general subject matter as well as the types of equipment, products, and approaches used.

Moreover, the prior art references explicitly or implicitly reference other prior art references, share common authors or inventors, were published in the same journals, were

presented at the same conferences, or were developed at common companies, educational or research institutions, or other organizations, all of which would motivate one of skill in the art to combine the references. In addition, the references, and any products, devices, or processes described in the references, existed or were invented in the same time period, providing further motivation for combination.

As motivation to combine, including the related definition of POSITA, is often a subject of expert opinions, Linkplay's investigation regarding motivation to combine is ongoing, and Linkplay reserves the right to supplement its contentions regarding the same as discovery progresses, additional research is conducted, and/or evidence is discovered.

### **C. The '014 Patent**

As further explained below and in Exhibits A1-A12 the following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '014 Patent. Some of the charts attached hereto include exemplary citations to additional prior art that may be combined with the charted reference. Linkplay contends that any charted reference may be combined with elements from any other charted reference and/or with well-known elements in the art, to the extent Sonos asserts that any reference fails to disclose any limitation, for the reasons discussed above and in the charts themselves.

#### **1. *Chart A1-Shdema***

The chart attached hereto as Exhibit A1 provides examples of where Shdema discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Shdema does not anticipate or alone render obvious the

Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Shdema to combine or modify Shdema in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Shdema does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Shdema to include that well-known element or combine Shdema with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, a desire to improve the ability of a user to control the system, efficiency of control, and more specific ways to control the parameters of the control data. A POSITA would be expected to make such simple and conventional steps with confidence of their success, because Shdema specifically directs the reader to do so. Specifically, Shdema points to improving the present invention by combining it with other conventional networking control systems. "It is noted that the present invention can make further use of conventional networking protocols Such as Ethernet, ATM, and the like, for conveying control data between the network devices and the audio management System." Shdema, [0029].

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Shdema does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

## **2. *Chart A2- Wachter***

The chart attached hereto as Exhibit A2 provides examples of where Wachter discloses,

either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Wachter does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Wachter to combine or modify Wachter in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Wachter does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Wachter to include that well-known element or combine Wachter with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, simplifying the user interface, enabling more precise control, and improving the user experience. A POSITA would be expected to make such simple and conventional steps to further Wachter's goals for improving the user experience. Specifically, Wachter expresses concern for the user becoming confused by complicated interfaces, inconvenienced by rigid control options, and fail to provide the control they need. Wachter, 1:36-13. Wachter further emphasizes the need for simplicity of set-up and adaptability as aspects of importance, which a POSITA may seek to strengthen by looking to other references. Wachter, 3:14-17.

Wachter further describes that its teachings are not limited to the disclosure itself and that it recommends applying the art in ways not expressly described including, for exempla, to speakers and media networks:

The foregoing prototype illustrates the construction and use of the invention, but the system and methodology of the invention are adaptable to a wide range of component configurations. Other devices which have any form of remote control can be similarly controlled, as for example X-10 power line devices and security systems, telephony systems, lighting controllers, motorized electronic devices such as window coverings, speakers, and projection screens, or

electronic relay systems.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles as that various modifications, alternate constructions, and equivalents will occur to those skilled in the art given the benefit of this disclosure. Thus, the invention is not limited to the specific embodiment described herein, but is defined by the appended claims.<sup>4</sup>

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Wachter does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

### **3. *Chart A3-Epson PowerLite***

The chart attached hereto as Exhibit A3 provides examples of where Epson PowerLite discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Epson PowerLite does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Epson PowerLite to combine or modify Epson PowerLite in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Epson PowerLite does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Epson PowerLite to include that well-known element or combine Epson PowerLite with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example,

---

<sup>4</sup> Wachter, 7:35-64.

providing more connectivity, more input options, and simplifying the interface. A POSITA would be expected to make such simple and conventional steps to further Epson's advertised goals for of "convenient networking," "easy-to-use control/control panel," and "future digital connectivity/compatibility." Epson PowerLite, Produce Brochure at 1. This would further Epson America Inc.'s stated goals of being a "supplier of high-quality technology products that meet customer demands for increased functionality, compactness, systems integration and energy efficiency."<sup>5</sup>

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Epson PowerLite does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

#### 4. *Chart A4- Isely*

The chart attached hereto as Exhibit A2 provides examples of where Isely discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Isely does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Isely to combine or modify Isely in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Isely does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Isely to include that well-known

---

<sup>5</sup> [Epson PowerLite 7800p, 8300i projectors - ProjectorCentral News - April 14, 2003](#)

element or combine Isely with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Isely's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Isely does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

#### **5. *Chart A5- Blank I***

The chart attached hereto as Exhibit A5 provides examples of where Blank I discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Blank I does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Blank I to combine or modify Blank I in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Blank I does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Blank I to include that well-known element or combine Blank I with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Blank I's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Blank I does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

#### **6. *Chart A6- Goddard***

The chart attached hereto as Exhibit A5 provides examples of where Goddard discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Goddard does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Goddard to combine or modify Goddard in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Goddard does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Goddard to include that well-known element or combine Goddard with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function

for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Goddard's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Goddard does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

#### **7. *Chart A7- Wheeler***

The chart attached hereto as Exhibit A5 provides examples of where Wheeler discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Wheeler does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Wheeler to combine or modify Wheeler in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Wheeler does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Wheeler to include that well-known element or combine Wheeler with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Wheeler's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Wheeler does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

**8. *Chart A8- Farinelli***

The chart attached hereto as Exhibit A5 provides examples of where Farinelli discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Farinelli does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Farinelli to combine or modify Farinelli in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Farinelli does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Farinelli to include that well-known element or combine Farinelli with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Farinelli's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and

predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Farinelli does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

**9. *Chart A9- UPnP***

The chart attached hereto as Exhibit A5 provides examples of where UPnP discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that UPnP does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by UPnP to combine or modify UPnP in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that UPnP does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify UPnP to include that well-known element or combine UPnP with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of UPnP's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with

additional positions on obviousness in response to any allegation by Sonos that UPnP does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

**10. *Chart A10- Shaw***

The chart attached hereto as Exhibit A10 provides examples of where Shaw discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Shaw does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Shaw to combine or modify Shaw in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Shaw does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Shaw to include that well-known element or combine Shaw with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Shaw's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Shaw does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

**11. *Chart A11- Richenstein***

The chart attached hereto as Exhibit A11 provides examples of where Richenstein discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Richenstein does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Richenstein to combine or modify Richenstein in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Richenstein does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Richenstein's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

**12. *Chart A12- Richenstein in view of Humpleman***

The chart attached hereto as Exhibit A12 provides examples of where Richenstein

discloses, either expressly or inherently, or renders obvious in view of Humpleman's teachings, each limitation of the Asserted Claims of the '014 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Richenstein does not anticipate or alone render obvious the Asserted Claims of the '014 Patent, it would have been obvious to a POSITA by Richenstein to combine or modify Richenstein in view of a POSITA's knowledge well known practices at the time and the teaches of Humpleman. Further, to the extent Sonos asserts that Richenstein does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Richenstein's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '014 Patent.

#### **D. The '532 Patent**

As further explained below and in Exhibits B1-B12 the following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted

Claims of the '532 Patent. Some of the charts attached hereto include exemplary citations to additional prior art that may be combined with the charted reference. Linkplay, however, contends that any charted reference may be combined with elements from any other charted reference and/or with well-known elements in the art, to the extent Sonos asserts that any reference fails to disclose any limitation, for the reasons discussed above and in the charts themselves.

**1. *Chart B1- Johnson***

The chart attached hereto as Exhibit B1 provides examples of where Johnson discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Johnson does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Johnson to combine or modify Johnson in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Johnson does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Johnson to include that well-known element or combine Johnson with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Johnson's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and

predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Johnson does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

## **2. *Chart B2- Mushkin***

The chart attached hereto as Exhibit B2 provides examples of where Mushkin discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Mushkin does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Mushkin to combine or modify Mushkin in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Mushkin does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Mushkin to include that well-known element or combine Mushkin with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Mushkin's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with

additional positions on obviousness in response to any allegation by Sonos that Mushkin does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

### 3. *Chart B3- Shaw*

The chart attached hereto as Exhibit B3 provides examples of where Shaw discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Shaw does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Shaw to combine or modify Shaw in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Shaw does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Shaw to include that well-known element or combine Shaw with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Shaw's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Shaw does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

**4. *Chart B4- Isely***

The chart attached hereto as Exhibit B4 provides examples of where Isely discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Isely does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Isely to combine or modify Isely in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Isely does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Isely to include that well-known element or combine Isely with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Isely's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Isely does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

**5. *Chart B5- Blank I***

The chart attached hereto as Exhibit B5 provides examples of where Blank I discloses,

either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Blank I does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Blank I to combine or modify Blank I in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Blank I does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Blank I to include that well-known element or combine Blank I with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Blank I's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Blank I does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **6. *Chart B6- Goddard***

The chart attached hereto as Exhibit B6 provides examples of where Goddard discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Goddard does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Goddard to combine or modify Goddard in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Goddard does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Goddard to include that well-known element or combine Goddard with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Goddard's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Goddard does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **7. *Chart B7- Wheeler***

The chart attached hereto as Exhibit B7 provides examples of where Wheeler discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Wheeler does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Wheeler to

combine or modify Wheeler in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Wheeler does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Wheeler to include that well-known element or combine Wheeler with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Wheeler's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Wheeler does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **8. *Chart B8- Farinelli***

The chart attached hereto as Exhibit B8 provides examples of where Farinelli discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Farinelli does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Farinelli to combine or modify Farinelli in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Farinelli does not disclose any well-known

elements in the claim limitations, it would have also been obvious to modify Farinelli to include that well-known element or combine Farinelli with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Farinelli's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Farinelli does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **9. *Chart B9- Carter***

The chart attached hereto as Exhibit B9 provides examples of where Carter discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Carter does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Carter to combine or modify Carter in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Carter does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Carter to include that well-known element or combine Carter with any reference identified in Section III that discloses that

well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Carter's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Carter does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **10. *Chart B10- Marinescu***

The chart attached hereto as Exhibit B10 provides examples of where Marinescu discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Marinescu does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Marinescu to combine or modify Marinescu in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Marinescu does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Marinescu to include that well-known element or combine Marinescu with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example,

providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Marinescu's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Marinescu does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **11. *Chart B11- Richenstein***

The chart attached hereto as Exhibit B11 provides examples of where Richenstein discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Richenstein does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Richenstein to combine or modify Richenstein in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Richenstein does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps

to further the applicability of Richenstein's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

**12. *Chart B12- Richenstein in view of Humpleman***

The chart attached hereto as Exhibit B12 provides examples of where Richenstein discloses, either expressly or inherently, or renders obvious in view of Humpleman's teachings, each limitation of the Asserted Claims of the '532 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Richenstein does not anticipate or alone render obvious the Asserted Claims of the '532 Patent, it would have been obvious to a POSITA by Richenstein to combine or modify Richenstein in view of a POSITA's knowledge well known practices at the time and the teaches of Humpleman. Further, to the extent Sonos asserts that Richenstein does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Richenstein's teachings.

As a result, well-known and conventional modifications would have also been a result of

ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '532 Patent.

#### **E. The '357 Patent**

As further explained below and in Exhibits C1-C14, the following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '357 Patent. Some of the charts attached hereto include exemplary citations to additional prior art that may be combined with the charted reference. Linkplay, however, contends that any charted reference may be combined with elements from any other charted reference and/or with well-known elements in the art, to the extent Sonos asserts that any reference fails to disclose any limitation, for the reasons discussed above and in the charts themselves.

##### **1. Chart C1- Fujishiro**

The chart attached hereto as Exhibit C1 provides examples of where Fujishiro discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Fujishiro does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Fujishiro to combine or modify Fujishiro in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Fujishiro does not disclose any well-known

elements in the claim limitations, it would have also been obvious to modify Fujishiro to include that well-known element or combine Fujishiro with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Fujishiro's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Fujishiro does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

## **2. *Chart C2- EPSON PowerLite***

The chart attached hereto as Exhibit C2 provides examples of where EPSON PowerLite discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that EPSON PowerLite does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by EPSON PowerLite to combine or modify EPSON PowerLite in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that EPSON PowerLite does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify EPSON PowerLite to include that well-known element or combine EPSON

PowerLite with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of EPSON PowerLite's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that EPSON PowerLite does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

### **3. *Chart C3- Isely***

The chart attached hereto as Exhibit C3 provides examples of where Isely discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Isely does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Isely to combine or modify Isely in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Isely does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Isely to include that well-known element or combine Isely with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example,

providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Isely's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Isely does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

#### **4. *Chart C4- Blank I***

The chart attached hereto as Exhibit C4 provides examples of where Blank I discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Blank I does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Blank I to combine or modify Blank I in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Blank I does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Blank I to include that well-known element or combine Blank I with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps

to further the applicability of Blank I's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Blank I does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

#### **5. *Chart C5- Goddard***

The chart attached hereto as Exhibit C5 provides examples of where Goddard discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Goddard does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Goddard to combine or modify Goddard in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Goddard does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Goddard to include that well-known element or combine Goddard with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Goddard's teachings.

As a result, well-known and conventional modifications would have also been a result of

ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Goddard does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

**6. *Chart C6- UPnP***

The chart attached hereto as Exhibit C6 provides examples of where UPnP discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that UPnP does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by UPnP to combine or modify UPnP in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that UPnP does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify UPnP to include that well-known element or combine UPnP with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of UPnP's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that UPnP does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

**7. *Chart C7- Nourse***

The chart attached hereto as Exhibit C7 provides examples of where Nourse discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Nourse does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Nourse to combine or modify Nourse in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Nourse does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Nourse to include that well-known element or combine Nourse with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Nourse's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Nourse does not

disclose one or more limitations of the Asserted Claims of the '357 Patent.

**8. *Chart C8- Carter***

The chart attached hereto as Exhibit C8 provides examples of where Carter discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Carter does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Carter to combine or modify Carter in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Carter does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Carter to include that well-known element or combine Carter with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Carter's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Carter does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

**9. *Chart C9- Marinescu***

The chart attached hereto as Exhibit C9 provides examples of where Marinescu discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Marinescu does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Marinescu to combine or modify Marinescu in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Marinescu does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Marinescu to include that well-known element or combine Marinescu with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Marinescu's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Marinescu does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

#### **10. *Chart C10- Richenstein***

The chart attached hereto as Exhibit C10 provides examples of where Richenstein discloses, either expressly or inherently, or renders obvious from its teachings, each limitation

of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Richenstein does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Richenstein to combine or modify Richenstein in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Richenstein does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Richenstein's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

#### **11. *Chart C11- Bizjak***

The chart attached hereto as Exhibit C11 provides examples of where Bizjak discloses, either expressly or inherently, or renders obvious in view of its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Bizjak does not anticipate or alone render obvious the

Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Bizjak to combine or modify Bizjak in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Bizjak does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Bizjak to include that well-known element or combine Bizjak with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Bizjak's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Bizjak does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

#### **12. *Chart C12- Bizjak in view of Mushkin***

The chart attached hereto as Exhibit C12 provides examples of where Bizjak discloses, either expressly or inherently, or renders obvious in view of its teachings and the teachings of Mushkin, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Bizjak does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Bizjak to

combine or modify Bizjak in view of a POSITA's knowledge well known practices at the time and the teachings of Mushkin. Further, to the extent Sonos asserts that Bizjak does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Bizjak to include that well-known element or combine Bizjak with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Bizjak's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Bizjak does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

### **13. *Chart C13- Qureshey***

The chart attached hereto as Exhibit C13 provides examples of where Qureshey discloses, either expressly or inherently, or renders obvious in view of its teachings, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Qureshey does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Qureshey to combine or modify Qureshey in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Qureshey does not disclose any well-known

elements in the claim limitations, it would have also been obvious to modify Qureshey to include that well-known element or combine Qureshey with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Qureshey's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Qureshey does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

#### **14. *Chart C14- Qureshey in view of Johnson***

The chart attached hereto as Exhibit C14 provides examples of where Qureshey discloses, either expressly or inherently, or renders obvious in view of its teachings and the teachings of Johnson, each limitation of the Asserted Claims of the '357 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Qureshey does not anticipate or alone render obvious the Asserted Claims of the '357 Patent, it would have been obvious to a POSITA by Qureshey to combine or modify Qureshey in view of a POSITA's knowledge well known practices at the time and the teachings of Johnson. Further, to the extent Sonos asserts that Qureshey does not disclose any well-known elements in the claim limitations, it would have also been obvious to

modify Qureshey to include that well-known element or combine Qureshey with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Qureshey's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Qureshey does not disclose one or more limitations of the Asserted Claims of the '357 Patent.

## **B. The '883 Patent**

As further explained below and in Exhibits D1-D10, the following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '883 Patent. Some of the charts attached hereto include exemplary citations to additional prior art that may be combined with the charted reference. Linkplay contends that any charted reference may be combined with elements from any other charted reference and/or with well-known elements in the art, to the extent Sonos asserts that any reference fails to disclose any limitation, for the reasons discussed above and in the charts themselves.

### **1. U.S. Patent App. Pub. No. 2003/0212802 ("Rector")**

The chart attached hereto as Exhibit D1 provides examples of where Rector discloses,

either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Rector does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Rector in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Rector does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Rector to include that well-known element or combine Rector with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Rector does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**2. U.S. Patent No. 7,532,862/ U.S. Patent App. Pub. No. 2003/0181203  
("Cheshire")**

The chart attached hereto as Exhibit D2 provides examples of where Cheshire discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Cheshire does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Cheshire in view of any of the

references identified in Section III. Further, to the extent Sonos asserts that Cheshire does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Cheshire to include that well-known element or combine Cheshire with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Cheshire does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

### **3. U.S. Patent App. Pub. No. 2003/0100335 (“Gassho ’335”)**

The chart attached hereto as Exhibit D3 provides examples of where Gassho ’335 discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Gassho ’335 does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Gassho ’335 in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Gassho ’335 does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Gassho ’335 to include that well-known element or combine Gassho ’335 with any reference identified in Section III

that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Gassho '335 does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

#### **4. U.S. Patent App. Pub. No. 2003/0091015 (“Gassho '015”)**

The chart attached hereto as Exhibit D4 provides examples of where Gassho '015 discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Gassho '015 does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Gassho '015 in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Gassho '015 does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Gassho '015 to include that well-known element or combine Gassho '015 with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network

configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Gassho '015 does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

#### **5. EPSON PowerLite 8300i (“EPSON PowerLite”)**

The chart attached hereto as Exhibit D5 provides examples of where EPSON PowerLite discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that EPSON PowerLite does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify EPSON PowerLite in view of any of the references identified in Section III. Further, to the extent Sonos asserts that EPSON PowerLite does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify EPSON PowerLite to include that well-known element or combine EPSON PowerLite with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that EPSON

PowerLite does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**6. US2003/0100335 (“Gassho ’335”) alone or in view of U.S. Patent US2004/0157555A1 (“Richenstein”) alone or further in view of Request for Comments 793 (“RFC 793”)**

The chart attached hereto as Exhibit D6 provides examples of where U.S. Patent Application Publication No. US2003/0100335 (“Gassho ’335”) alone or in view of U.S. Patent Application No. US2004/0157555A1 (“Richenstein”) or further in view of Request for Comments 793 (“RFC 793”) render the claims of the '883 Patent obvious.

To the extent Sonos asserts that Gassho '335 does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Gassho '335 in view of Richenstein and or RFC 793. Further, to the extent Sonos asserts that Gassho '335 does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Gassho '335 to include that well-known element or combine Gassho '335 with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

As a further example, the teachings of Gassho '335 provide a way of connecting devices to secure networks even if they do not have a robust user interface with which to set-up or enter cumbersome connection requirements that meet secure network standards. It would have been obvious for someone to recognize this application to the teachings of Richenstein where the disclosures describe networks of audio devices, including those where the device has

minimal or even no user interface at all. Richenstein explains that using a controller device to provide settings can allow the user to provide even these limited network devices with individualized settings. It would have been obvious that Richenstein's teachings of limited devices receiving settings would be a perfect application of Gassho '335's teachings for how to add devices to a secure network. Both Richenstein and Gasho '335 further describe that the ease of the user is an important design consideration, which would have rendered aspects like fault tolerance to take on importance. RFC 793 describes an exemplary common fault correction mechanism of retransmitting data with it has not been acknowledged as received by the recipient. It would have been obvious to incorporate such an application in the teachings of Gassho '335 and Richenstein, even if it were not inherent to their descriptions and standard protocols to begin with.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Gassho '335, Richenstein, or RFC 793 do not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**7. US2003/0212802 ("Rector") alone or in view of IEEE 802.15.1**

The chart attached hereto as Exhibit D7 provides examples of where U.S. Patent Application Publication No. U.S. Patent Application Publication No. 2003/0212802 ("Rector") alone or in view of IEEE 802.15.1 render the claims of the '883 Patent obvious.

To the extent Sonos asserts that Rector does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Rector in view of IEEE 802.15.1. Further, to the extent Sonos asserts that Rector does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Rector to include that well-known element or combine Rector

with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Rector describes a way of easy the connection process by allowing configurations to be done on a remote device, and such designs would have rendered aspects like fault tolerance to take on importance. IEEE 802.15.1 describes an exemplary common fault correction mechanism of retransmitting data with it has not been acknowledged as received by the recipient. It would have been obvious to incorporate such an application in the teachings of Rector, even if it were not inherent to the descriptions and standard protocols to begin with.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Rector or IEEE does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**8. EpsonNet 802.11b User's Guide ("EpsonNet"), alone or in view of Epson PowerLite Product Information Guide ("Epson PowerLite"), further in view of IEEE 802.15.1**

The chart attached hereto as Exhibit D8 provides examples of where EpsonNet discloses, either expressly or inherently, or in view of either or both of Epson PowerLite and IEEE, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that EpsonNet does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify EpsonNet in view of any of the references identified in Section III. Further, to the extent Sonos asserts that EpsonNet does not

disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify EpsonNet to include that well-known element or combine EpsonNet with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

For example, EpsonNet describes a print server that is used to connect devices that are not easily connected to secure networks by first connecting the device to a PC and then subsequently configuring the print server using a PC utility. It would have been readily obvious for someone reading how this can be used to connect to Epson's print servers that it could also be applied to Epson's other products, including the projector described in the PowerLite Product Information Guide. It would have been apparent that the print server utility and the various options for configuring the projector on a PC could use the same methods for securing the projectors on a protected network. Each of these products and publications describe applications of standard internet protocols, which indicates that common teachings of retransmission as a fault tolerance means would have been readily compatible and available to apply to either or both of the disclosures.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that EpsonNet does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**9. Epson PowerLite 735 User's Guide ("Powerlite User Guide"), alone or in view of Epson PowerLite Product Information Guide ("PowerLite Information Guide"), further in view of IEEE 802.15.1**

The chart attached hereto as Exhibit D9 provides examples of where PowerLite User Guide discloses, either expressly or inherently, or in view of either or both of PowerLite Information Guide and IEEE, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that PowerLite User Guide does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify PowerLite User Guide in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Epson PowerLite User Guide does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify PowerLite User Guide to include that well-known element or combine PowerLite User Guide with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

For example, Epson PowerLite User Guide describes a network projector. It would have been readily obvious for someone reading how this can be used to connect to Epson's PowerLite 735 according to the PowerLite User Guide to consider other Epson PowerLite information materials, including the descriptions in the PowerLite Product Information Guide and basic networking standards common at the time.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with

additional positions on obviousness in response to any allegation by Sonos that Epson PowerLite does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**10. US20020188656A1 (“Patton”)**

The chart attached hereto as Exhibit D10 provides examples of where Patton discloses, either expressly or inherently each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Patton does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Patton in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Patton does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Patton to include that well-known element or combine Patton with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the efficiency and convenience to add a new network device to a wireless network without requiring the user of the network device to understand the complicated network configurations. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Patton does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**C. The '023 Patent**

As further explained below and in Exhibits E1-E13, the following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject

matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '023 Patent. Some of the charts attached hereto include exemplary citations to additional prior art that may be combined with the charted reference. Linkplay, however, contends that any charted reference may be combined with elements from any other charted reference and/or with well-known elements in the art, to the extent Sonos asserts that any reference fails to disclose any limitation, for the reasons discussed above and in the charts themselves.

**1. U.S. Patent App. Pub. No. 2003/0091015 (“Ketterer”)**

The chart attached hereto as Exhibit E1 provides examples of where Ketterer discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Ketterer does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Ketterer in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Ketterer does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Ketterer to include that well-known element or combine Ketterer with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Ketterer does not

disclose one or more limitations of the Asserted Claims of the '883 Patent.

## **2. US8024055B2 (“Holmgren”)**

The chart attached hereto as Exhibit E2 provides examples of where Holmgren discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Holmgren does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Holmgren in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Holmgren does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Holmgren to include that well-known element or combine Holmgren with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Holmgren does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

## **3. U.S. Patent Application Publication No. US20090124289A1 (“Nishida”)**

The chart attached hereto as Exhibit E3 provides examples of where Nishida discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Nishida does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Nishida in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Nishida does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Nishida to include that well-known element or combine Nishida with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Nishida does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

#### **4. U.S. Patent US5440644 (“Farinelli”)**

The chart attached hereto as Exhibit E4 provides examples of where Farinelli discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Farinelli does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Farinelli in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Farinelli does not disclose a claim limitation which constitutes a well-known element in the field identified in Section III, it would have also been obvious to modify Farinelli to include that well-known

element or combine Farinelli with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Farinelli does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

#### **5. U.S. Patent No. US7016266B2 (“Wang”)**

The chart attached hereto as Exhibit E5 provides examples of where Wang discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Wang does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Wang in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Wang does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Wang to include that well-known element or combine Wang with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common

sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Wang does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**6. U.S. Patent Application Publication US 2006/0083388 A1 (“Rothschild”)**

The chart attached hereto as Exhibit E6 provides examples of where Rothschild discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Rothschild does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Rothschild in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Rothschild does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Rothschild to include that well-known element or combine Rothschild with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Rothschild does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**7. U.S. Patent Application Publication US 2010/0325323 A1 (“Barbe”)**

The chart attached hereto as Exhibit E7 provides examples of where Barbe discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Barbe does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Barbe in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Barbe does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Barbe to include that well-known element or combine Barbe with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Barbe does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

#### **8. U.S. Patent Application Publication No. US 2008/0226101 AI (“Silber”)**

The chart attached hereto as Exhibit E8 provides examples of where Silber discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Silber does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Silber in view of any of the

references identified in Section III. Further, to the extent Sonos asserts that Silber does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Silber to include that well-known element or combine Silber with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Silber does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**9. U.S. Patent Application Publication No. US 2007/0206829 A1  
("Weinans")**

The chart attached hereto as Exhibit E9 provides examples of where Weinans discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Weinans does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Weinans in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Weinans does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Weinans to include that well-known element or combine Weinans with any reference identified in Section III that discloses that

well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Weinans does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

#### **10. EPSON PowerLite 8300i (“EPSON PowerLite”)**

The chart attached hereto as Exhibit E10 provides examples of where EPSON PowerLite discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that EPSON PowerLite does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify EPSON PowerLite in view of any of the references identified in Section III. Further, to the extent Sonos asserts that EPSON PowerLite does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify EPSON PowerLite to include that well-known element or combine EPSON PowerLite with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that EPSON PowerLite does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**11. U.S. Patent Application No. US2004/0157555A1 (“Richenstein”)**

The chart attached hereto as Exhibit E11 provides examples of where Richenstein discloses, either expressly or inherently, each limitation of the Asserted Claims of the '883 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Richenstein does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Richenstein in view of any of the references identified in Section III. Further, to the extent Sonos asserts that Richenstein does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**12. *US2010/0325323 A1 (“Barbe”) or further in view of US7324857 (“Goddard”)***

The chart attached hereto as Exhibit E12 provides examples of where Barbe discloses,

either expressly or inherently, or suggests alone or in view of Goddard, each limitation of the Asserted Claims of the '883 Patent, thereby rendering those claims obvious.

To the extent Sonos asserts that Barbe does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Barbe in view of any of the references identified in Section III including Goddard. Further, to the extent Sonos asserts that Barbe does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Barbe to include that well-known element or combine Barbe with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Barbe does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

**13. *US2008/0226101 A1 (“Silber”) alone or in view of US8024055B2 (“Holmgren”)***

The chart attached hereto as Exhibit E13 provides examples of where Silber discloses, either expressly or inherently, or suggests alone or in view of Holmgren, each limitation of the Asserted Claims of the '883 Patent, thereby rendering those claims obvious.

To the extent Sonos asserts that Silber does not anticipate the Asserted Claims of the '883 Patent, it would have been obvious to combine or modify Silber in view of any of the references identified in Section III including Holmgren. Further, to the extent Sonos asserts

that Barbe does not disclose a claim limitation which constitutes a well-known element in the field identified in Section VI.A, it would have also been obvious to modify Silber to include that well-known element or combine Silber with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, improve the convenience and ease of use to switch between different types of media. These modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Silber does not disclose one or more limitations of the Asserted Claims of the '883 Patent.

## **B. The '498 Patent**

As further explained below and in Exhibits G1-G8 the following prior art references, and any products, devices, or methods known or used in the prior art that embody the subject matter disclosed in those prior art references, anticipate and/or render obvious the Asserted Claims of the '498 Patent. Some of the charts attached hereto include exemplary citations to additional prior art that may be combined with the charted reference. Linkplay, however, contends that any charted reference may be combined with elements from any other charted reference and/or with well-known elements in the art, to the extent Sonos asserts that any reference fails to disclose any limitation, for the reasons discussed above and in the charts themselves.

### **1. *Exhibit G1- Richenstein***

The chart attached hereto as Exhibit G1 provides examples of where Richenstein discloses, either expressly or inherently, or renders obvious from its teachings, each limitation

of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Johnson does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Richenstein to combine or modify Richenstein in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Richenstein does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Richenstein to include that well-known element or combine Richenstein with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Richenstein's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Richenstein does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

## **2. *Exhibit G2- Mushkin***

The chart attached hereto as Exhibit G2 provides examples of where Mushkin discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Mushkin does not anticipate or alone render obvious the

Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Mushkin to combine or modify Mushkin in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Mushkin does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Mushkin to include that well-known element or combine Mushkin with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Mushkin's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Mushkin does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

### **3. *Exhibit G3- Moran***

The chart attached hereto as Exhibit G3 provides examples of where Moran discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Moran does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Moran to combine or modify Moran in view of a POSITA's knowledge well known practices at the time.

Further, to the extent Sonos asserts that Moran does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Moran to include that well-known element or combine Moran with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Moran's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Moran does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

#### **4. *Exhibit G4- MOST***

The chart attached hereto as Exhibit G4 provides examples of where MOST discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that MOST does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by MOST to combine or modify MOST in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that MOST does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify MOST to include that well-

known element or combine MOST with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of MOST's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that MOST does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

#### **5. *Exhibit G5- Bizjak***

The chart attached hereto as Exhibit G5 provides examples of where Bizjak discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Bizjak does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Blank I to combine or modify Bizjak in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Bizjak does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Bizjak to include that well-known element or combine Bizjak with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Bizjak's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Bizjak does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

#### **6. *Exhibit G6- Isely***

The chart attached hereto as Exhibit G6 provides examples of where Isely discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Isely does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Isely to combine or modify Isely in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Isely does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Isely to include that well-known element or combine Isely with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function

for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Isely's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Isely does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

#### **7. *Exhibit G7- Schmidt***

The chart attached hereto as Exhibit G7 provides examples of where Schmidt discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Schmidt does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Schmidt to combine or modify Schmidt in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Schmidt does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Schmidt to include that well-known element or combine Schmidt with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Schmidt's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Schmidt does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

**8. *Exhibit G8-Hetzel***

The chart attached hereto as Exhibit G8 provides examples of where Hetzel discloses, either expressly or inherently, or renders obvious from its teachings, each limitation of the Asserted Claims of the '498 Patent, thereby anticipating those claims.

To the extent Sonos asserts that Hetzel does not anticipate or alone render obvious the Asserted Claims of the '498 Patent, it would have been obvious to a POSITA by Hetzel to combine or modify Hetzel in view of a POSITA's knowledge well known practices at the time. Further, to the extent Sonos asserts that Hetzel does not disclose any well-known elements in the claim limitations, it would have also been obvious to modify Hetzel to include that well-known element or combine Hetzel with any reference identified in Section III that discloses that well-known element.

The reasons or motivation to combine this prior art would include, for example, providing the user more control, simplifying the user's experience, and improving the function for a specific use. A POSITA would be expected to make such simple and conventional steps to further the applicability of Hetzel's teachings.

As a result, well-known and conventional modifications would have also been a result of ordinary innovation, ordinary skill, and common sense and would have been obvious to try and

predictable.

Linkplay reserves the right to supplement or amend these Invalidity Contentions with additional positions on obviousness in response to any allegation by Sonos that Hetzel does not disclose one or more limitations of the Asserted Claims of the '498 Patent.

## **VII. REFERENCES FOR WHICH LINKPLAY MAY SEEK FURTHER DISCOVERY**

These Invalidity Contentions are based on Linkplay's current knowledge of the Asserted Patents, the prior art, and Sonos's contentions in this case. Linkplay continues to review, pursue, and receive discovery and to investigate and analyze prior art, including but not limited to discovery regarding any disclosures, sales, and offers for sale of the claimed technology before the Asserted Patents were filed and including by subpoenaing third-party entities with potentially relevant information about the invalidity of the Asserted Patents. As such, Linkplay reserves the right to amend these Invalidity Contentions. In addition to the prior art identified above, the following is a non-exhaustive list of references for which Linkplay has sought or may seek additional discovery from and/or may provide supplemental invalidity contentions regarding:

- UPnP System
- "Auto-Sensing 4-Way Audio/Video Selector Switch"
- Aios Wireless Audio Platform
- AMP 100 User Manual
- Apple Airport Express 802.116(1st Generation)
- AudioReQuest Multi
- AudioReQuest Pro
- Avago System
- AXIS P8221 Network I/O Audio Module

- BridgeCo Wireless Audio Adapter
- Cd3o C200
- Cd3o C300
- Creative SoundBlaster Wireless Music
- Denon 1604
- Denon AVRs
- EPSON PowerLite 8300i
- EpsonNet 802.11b Wireless Print Server
- Escient Fireball
- Hewlett Packard HP Deskjet 5800 Series
- High Definition AV AutoSelector
- Home Director
- Linksys Wireless-B Media Adapter
- M500
- M6
- Model MRC44 Four Zone — Four Source Audio/Video Controller/Amplifier System
- Multi Channel AV Receiver
- NexSys Software
- Philips Wireless PC Link Micro System (MCW770)
- ProMatrix Digitally Matrixed Amplifier Model PM3180
- RJP-201M Remote Jack Pack
- S-Air System

- Signal Sensing Audio Selector
- SMC Networks EZ-Stream Universal Wireless Multimedia Receiver SMCWMR-AG
- Sonos System
- UPnP System
- Wireless Home Audio System
- Yamaha MusicCast MCX-1000
- Yamaha MusicCast MCX-A10
- Zpre2 Preamplifier

## VIII. SECONDARY CONSIDERATIONS

Notwithstanding the factors and motivations identified above, including the exemplary combinations identified above and in the claim charts of the Exhibits, and notwithstanding the nascent stage of discovery, and subject to the reservation of rights stated above, Linkplay contends that an analysis of secondary considerations further supports the view that each of the Asserted Claims is obvious. Secondary considerations that courts evaluate as objective indicia of obviousness or non-obviousness of an alleged invention include (1) commercial success of the claimed subject matter; (2) long felt but unresolved needs; (3) failure of others; (4) teaching away from the claimed subject matter by the prior art; (5) copying or acclamation by others; and (6) skepticism of experts. *See, e.g., Ruiz v. A.B. Chance Co.*, 357 F.3d 1270, 1274 (Fed. Cir. 2004); *Ecolochem, Inc. v. Southern Cal. Edison Co.*, 227 F.3d 1361, 1379 (Fed. Cir. 2000). Sonos has the burden to show any secondary considerations and Linkplay contends that none exist. In addition, Sonos has to establish a “legally and factually sufficient connection” or a nexus between any alleged secondary considerations with the claimed invention. *See, e.g., Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019).

Linkplay is not aware of objective evidence or secondary considerations demonstrating non-obviousness of the asserted claims of the Asserted Patents. As set forth below, the evidence confirms that the asserted claims would have been obvious to a person of ordinary skill in the art at the time of the alleged invention. To the extent Sonos identifies any purported secondary considerations in response to Linkplay’s invalidity contentions under § 103, Linkplay’s investigation and research are ongoing and Linkplay reserves all rights to respond at the appropriate time, as discovery progresses.

### A. The Alleged Invention Did Not Satisfy a Long-Felt But Unresolved Need

Linkplay is not aware of any relevant and/or persuasive evidence of a long-felt but unmet need that the asserted claims solve. On the contrary, the concepts and functions described in the asserted claims of the Asserted Patents were all well-known before the alleged invention date as evidenced by the patents themselves, their file histories and the references cited therein, and the prior art Linkplay has identified in these contentions and accompanying exhibits.

**B. The Alleged Invention Did Not Face Skepticism or Teaching Away by Experts**

Linkplay is not aware of any relevant and/or persuasive evidence of a failure of others to invent or use the claimed techniques before the alleged invention dates of the Asserted Patents. As discussed, the Asserted Patents recites concepts that were already known in the prior art.

**C. The Alleged Invention Was Not Subject to Industry Acceptance**

Linkplay is not aware of any relevant and/or persuasive evidence that Sonos' alleged invention in the Asserted Patents was subject to additional industry acceptance due to Sonos or the Asserted Patents. This is at least because the subject matter of the Asserted Patents already existed in the industry and was used by many entities and individuals prior to the Asserted Patents.

**D. The Alleged Invention Is Not Responsible for Commercial Success**

Linkplay is not aware of any relevant and/or persuasive evidence of alleged success of any products that is due to the alleged invention claimed in the Asserted Patents. The patentee bears the burden of demonstrating that the relevant commercial success is attributable to the claimed invention "as opposed to other economic and commercial factors unrelated to the technical quality of the patented subject matter." *Cable Elec. Prods, Inc. v. Genmark, Inc.*, 770 F. 2d 1015, 1027 (Fed. Cir. 1987). Here, Sonos has not shown (and cannot show) that any

commercial success is due to the alleged invention of the Asserted Patents. *See Windsjng Int'l Inc. v. AMF*, 782 F. 2d 995 (Fed. Cir. 1986) (considerations such as intervening, non-covered technological innovations, popularity of accessories, and advertising expense are all relevant to the nexus determination). Indeed, Sonos' own products no longer implement the patented technologies disclosed in at least some of the Asserted Patents.

Moreover, to the extent any commercial success of any products is due to concepts discussed in the Asserted Patents, those concepts were already present in the prior art, as described above, and thus does not support any commercial success that is relevant to the question of obviousness. *Takai Corp. v. Easton Enterprises, Inc.*, 632 F.3d 1358, 1369-70 (Fed. Cir. 2011) ("If commercial success is due to an element in the prior art, no nexus exists."); *In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) ("Where the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention."); *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312

**E. There Is No Evidence to Show Copying of the Alleged Invention**

Linkplay is not aware of any relevant and/or persuasive evidence of any aspect of the Asserted Patents that was copied by any entity or person, much less that any functionality that practices the Asserted Patents was copied. *See Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1366 (Fed. Cir. 2001) (allegedly copied feature must be an embodiment of the patented claims). Linkplay certainly does not copy from the alleged inventions. Indeed, Sonos' own products no longer implement the patented technologies disclosed in at least some of the Asserted Patents.

**F. The Industry Has Not Acquiesced to the Alleged Invention Through Licensing**

Linkplay is not aware of any relevant and/or persuasive evidence of any aspect of the Asserted Patents that was copied by any entity or person, much less that any functionality that practices the Asserted Patents was copied. *See Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1366 (Fed. Cir. 2001) (allegedly copied feature must be an embodiment of the patented claims).

**G. Simultaneous Development of the Alleged Invention Confirms that the Asserted Claims Were Obvious**

As set forth above, many people and companies independently and simultaneously developed and invented the same technology within a comparatively short space of time of a few years, which further shows that the Asserted Patents were the product only of ordinary engineering skill. Moreover, the fact that there was relatively simultaneous invention demonstrates that the subject matter of the Asserted Patents was already well within the level of ordinary skill in the art.

**H. No Objective Evidence Having a Sufficient Nexus to the Claimed Inventions**

Linkplay is not aware of any objective evidence with a legally and factually sufficient connection or “nexus” to the claimed invention. No secondary considerations exist that are directed to what was not known in the prior art. *See Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1331 (Fed. Cir. 2017); *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1332 (Fed. Cir. 2016). As just one example, claims of the ’014 Patent were rejected over prior art during prosecution and only allowed after Sonos incorporated the allowable subject matter directed to “adjusting a volume meter represented by an averaged value of audio volumes of the players in the group.” However, no objective indicia of non-obviousness exists that has a sufficient nexus to this feature.

During reexamination of the ’357 patent, Sonos presented various arguments for

secondary indicia, but failed to identify a legally and factually sufficient nexus. For example, Sonos' secondary indicia lack a nexus because they relate to features "known in the prior art." *In re Kao*, 639 F.3d 1057 (Fed. Cir. 2011). The Board's decision in the reexamination, addressing secondary indicia previously presented in the district court case between the Patent Owner and reexamination requestor, clarified that PO's secondary indicia related to "the synchronous playback feature" of Sonos's products. However, this claim feature is disclosed in the prior art presented in this Petition. *See Yita, LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1364 (Fed. Cir. 2023) ("objective indicia of nonobviousness lacks a nexus if it exclusively relates to a feature that was known in the prior art") (citations omitted).

#### **IX. INVALIDITY FOR NON-STATUTORY OBVIOUSNESS TYPE DOUBLE PATENTING**

Claims of the Asserted Patents are invalid under the doctrine of obviousness-type double patenting over the claims of various Sonos patents that the Asserted Patents did not disclaim patent terms with. Each Asserted Patent is a part of an extensive patent family including patents directed to substantially overlapping subject matter. Sonos have additional patents, outside those patent families, that directed to substantially overlapping subject matter with the Asserted Patents. Claims of each Asserted Patent are invalid under the doctrine of obviousness-type double patenting over the claims of various Sonos patents, alone or in light of prior art.

Claims of the '532 Patent are invalid under the doctrine of obviousness-type double patenting over the claims of each of U.S. Patent No. 9,189,010 (the "'010 Patent"), U.S. Patent No. 9,182,777 (the "'777 Patent"), U.S. Patent No. 8,370,678 (the "'678 Patent"), U.S. Patent No. 8,234,395 (the "'395 Patent"), U.S. Patent No. 9,164,531 (the "'531 Patent"), U.S. Patent No. 8,020,023 (the "'023 Patent"), U.S. Patent No. 8,423,659 (the "'659 Patent"), U.S. Patent No. 8,086,752 (the "'752 Patent"), and U.S. Patent No. 7,668,964 (the "'964 Patent"), alone or in

light of prior art.

By way of just an example to illustrate the analysis, claims 1-8, 10-20, 22-32, and 34 of the '532 Patent are invalid under the doctrine of obviousness-type double patenting over the claims of the '010 Patent and prior art. Both patents are owned by Sonos and name the same inventor—Nicholas A. J. Millington. Both the '532 Patent and the '010 Patent are continuations of the '777 Patent, which is in turn a continuation of the '395 Patent, which claims priority to the same provisional application (U.S. Provisional App. No. 60/490,768, filed July 28, 2003). The '532 Patent and the '010 Patent share substantially the same specification, were filed on the same day: March 30, 2012, and neither is subject to any terminal disclaimer. The '532 Patent has a Patent Term Adjustment (“PTA”) of 655 days, which would extend the expiration date of the '532 Patent to January 16, 2026. The '010 Patent has a PTA of 611 days, which would extend the expiration date of the '010 Patent to December 3, 2025.

As shown in an exemplary chart included as Exhibit F1, claims 1-8, 10-20, 22-32, and 34 of the '532 Patent are not patentably distinct over claims 5, 18, 18, and 29 of the '010 Patent, respectively. Further, the '532 Patent does not benefit from a safe harbor because the '532 Patent and the '010 Patent did not issue from divisional applications of one another.

While claims 1-8, 10-20, 22-32, and 34 of the '532 Patent are anticipated or rendered obvious by claims 5, 18, 18, and 29 of the '010 Patent, respectively, to the extent any further teaching is needed as an alternative, prior art references identified in Section III of Linkplay's Invalidity Contentions will apply. So do those cited by the examiner during the prosecution of the '532 Patent or other related patents, such as:

- Goldberg (US20070142944A1)
- Spurgat (US20020173273A1)

- Blank (US20040252400A1)
- Meade (US20030073432A1)
- Mercer (US20040078383A1)

Similar analysis applies to the '777 Patent, the '678 Patent, the '395 Patent, the '531 Patent, the '023 Patent, the '659 Patent, the '752 Patent, and the '964 Patent, showing claims of the '532 Patent are also invalid under the doctrine of obviousness-type double patenting over the claims of each of the above-listed patents, alone or in light of prior art.

Linkplay reserves the right to supplement its double patenting contentions for the '532 Patent as well as other Asserted Patents. Linkplay reserves the right to further explain these contentions as discovery progresses.

**X. INVALIDITY UNDER 35 U.S.C. § 101**

The asserted claims of the Asserted Patents are invalid under 35 U.S.C. § 101 because they are directed to non-patentable subject matter. The asserted claims are directed to patent-ineligible concepts. *See Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). Furthermore, there are no elements of the asserted claims that transform the nature of the claim into a patent-eligible application of the abstract idea or provide the necessary inventive concept. *See id.* at 2357. In addition, all of the elements of the asserted claims merely involve well-understood, routine, conventional activity and implementations previously used by those in the field at the time of the alleged inventions of the Asserted Patents. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012).

Regarding *Alice* step one, the asserted claims are directed toward the following abstract idea(s), law(s) of nature, natural phenomena, and/or product(s) of nature:

Patent	Patent-Ineligible Subject Matter
--------	----------------------------------

7,571,014	evaluating the output of basic mathematical operation(s) to affect the amplitude of audio waves
	evaluating the output of basic mathematical operation(s) to process audio data
	centralized control of audio system settings for networked playback devices
	visualizing volume control of multiple players based on mathematical relationships
	simultaneously or uniformly adjusting volumes of multiple players
9,164,532 9,213,357 10,146,498	timing the processing of audio data by evaluating the output of basic mathematical operation(s)
	synchronizing a group of networked devices
	synchronizing a group of networked devices with independent clocks
	managing networked groups membership
	disengaging from one group of networked devices and joining another group of networked devices
10,541,883	switching networked device groups
	communicating directly between two devices before communicating through a network the two devices are both connected to
10,853,023	establishing access to a secure network
	prioritizing one source of data over another source of data
	switching between sources

While the asserted patents are written in technical jargon and attempt to portray themselves as solving technical problems, they do not actually solve them, merely using technology to mask the abstract problems being solved. But the Federal Circuit has confirmed many times that a computer “automatically” performing a task “does not negate its abstraction.” *See, e.g., Data Engine Techs. LLC v. Google LLC*, 906 F.3d 999, 1013 (Fed. Cir. 2018). Limiting “the abstract idea to a particular environment . . . does not make the claims any less abstract for the step 1 analysis.” *In re TLI Commc ’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). The asserted claims’ attempt to do so does not save them from invalidity.

For example, claim 16 (and other independent claims that contain substantially similar limitations) of the ’014 patent recites a method of displaying a list of volume meters, one of which representing an audio volume of a player and another representing an audio volume of a group of players. The method further includes adjusting the volume meter representing the

audio volume of the group (referred to as the “group volume meter”), which is represented by an average value of individual audio volumes of the players in the group, and the adjustment changes a volume of each of the players synchronously. However, this group volume meter representing a group volume is nothing more than a mathematical relationship among the individual audio volumes of the players in the group (e.g., an average), and does not correspond to any actual audio volume. In other words, the group volume is merely a conceptual idea that, serves the only purpose of, as a shortcut, simultaneously or uniformly adjusting multiple actual volumes of the players in the group. Therefore, the claim is directed to an abstract idea of simultaneously or uniformly adjusting volumes of multiple players. This can be achieved by, for example, one or more humans manually turn the volume dials of multiple players simultaneously or uniformly. The result would be exactly the same. The recitation of a conceptual group volume meter in the claim is merely a visual representation to facilitate this simultaneous or uniform adjustment through a mathematical relationship (e.g., an average of the individual volumes). Therefore, claim 16, as well as other independent claims that contain substantially similar limitations of the ’014 patent, is directed to an abstract idea.

Regarding *Alice* step two, whether in an individual limitation or the ordered combination of the limitations, the asserted claims do not contain an “inventive concept” that transforms the abstract idea into patent-eligible claims. It is well-settled that mere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea. *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016). Individually, the steps in the asserted claims were and are well-understood, routine, and conventional.

The ordered combination of claims does not contain inventive concepts either. Furthermore, the Supreme Court has explained that “simply appending conventional steps,

specified at a high level of generality, to . . . abstract ideas cannot make those . . . ideas patentable.” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012). “Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.” *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322 (Fed. Cir. 2017). This is the case here.

Take claim 16 (and other independent claims that contain substantially similar limitations) of the ’014 patent for example, the additional elements other than the abstract idea are routine and conventional, such as a screen, as well as displaying, selecting, and adjusting volume meters on the screen. These routine and conventional elements do not amount to significantly more to convert the abstract idea into patent eligible subject matter.

Further, because the added limitations in the dependent claims can be characterized as insignificant, post-solution activities (*see Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1242 (Fed. Cir. 2015) (“[T]he prohibition against patenting abstract ideas cannot be circumvented by . . . adding insignificant post-solution activity.”) (quoting *Mayo*, 132 S. Ct. at 1294), this same analysis applies to those claims as well.

Also, independent claim 1 of the ’883 patent (and all its dependent claims) is directed at patent-ineligible subject matter because it directly claims a computer program per se (“software per se”), a product that does not have a physical or tangible form, through a limitation directed toward “program instructions,” in the term “program instructions stored on the non-transitory computer-readable medium that . . . .” Claims 1-13 of the ’883 patent therefore are not directed to any of the statutory categories (processes, machines, manufactures and compositions of matter).

## **XI. INVALIDITY UNDER 35 U.S.C. § 112**

The Asserted Claims of the Asserted Patents fail to satisfy 35 U.S.C. § 112. As set forth below, Linkplay provides the following grounds of invalidity of the Asserted Claims for lack of written description and/or enablement under 35 U.S.C. § 112 ¶ 1, indefiniteness under 35 U.S.C. § 112 ¶ 2, and/or for failure to meet the requirements for dependent claims under 35 U.S.C. § 112 ¶¶ 3 and 4. The deficiencies that render any claims, independent or dependent, invalid for lack of written description and/or enablement under 35 U.S.C. § 112 ¶ 1, indefiniteness under 35 U.S.C. § 112 ¶ 2, and/or for failure to meet the requirements for dependent claims under 35 U.S.C. § 112 ¶¶ 3 and 4 also infect and thus invalidate all claims depending therefrom.

These grounds are identified based on knowledge in Linkplay's possession at this time. Further investigation may uncover additional grounds for invalidity under § 112, and Linkplay reserves the right to supplement these disclosures to include all such additional grounds as appropriate. For example, Linkplay reserves the right to amend these Invalidity Contentions to provide additional grounds of invalidity under § 112 in response to any contentions or positions that Sonos may subsequently disclose.

While Linkplay's Invalidity Contentions seek to provide alternative theories of invalidity, they are not, and should in no way be seen as, admissions or adoptions as to any particular claim scope or construction, or as any admission that any particular element is met in any particular way. Linkplay reserves the right to supplement or otherwise amend its contentions after the Court's claim construction ruling, if Sonos amends or alters its infringement contentions in any way, or after Linkplay has obtained meaningful discovery from the inventors, the prosecuting attorneys, third parties, and Sonos.

Linkplay reserves the right to amend or supplement these contentions to assert any grounds of invalidity based on failure to meet the enablement or written description requirements under 35 U.S.C. §

112 ¶ 1, indefiniteness under 35 U.S.C. § 112 ¶ 2, improper dependent claims under 35 U.S.C. § 112 ¶ 4, and failure to disclose corresponding structure, material, or acts for terms to be construed under 35 U.S.C. § 112 ¶ 6 of any of the Asserted Claims based upon Sonos's claim construction positions, the Court's construction of claim terms, as well as further investigation and discovery.

**A. Written Description and Enablement**

35 U.S.C. § 112, ¶ 1 provides that a patent specification “shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make, and use the same[.]” The Federal Circuit has held that this language creates two closely related, yet separate requirements: (i) a written description of the invention (“written description”) and (ii) a written description of the manner and process of making and using the invention (“enablement”). *See Ariad Pharms., Inc. v. Eli Lilly Co.*, 598 F.3d 1336, 1344 (Fed. Cir. 2010) (*en banc*).

The test for written description requires “an objective inquiry into the four corners of the specification from the person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan to show that the inventor actually invented the invention claimed.” *Ariad*, 598 F.3d at 1351. A patent is therefore invalid for inadequate written description unless “the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Id.*

The enablement requirement mandates that the disclosure in the specification describe “the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly

connected, to make and use the [invention].” 35 U.S.C. § 112, ¶ 1. For the specification to be enabling, it “must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’” *ALZA Corp. v. Andrx Pharms., LLC*, 603 F.3d 935, 940 (Fed. Cir. 2010); *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1, 12-13 (1946); *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008) (“The scope of the claims must be less than or equal to the scope of the enablement to ensure that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.”) (internal quotes and citation omitted).

The specifications of the Asserted Patents do not reasonably convey to a person of ordinary skill in the art that the inventor had possession of the claimed subject matter as of the filing date of the application, or actually invented the claimed invention, for the claim elements set forth in the accompanying exhibits. Further, the specifications of the Asserted Patents do not enable or teach a person of ordinary skill in the art to make and use the full scope of the claimed invention without undue experimentation for the reasons set forth in the accompanying exhibits.

### 1. *The '014 Patent*

Based on Linkplay’s present understanding of (and Sonos’s apparent interpretation of) the Asserted Claims, the Asserted Claims of the '014 Patent below fail to satisfy the requirements of § 112, ¶ 1 because the specification fails to provide adequate written description and/or enabling disclosure for the following terms:

- “synchronizing all players in the zone group” (claim 1) and “synchronizing all players in the zone group in accordance with the zone group head” (claim 25). These elements are not enabled. The specification only describes synchronization as a result such as players can be, will be or have been synchronized, but does not enable or teach a person of ordinary skill in the art how to synchronize all the players in a

group, let alone how to synchronize the players in accordance with the zone group head, without undue experimentation.

- “adjusting a volume meter represented by an averaged value of audio volumes of the slayers in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of slayers synchronously in accordance with an adjustment made by a user” (claims 1 and 25); and “adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the slayers in the group, and said 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” (claims 16 and 38). These elements are not enabled. The specification only describes synchronization as a result such as players can be, will be or have been synchronized, but does not enable or teach a person of ordinary skill in the art how to synchronize all the players in a group, let alone how to change a volume of each of the group of players synchronously, without undue experimentation.
- “playing the audio source synchronously in all players in the zone group” (claims 3 and 27). This element is not enabled. The specification only describes synchronization as a result such as players can be, will be or have been synchronized, but does not enable or teach a person of ordinary skill in the art how to synchronize all the players in a group, let alone how to play a same audio source synchronously in all players in the zone group, without undue experimentation.
- “said disassociating the selected players comprises making the selected players

available for grouping with a zone group” (claims 14 and 36). This element is not enabled. The specification does not enable or teach a person of ordinary skill in the art how to make a disassociated player available for grouping again, without undue experimentation.

- At least one of the above elements also lack written description and/or enablement in the specification of application no. 10/816,217, to which the '014 patent claims priority. These claims and all their dependent claims of '014 patent thus do not entitle to the claimed priority.
- To the extent the above elements are recited or implied to be performed or organized in a certain order, in light of the specification, prosecution history, or Sonos' apparent interpretation, such order also lacks written description and/or is not enabled.

## **2. *The '532 Patent***

Based on Linkplay's present understanding of (and Sonos's apparent interpretation of) the Asserted Claims, the Asserted Claims of the '532 Patent below fail to satisfy the requirements of § 112, ¶ 1 because the specification fails to provide adequate written description and/or enabling disclosure for the following terms:

- “receiving, at a controller, information identifying a plurality of zones on a local area network (LAN) on which the controller is connected, each zone comprising a zone player that includes a digital to analog converter and amplifier and configured to form, under control of the controller, a group of two or more zones that play audio content in synchrony with each other, wherein the controller communicates with the plurality of zone players via the LAN” (claims 1, 10, and 22). This element was presented in a continuation application and also amended during prosecution. The

element lacks written description in the specification as originally-filed. For example, the specification only discloses zone players on a local network but does not disclose a plurality of zones on a LAN or forming a group of two or more zones that play audio content in synchrony with each other. On information and belief, Sonos took years after the allegedly priority date in an effort to connect its speakers to a LAN and have “the controller communicates with the plurality of zone players via the LAN,” as recited in the claims. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to have zones on a LAN or to form a group of zones, without undue experimentation.

- “displaying the plurality of zones on a screen of the controller” (claims 1, 10, and 22). This element was presented in a continuation application and also amended during prosecution. The element lacks written description in the specification as originally-filed. For example, the specification only discloses the controller has a display to display status information that can include certain information of the zone players. *See* ’532 patent, 9:16-25. The specification does not disclose displaying the plurality of zones. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to display zones on a screen of controller, without undue experimentation.
- “the controller receiving a command to form a first group of two or more zones of the plurality of zones” (claims 1 and 10). This element was presented in a continuation application and also amended during prosecution. The element lacks written description in the specification as originally-filed. For example, the specification only discloses forming a group of zone players but does not disclose forming a group of

zones. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to display zones on a screen of controller, without undue experimentation.

- “in response to receiving the command to form the first group of two or more zones, the controller configuring the first group, wherein configuring the first group comprises the controller configuring, over the LAN, a first zone player in the first group to (a) transmit audio content, playback timing for the audio content, and device clock information to every other zone player in the first group, and (b) play back the audio content in synchrony with every other zone player in the first group according to the playback timing and the device clock information, wherein the zone players in the first group remain independently clocked while playing the audio content in synchrony” (claims 1 and 10); “in response to receiving the command to form the first synchrony group, configuring the first synchrony group, wherein configuring the first synchrony group comprises configuring one of the first or second zone players to (a) transmit audio content, playback timing for the audio content, and device clock information to the other of the first or second zone players, and (b) play back the audio content in synchrony with the other of the first or second zone players according to the playback timing and the device clock information, wherein the first and second zone players remain independently clocked while playing the audio content in synchrony” (claim 22); and “in response to receiving the command to form the synchrony group, configuring the synchrony group, wherein configuring the synchrony group comprises configuring, over a Local Area Network (LAN), the first zone player to (a) transmit audio content, playback timing for the audio content, and

device clock information to the second zone player and (b) play back the audio content in synchrony with the second zone player according to the playback timing and the device clock information, wherein the first and second zone players remain independently clocked while playing the audio content in synchrony” (claim 34).

These elements were presented in a continuation application and also amended during prosecution, including examiner’s amendments, to gain patentability. These elements lack written description in the specification as originally-filed. For example, the specification does not disclose the controller configures one zone player to transmit the various claimed information to other players in the group, and also play back in synchrony with them according to the playback timing and device clock information. The specification also does not disclose the players remain independently clocked while playing the audio content in synchrony. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to configure one zone player to transmit the various claimed information to other players in the group, and also play back in synchrony with them according to the playback timing and device clock information, without undue experimentation.

- “wherein the controller is not a member of the first group” (claims 1, 10, and 34).

This element was presented in a continuation application and also added during prosecution. It lacks written description in the specification as originally-filed. This element is a negative limitation that must have basis in the original disclosure and silence in the specification is not sufficient to support a negative claim limitation. *See Novartis Pharms. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013 (Fed. Cir. 2022). However, the specification does not disclose that the controller is not a member of the

group. Also, nothing disclosed in the specification necessarily precludes the possibility that controller is implemented as a member of the group.

- “the controller receiving a command to form a second group of two or more zones of the plurality of zones” and “in response to receiving the command to form the second group of two or more zones, the controller configuring the second group, wherein configuring the second group comprises configuring, over the LAN, at least a second zone player of the plurality of zones to form the second group of two or more zones, wherein after the at least a second zone player has formed the second group, the controller is not a member of the second group (claims 6 and 18). These elements were presented in a continuation application and amended during prosecution. The elements lack written description in the specification as originally-filed for at least reasons contented above for similar limitations related to forming the first group, e.g., lack disclosure of forming a group of zones and that the controller is not a member of the group. The specification also does not disclose “wherein after the at least a second zone player has formed the second group, the controller is not a member of the second group.” No disclosure in the specification how the controller is or is not a member of a group has anything to do with the timing (e.g., whether before or after) that a group is formed. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to form a group of zones, without undue experimentation.
- “wherein after the particular zone player has left the first group, one or more zone players remaining in the first group continue playing the audio content” (claims 7 and 19) and “wherein after the second zone player has left the first synchrony group, the

first zone player and any other zone players remaining in the first synchrony group continue playing the audio content in synchrony” (claim 31). These elements were presented in a continuation application and added during prosecution. The elements lack written description in the specification as originally-filed. The specification does not disclose after a zone player disengages from the group, “one or more zone players remaining in the first group continue playing the audio content.”

- “the controller receiving a command to add a particular zone to the first group of zones while the first group of zones is playing audio content in synchrony” and “wherein after the at least one zone player of the particular zone has joined the first group of zones, . . . (ii) the controller is not a member of the first group” (claims 8, 20 ) and “wherein after the third zone player has joined the first synchrony group, (i) the third zone player plays the audio content in synchrony with all other zone players in the first synchrony group and (ii) the controller is not a member of the first synchrony group” (claim 32). These elements were presented in a continuation application and amended during prosecution. The elements lack written description in the specification as originally-filed. For example, the specification discloses joining a zone player in a group but does not disclose adding a zone to the group. The specification also fails to disclose after a zone player has joined a zone, “the controller is not a member of the first group.” No disclosure in the specification how the controller is or is not a member of a group has anything to do with the timing (e.g., whether before or after) that a zone player joins a group. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to add a zone to a group, without undue experimentation.

- At least one of the above elements also lack written description and/or enablement in the provisional application no. 60/490,768, to which the '532 patent claims priority. These claims and all their dependent claims of '532 patent thus do not entitle to the claimed priority.
- To the extent the above elements are recited or implied to be performed or organized in a certain order, in light of the specification, prosecution history, or Sonos' apparent interpretation, such order also lacks written description and/or is not enabled.

### 3. *The '357 Patent*

Based on Linkplay's present understanding of (and Sonos's apparent interpretation of) the Asserted Claims, the Asserted Claims of the '357 Patent below fail to satisfy the requirements of § 112, ¶ 1 because the specification fails to provide adequate written description and/or enabling disclosure for the following terms:

- “after receiving the control information (i) obtaining, by the first playback device from the audio information source outside of the LAN, the audio information; (ii) transmitting, by the first playback device to a second playback device, the audio information, playback timing information associated with the audio information, and device clock information of the first playback device; and (iii) playing back, by the first playback device, the audio information in synchrony with the second playback device by using the playback timing information associated with the audio information and the device clock information of the first playback device to play back the audio information, wherein the first and second playback devices remain independently clocked during synchronous playback of the audio information” (claims 1, 8, and 9). These elements were presented in a continuation application and

also amended during prosecution to gain patentability. These elements lack written description in the specification as originally-filed. For example, the specification does not disclose one zone player that obtains audio information from audio information source outside the LAN, transmits the various claimed information to another player in the group, and also plays back in synchrony with them using the playback timing and its own device clock information. The specification also does not disclose the players remain independently coked while playing the audio content in synchrony. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to configure one zone player to obtain audio information from audio information source outside the LAN, transmit the various claimed information to another player in the group, and also play back in synchrony with them using the playback timing and its own device clock information, without undue experimentation.

- “(i) generating, by the first playback device, the playback timing information associated with the audio information; and (ii) generating, by the first playback device, the device clock information of the first playback device” (claim 2) and “generate the playback timing information associated with the audio information; and generate the device clock information of the first playback device” (claim 10). These elements were presented in a continuation application and also amended during prosecution to gain patentability. These elements lack written description in the specification as originally-filed. For example, the specification discloses an audio information channel device providing playback timing information and device clock information, but does not disclose any playback device generating such information.

The specification also does not disclose the device clock information is of the playback device that also performs all the functions recited in claims 1 and 9 from which claims 2 and 10 depend. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to configure one zone player to generate playback timing information and device clock information in addition to obtaining audio information from audio information source outside the LAN, transmitting the various claimed information to another player in the group, and also playing back in synchrony with them using the playback timing and its own device clock information, without undue experimentation.

- “wherein the first playback device is the master playback device of the synchrony group” (claims 7 and 15). This element was presented in a continuation application. These elements lack written description in the specification as originally-filed. For example, the specification discloses a master device 21, but does not disclose the master device performs all the functions recited in claims 1, 3-6 and 9, 11-12, 14 from which claims 2 and 15 depend. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to configure a master device of a synchrony group player to perform all the functions recited in claims 1, 3-6 and 9, 11-12, 14, without undue experimentation.
- At least one of the above elements also lack written description and/or enablement in the provisional application no. 60/490,768, to which the '357 patent claims priority. These claims and all their dependent claims of '357 patent thus do not entitle to the claimed priority.
- To the extent the above elements are recited or implied to be performed or organized

in a certain order, in light of the specification, prosecution history, or Sonos' apparent interpretation, such order also lacks written description and/or is not enabled.

#### 4. *The '883 Patent*

Based on Linkplay's present understanding of (and Sonos's apparent interpretation of) the Asserted Claims, the Asserted Claims of the '883 Patent below fail to satisfy the requirements of § 112, ¶ 1 because the specification fails to provide adequate written description and/or enabling disclosure for the following terms:

- “detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup” (claims 1, 14, and 20). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose any first message indicating the playback device is available for setup that is transmitted before the initial communication path is established. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device to transmit a first message indicating that the playback device is available for setup before the initial communication path is established, without undue experimentation.
- “while in the setup mode, receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device” (claims 1, 14, and 20). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose any response

that facilitates the establishment of the initial communication path, or any such response to first message that is transmitted before the initial communication path is established. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device to receive a response to a first message transmitted by the playback device that facilitates establishing the initial communication path, without undue experimentation.

- “the computing device is operating on a secure wireless local area network (WLAN) that is defined by an access point;” “using the network configuration parameters to connect to the secure WLAN that is defined by the access point;” and “communicating with the computing device via the secure WLAN that is defined by the access point” (claims 1, 14, and 20). These elements were added/amended during prosecution in response to rejections. They lack written description in the specification as originally-filed. For example, the specification discloses the computing device is on an Ad-Hoc network in which there is no one access point for all traffics. *See* ’883 patent, 2:45-63; 9:1-14. The specification does not disclose that the computing device is on a secure WLAN defined by an access point or other device connecting to or communicating with the computing device via the secure WLAN that is defined by the access point. This is also suggested by the arguments Sonos made during the prosecutions of the ’883 patent to distinguish prior art cited against it. On information and belief, Sonos took years after the allegedly priority date in an effort to connect its speakers to “a secure wireless local area network (WLAN) that is defined by an access point,” as recited in the claims. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to share

configuration parameters to connect a device to a secure WLAN defined by an access point, without undue experimentation.

- “wherein the initial communication path with the computing device does not traverse the access point” (claims 1, 14, and 20). This element was added/amended during prosecution in response to rejections. It lacks written description in the specification as originally-filed. This element is a negative limitation that must have basis in the original disclosure and silence in the specification is not sufficient to support a negative claim limitation. *See Novartis Pharms. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013 (Fed. Cir. 2022). However, the specification does not disclose that the rudimentary communication path does not traverse the access point of the WLAN. For example, although the specification discloses a rudimentary communication path and a local area network having access points (such as the HOUSEHOLD), it does not disclose that the rudimentary communication path does not traverse the access point. *See* ’883 patent, 10:9-30; 16:5-21. No disclosure excludes the possibility that the rudimentary communication path may traverse or otherwise interact with an access point of the local area network. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to establish an initial communication path that does not traverse any access point of the WLAN, without undue experimentation.
- “receiving, from the computing device via the initial communication path, at least a second message containing network configuration parameters for the secure WLAN, wherein the network configuration parameters comprise an identifier of the secure WLAN and a security key for the secure WLAN” (claims 1, 14, and 20). This element

was added/amended during prosecution in response to rejections. It lacks written description in the specification as originally-filed. As explained above, the specification does not disclose that the computing device sends configuration parameters for the secure WLAN that is defined by an access point. This is also suggested by the arguments Sonos made during the prosecutions of the '883 patent to distinguish prior art cited against it. On information and belief, Sonos took years after the allegedly priority date in an effort to connect its speakers to “a secure wireless local area network (WLAN) that is defined by an access point,” as recited in the claims. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to share configuration parameters via an initial communication path to connect a device to a secure WLAN defined by an access point, without undue experimentation.

- “after receiving the second message, providing an indication that the playback device has successfully received the network configuration parameters for the secure WLAN” (claims 4 and 17). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose any indication the playback device has successfully received the network configuration parameters. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device to receive a response to a first message transmitted by the playback device that facilitates establishing the initial communication path, without undue experimentation.
- “cause the playback device to perform functions comprising: after connecting to the

secure WLAN, establishing a new networked audio system on the secure WLAN” (claim 7). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose that the playback device establishes a networked system on the secure WLAN. On information and belief, Sonos took years after the allegedly priority date in an effort to connect its speakers to a WLAN to “establish[] a networked system on the secure WLAN,” as recited in the claims. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device to establish a networked system on the secure WLAN, without undue experimentation.

- “cause the playback device to perform functions comprising: after connecting to the secure WLAN, joining an existing networked audio system operating on the secure WLAN” (claim 8). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose that the playback device joins an existing networked system operating on the secure WLAN. On information and belief, Sonos took years after the allegedly priority date in an effort to connect its speakers to a WLAN including “joining an existing networked audio system operating on the secure WLAN,” as recited in the claims. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device join an existing networked system operating on the secure WLAN, without undue experimentation.
- “cause the playback device to perform functions comprising: receiving, from the

computing device, a command to assign a name to the playback device.” (claim 9).

This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose that the controller device assigns a name to the playback device. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a controller device to generate a command to assign a name to the playback device, without undue experimentation.

- “a command to retrieve audio content for playback from an audio source that is accessible via a communication path that includes the secure WLAN” and “retrieving the audio content from the audio source via the communication path that includes the secure WLAN” (claims 11 and 19). These elements were presented in a continuation application but lack written description in the specification as originally-filed. The specification does not disclose a command to retrieve audio content for playback from an audio source that is accessible via a communication path that includes the secure WLAN or that the playback device retrieves audio content via such a communication path. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to retrieve audio content from an audio source via a communication path that includes the secure WLAN, without undue experimentation.
- “after transitioning to communicating with computing device via the secure WLAN, receiving, from the computing device, a command to form a group with at least a first playback device of a networked audio system such that the playback device is configured to play back audio content in synchrony with at least the first playback

device” (claim 13). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose the playback device receives a command to form a group with another networked device, or that the command is received after the playback device transitions to communicating with computing device via the secure WLAN. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make the playback device to form a group with another networked playback device to play back audio content in synchrony, without undue experimentation

- At least one of the above elements also lack written description and/or enablement in the provisional application no. 60/577,284, to which the '883 patent claims priority. These claims and all their dependent claims of '883 patent thus do not entitle to the claimed priority.
- To the extent the above elements are recited or implied to be performed or organized in a certain order, in light of the specification, prosecution history, or Sonos' apparent interpretation, such order also lacks written description and/or is not enabled.

### 5. *The '023 Patent*

Based on Linkplay's present understanding of (and Sonos's apparent interpretation of) the Asserted Claims, the Asserted Claims of the '023 Patent below fail to satisfy the requirements of § 112, ¶ 1 because the specification fails to provide adequate written description and/or enabling disclosure for the following terms:

- various operations involving “first type of media content” and “second type of media content” (claims 1-17). These two terms are recited throughout all claims of the '023

patent in the context of various operations performed by the playback device such as automatic switching between the two types of media content. However, these various operations of the two types of media content lack written description in the specification as originally-filed. For example, the original specification discloses a source may include different types of media content: audio and/or video content, and the two types of content can be played by two playback devices in synchrony. *See* '023 patent, 19:41-61. However, the specification does not disclose switching between different *types* of media content on the same playback device. For example, the specification only discloses source switching between “a first audio data stream” and “a second audio data stream,” rather than a “first type of media content” and “second type of media content.” *See* '023 patent, 6:15-25, 54-56; 23:63-24:8; 24:23-35. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device to realize the claimed preemption function (i.e., receipt of a first type of media content preempts playback of a second type of media content) and automatically switch between playing “a first type of media content” and “a second type of media content,” without undue experimentation.

- “arming the playback device so that receipt of a first type of media content preempts playback of a second type of media content” and “in response to determining that the playback device is no longer receiving the first type of media content, . . . rearming the playback device so that subsequent receipt of the first type of media content preempts playback of the second type of media content” (claims 1, 8, and 14). These elements were presented in a continuation application but lack written description in

the specification as originally-filed. For example, the specification does not disclose arming or rearming any playback device, but instead “the second source.” *See* ’023 patent, 2:64-3:6; 6:61-7:12. The specification also does not disclose the receipt of a first type of media content preempts playback of a second type of media content. For example, as contended above, the specification does not disclose source switching between a “first type of media content” and a “second type of media content.”

Furthermore, the specification does not disclose the claimed two-step process: arming upfront and rearming again “in response to determining that the playback device is no longer receiving the first type of media content. These elements are also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to arm and then rearm a playback device to realize the claimed preemption function (i.e., receipt of a first type of media content preempts playback of a second type of media content), without undue experimentation.

- “after arming the playback device, playing the second type of media content” (claims 1, 8, and 14). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose arming any playback device before playing the second type of media content. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to arm a playback device to realize the claimed preemption function (i.e., receipt of a first type of media content preempts playback of a second type of media content) before playing a second type of media content, without undue experimentation.
- “in response to determining that playback device is receiving the first type of media

content, ceasing playback of the second type of media content and playing the first type of media content” (claims 1, 8, and 14). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose ceasing playback of the second type of media content and playing the first type of media content. For example, as contended above, the specification does not disclose switching from “the second type of media content” and “the first type of media content.” This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to make a playback device to switch playback from one type of media content to another type of media content, without undue experimentation.

- “determining that the playback device is no longer receiving the first type of media content” and “in response to determining that the playback device is no longer receiving the first type of media content, ceasing playback of the first type of media content” (claims 1, 8, and 14). These element were presented in a continuation application but lack written description in the specification as originally-filed. The specification does not disclose ceasing playback of the first type of media content after determining it is no longer receiving the first type of media content. Instead, for example, the specification discloses the playback device switches to play the first audio data stream (and thus stops playing the second audio data stream) first, and “subsequently instructs the second source to stop sending” the second audio data stream to it, and both of these actions occur before the second source no longer detects a signal on its line-in connector. *See* ’023 patent, 24:20-35. These elements are also not enabled. The specification fails to enable or teach a person of ordinary

skill in the art how to make a playback device to cease playback of the media content after determining it is no longer receiving it, without undue experimentation.

- “playing the first type of media content comprises transmitting at least a portion of the first type of media content to at least one of a second playback device or a third playback device” (claims 6 and 12). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose a playback device transmitting the first type of media content received on the line-in connector to another playback device. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to implement the element, without undue experimentation.
- “the first type of media content comprises media content received from a video device” (claims 7 and 13). This element was presented in a continuation application but lacks written description in the specification as originally-filed. The specification does not disclose any video device or that the first type of media content received on the line-in connector is from a video device. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to implement the element, without undue experimentation.
- To the extent the above elements are recited or implied to be performed or organized in a certain order, in light of the specification, prosecution history, or Sonos’ apparent interpretation, such order also lacks written description and/or is not enabled.

#### **6. *The ’498 Patent***

Based on Linkplay’s present understanding of (and Sonos’s apparent interpretation of) the Asserted Claims, the Asserted Claims of the ’498 Patent below fail to satisfy the requirements of

§ 112, ¶ 1 because the specification fails to provide adequate written description and/or enabling disclosure for the following terms:

- The combination of “joining a first synchrony group comprising the first zone player and a second zone player;” “providing first device clock timing information to the second zone player over an asynchronous network while the first zone player is in the first synchrony group;” “playing first audio information in synchrony with the second zone player while the first zone player is in the first synchrony group, wherein all zone players in the first synchrony group playback the first audio information using the first device clock timing information that the first zone player provides over the asynchronous network;” “receiving control information from the controller device via the asynchronous network, wherein the control information includes an identification of a third zone player, and wherein the control information directs the first zone player to (a) disengage from the first synchrony group, (b) join a second synchrony group with the third zone player, and (c) receive second audio information from the third zone player for playback in synchrony with the third zone player;” and “after receiving the control information from the controller device, (a) disengaging the first zone player from the first synchrony group, (b) joining the first zone player to the second synchrony group, (c) receiving the second audio information from the third zone player, and (d) playing the second audio information in synchrony with the third zone player” performed by a “first zone player” (claims 1, 15, 21). The combination of these elements was presented through multiple rounds of amendments during prosecution in response to several prior art rejections. However, it lacks written description in the specification as originally-filed. The specification does not disclose

or otherwise describe such a zone player in the claimed role in “a first synchrony group” receives the claimed control information, and disengages “from the first synchrony group” and then joins “a second synchrony group” to play the claimed role in the second synchrony group. The combination of elements is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to implement a zone player to perform the combination of these operations, without undue experimentation.

- “receiving control information from the controller device via the asynchronous network, wherein the control information includes an identification of a third zone player, and wherein the control information directs the first zone player to (a) disengage from the first synchrony group, (b) join a second synchrony group with the third zone player, and (c) receive second audio information from the third zone player for playback in synchrony with the third zone player” (claims 1, 15, 21). The element was presented through multiple rounds of amendments during prosecution in response to several prior art rejections. However, it lacks written description in the specification as originally-filed. The specification does not disclose or otherwise describe such control information that “includes an identification of a third zone player.” The specification also does not disclose or otherwise describe such control information that directs a zone player to perform all three actions “(a) disengage from the first synchrony group, (b) join a second synchrony group with the third zone player, and (c) receive second audio information from the third zone player for playback in synchrony with the third zone player.” This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to

implement such control information to include all the claimed information and directions, without undue experimentation.

- “after receiving the control information from the controller device (a) disengaging the first zone player from the first synchrony group, (b) joining the first zone player to the second synchrony group, (c) receiving the second audio information from the third zone player, and (d) playing the second audio information in synchrony with the third zone player” (claims 1, 8, 15). The element was presented through multiple rounds of amendments during prosecution in response to several prior art rejections. However, it lacks written description in the specification as originally-filed. The specification does not disclose or otherwise describe that the zone player performs the claimed operations after receiving the combination of the claimed information and directions in the control information from the controller device. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art how to implement the zone player to carry out the claimed operations after receiving all the claimed information and directions in the control information, without undue experimentation.
- “asynchronous network” (claims 1, 8, 15, 19, 21) and all claim elements reciting the term “asynchronous network” therein, including but not limited to “providing first device clock timing information to the second zone player over an asynchronous network” (claims 1, 8, 15), “playing first audio information in synchrony with the second zone player while the first zone player is in the first synchrony group, wherein all zone players in the first synchrony group playback the first audio information using the first device clock timing information that the first zone player provides to

the first synchrony group over the asynchronous network” (claims 1, 8, 15), “receiving control information from the controller device via the asynchronous network, wherein the control information includes ...” (claims 1, 8, 21), “a network interface configured to connect the first zone player to an asynchronous network” (claim 15), “receiving first control information from the controller device over the asynchronous network” (claim 15), “a network interface configured to connect the second zone player to the asynchronous network” (claim 19), “a network interface configured to connect the third zone player to the asynchronous network” (claim 21). The term “asynchronous network” was added in these claim elements during prosecution in response to a non-final rejection, but it lacks written description in the specification as originally-filed. Indeed, the specification of the ’498 patent makes no mention of any “asynchronous network.” “Asynchronous network” as well the claim elements reciting it are also not enabled. The specification fails to enable or teach a person or ordinary skill in the art how to implement the elements, without undue experimentation.

- “the first zone player transmitting a notification to the second zone player, wherein the notification indicates that the first zone player is disengaging from the first synchrony group” (claims 2, 9, and 16). The element was presented through amendments during prosecution in response to prior art rejections. However, it lacks written description in the specification as originally-filed. The specification does not disclose or otherwise describe that a master zone player notifies a non-master zone player, or a non-master zone player notifies another non-master zone player that it is disengaging from the first synchrony group. This element is also not enabled. The

specification fails to enable or teach a person of ordinary skill in the art to implement a zone player to notify a non-master zone player that it is disengaging from the first synchrony group, without undue experimentation.

- “the control information directs the first zone player to cease transmitting the first audio information and the first device clock timing information, and wherein the operations further cause the first zone player to cease transmitting the first audio information and the first device clock timing information to the first synchrony group” (claim 4), “the control information received by the first zone player from the controller device directs the first zone player to cease transmitting the first audio information and the first device clock timing information to the first synchrony group, and wherein the second tangible, non-transitory computer-readable memory further comprises additional instructions that, when executed, cause the first zone player to cease transmitting the first audio information and the first device clock timing information to the first synchrony group” (claim 11), and “the first set of functions performed in response to receiving the first control information further comprise the first zone player ceasing transmitting the first device clock timing information and the first audio information to at least the second zone player while contemporaneously playing the first audio information using the first device clock timing information” (claim 18). These elements were presented through amendments during prosecution in response to prior art rejections. However, they lack written description in the specification as originally-filed. The specification does not disclose or otherwise describe that a zone player ceases transmitting the first device clock timing information, or control information that directs the zone player to do so. This element

is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art to implement a zone player to cease transmitting the first device clock timing information, without undue experimentation.

- “all zone players in the second synchrony group playback the second audio information based on the first device clock timing information that the first zone player provides to the second synchrony group during synchronous playback and second playback timing information that the first zone player provides to the second synchrony group during synchronous playback” (claim 7, 14, 23). This element was presented through amendments during prosecution in response to prior art rejections. However, it lacks written description in the specification as originally-filed. The specification does not disclose or otherwise describe that zone players in a synchrony group playbacks audio information provided one zone player based on device clock timing information and playback timing information provided by another zone player. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art to configure zone players in a synchrony group playbacks audio information provided one zone player based on device clock timing information and playback timing information provided by another zone player, without undue experimentation.
- “while engaged in the first synchrony group with the first zone player, (a) transmitting the first audio information to the first zone player, (b) receiving the first device clock timing information from the first zone player, and (c) playing the first audio information in synchrony with the playback of the first audio information by the first zone player based on the first device clock timing information received from the first

zone player” (claim 19). This element was presented through amendments during prosecution in response to prior art rejections. However, it lacks written description in the specification as originally-filed. The specification does not disclose or otherwise describe that a zone player transmits audio information to another zone player while receiving device clock timing information from the other player, and then playbacks the audio information based on the device clock timing information. This element is also not enabled. The specification fails to enable or teach a person of ordinary skill in the art to configure a zone player to transmit audio information to another zone player while receiving device clock timing information from the other player, and then playback the audio information based on the device clock timing information, without undue experimentation.

- To the extent the above elements are recited or implied to be performed or organized in a certain order, in light of the specification, prosecution history, or Sonos’ apparent interpretation, such order also lacks written description and/or is not enabled.

#### **B. Indefiniteness and Other 112 Grounds**

To satisfy the definiteness requirement of 35 U.S.C. § 112, ¶ 2, the claims must particularly point out and distinctly claim the subject matter which the inventors regarded as their alleged invention such that one skilled in the relevant art would be reasonably apprised of the bounds of the Asserted Claims when read in light of the specification. *Nautilus, Inc. v. Biosig, Inc.*, 134 S.Ct. 2120, 2129 (2014) (Section 112, ¶ 2 “require[s] that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty”). The claims must also comport with the requirements of 35 U.S.C. § 112, ¶ 3, 4 (if they are dependent claims) and ¶ 6 (if they have means-plus-function limitations).

The specifications of the Asserted Patents do not inform one of ordinary skill in the art about the scope of the invention with reasonable certainty, or the claims fail the other requirements of section 112, with respect to the following terms (in the specified claims, all dependent claims, and any analogous claims), based on Linkplay’s present understanding of (and Sonos’s apparent interpretation of) the Asserted Claims, in light of the specification and file history.

**1. The '014 Patent**

Claim #	Term
25, 38	a memory for storing code for an application module
25, 38	the processor executing the code in the memory to cause the application module and the screen driver to perform operations of
25, 38	input interface
25, 38	a screen driver commanding the screen
25, 38	network interface
25	wherein any one of the players in the group serves as a zone group head
2, 26	wherein the first list becomes scrollable, when the available players do not fit in the screen
9, 33	wherein the manner includes one or more of highlighting, colors, explicit texts and graphs
10, 34	wherein the first list further shows at least one zone group
11	wherein the zone group includes at least two players
12	the configuration including information on how the two players are grouped
13, 35	selecting the zone group to be de-grouped from the first list
14, 36	wherein said disassociating the selected players comprises making the selected players available for grouping with a zone group
15, 37	wherein the another list becomes scrollable, when all the players within the zone group to be de-grouped do not fit in the screen.
17, 39	causing the audio volume to be adjusted in accordance with an adjustment to the volume meter; or causing the audio volume to be off, when a mute button is activated while the audio volume is on; and causing the audio volume to be on, when a mute button is activated while the audio volume is off.
19, 42	maintaining relative volume loudness difference among each of the players in the group
24, 44	wherein said adjusting the one of the volume meters includes causing a predetermined unit change in volume for every action by a user
25	displaying on a screen a first list showing at least available players; displaying a zone group including players from the available players when at least two of the available players are selected to form the zone group, wherein any one of the players in the group serves as a zone group head; synchronizing all players in the zone group in accordance with the zone

	group head; and adjusting a volume meter represented by an averaged value of audio volumes of the slayers in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.
38	displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such a group and adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the slayers in the group, and said 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
1, 25	displaying on a screen a first list showing at least available players
1, 25	displaying, when at least one of the players is selected as a zone group head, on the screen a second list showing at least some of the players that are eligible to be grouped with the zone group head / 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
1	forming a zone group started with the zone group head, after one or more players from the at least some of the players are selected to join the zone group
1, 25	synchronizing all players in the zone group / synchronizing all players in the zone group in accordance with the zone group head
1, 25	adjusting a volume meter represented by an averaged value of audio volumes of the players in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user / adjusting a volume meter represented by an averaged value of audio volumes of the slayers in the group, wherein said adjusting of the volume meter includes changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user.
8, 32	causing all players in the zone group to play an identical audio source
8, 32	presenting the zone group in a manner that indicates a grouping
16, 38	displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, when there is such a group/ displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such a group
16, 38	adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the players in the group
16, 38	changing a volume of each of the group of players synchronously in accordance with an adjustment made by a user
18, 41	adjusting the one of the volume meters for the group of players in a predetermined manner that appears that the group of players are being adjusted at the same time

21	the audio source is retrieved in form of audio data packets over the network
38	displaying on a screen a list showing a plurality of volume meters, at least one of the volume meters representing an audio volume of one of the players, and another one of the volume meters representing an audio volume of a group of players, if there is such a group
38	adjusting one of the volume meters as desired after one of the volume meters from the list is selected, wherein the one of the volume meters is for the group of players, represented by an averaged value of audio volumes of the players in the group, and said 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

## 2. *The '532 Patent*

Claim #	Term
1, 10, 22	information identifying a plurality of zones on a local area network (LAN) on which the controller is connected
1, 10	information identifying a plurality of zones on a local area network (LAN) on which the controller is connected, each zone comprising a zone player . . . configured to form, under control of the controller, a group of two or more zones that play audio content in synchrony with each other
1, 10	the controller configuring, over the LAN, a first zone player in the first group to (a) transmit audio content, playback timing for the audio content, and device clock information to every other zone player in the first group
1, 10	wherein the zone players in the first group remain independently clocked while playing the audio content in synchrony
1, 10	wherein the controller is not a member of the first group
22	causes an audio system controller to implement a method
22	each zone player is configured to form . . . a group of two or more zone players that play audio content in synchrony with each other
22	configuring one of the first or second zone players to (a) transmit audio content, playback timing for the audio content, and device clock information to the other of the first or second zone players
22, 34	wherein the first and second zone players remain independently clocked while playing the audio content in synchrony
34	wherein the controller device is not a member of the synchrony group
2, 4, 13, 16	controlling, over the LAN, at least one of the zone players to play the audio content in synchrony with the first group/ the controller controlling, over the LAN, at least one of the zone players to . . . play the next track in synchrony with the first group
2, 13	receiving a command at the controller to play audio content in synchrony by the first group
4	The method of claim 1, further comprising: the controller receiving a command . . .; and . . . the controller controlling
5	The method of claim 1, further comprising: the controller receiving a command . . .; and . . . the controller re-ordering . . .
6	The method of claim 1, further comprising: the controller receiving a command . . .; and . . . the controller configuring

6, 18	wherein after the at least a second zone player has formed the second group, the controller is not a member of the second group
7	The method of claim 1, further comprising: the controller receiving a command . . .; and . . . the controller configuring
8	The method of claim 1, further comprising: the controller receiving a command . . .; and . . . the controller configuring
8, 20	wherein after the at least one zone player of the particular zone has joined the first group of zones, . . . (ii) the controller is not a member of the first group
9	The method of claim 1, further comprising: the controller receiving a command . . .; and . . . the controller controlling
25	receiving a command at the controller to play audio content in synchrony by the first synchrony group
32	after the third zone player has joined the first synchrony group, . . . (ii) the controller is not a member of the first synchrony group

### 3. *The '357 Patent*

Claim #	Term
1, 8, 9	playback timing
1, 8, 9	network device / network device configured to control the first playback device and communicatively coupled to the first playback device over a local area network (LAN)
1, 8, 9	playback device
1, 8, 9	Wherein the first and second playback devices remain independently clocked during synchronous playback of the audio information
1, 9	device clock information
1	audio information / control information
8	clock time information
9	network interface
6, 14	The method of claim 5, wherein the status information further comprises an identification of a master playback device of the synchrony group.
18	The first playback device of claim 9, wherein the audio information comprises one of audio files or packetized streaming audio information
1, 8, 9	receiving, by a first playback device from a network device configured to control the first playback device and communicatively coupled to the first playback device over a local area network (LAN), control information comprising an address identifying a location of audio information available at an audio information source, wherein the audio information source is outside of the LAN / receive, from a network device configured to control the first playback device and communicatively coupled to the first playback device over a local area network (LAN), control information comprising an address identifying a location of audio information available at an audio information source, wherein the audio information source is outside of the LAN; and / receive, via the network interface from a network device configured to control the first

	<p>playback device and communicatively coupled to the first playback device over a local area network (LAN), control information comprising an address identifying a network location of audio information available at an audio information source, wherein the audio information source is outside of the LAN and after receiving the control information, (i) obtain, via the network interface from the audio information source outside of the LAN, the audio information; (ii) transmit, via the network interface of the first playback device to a second playback device, the audio information, playback timing information associated with the audio information, and device clock information of the first playback device; and (iii) play back the audio information in synchrony with the second playback device by using the playback timing information associated with the audio information and the device clock information of the first playback device to play back the audio information, wherein the first and second playback devices remain independently clocked during synchronous playback of the audio information.</p>
1, 8, 9	<p>transmitting, by the first playback device to a second playback device, the audio information, playback timing information associated with the audio information, and device clock information of the first playback device</p> <p>/</p> <p>transmit, to a second playback device, the audio information, playback timing information associated with the audio information, and clock time information for the first playback device</p> <p>/</p> <p>transmit, via the network interface of the first playback device to a second playback device, the audio information, playback timing information associated with the audio information, and device clock information of the first playback device</p>
1, 8, 9	<p>playing back, by the first playback device, the audio information in synchrony with the second playback device by using the playback timing information associated with the audio information and the device clock information of the first playback device to play back the audio information, wherein the first and second playback devices remain independently clocked during synchronous playback of the audio information</p> <p>/</p> <p>play back the audio information in synchrony with the second playback device by using the playback timing information associated with the audio information and the clock time information of the first playback device to play back the audio information, wherein the first and second playback devices remain independently clocked during synchronous playback of the audio information</p> <p>/</p> <p>play back the audio information in synchrony with the second playback device by using the playback timing information associated with the audio information and the device clock information of the first playback device to play back the audio information</p>
1, 8, 9	playback timing
1, 8, 9	network device / network device configured to control the first playback device and communicatively coupled to the first playback device over a local area network (LAN)
1, 8, 9	playback device
1, 8, 9	Wherein the first and second playback devices remain independently clocked during synchronous playback of the audio information
1, 9	device clock information

1	audio information / control information
8	clock time information
9	network interface
6, 14	The method of claim 5, wherein the status information further comprises an identification of a master playback device of the synchrony group.

**4. The '883 Patent**

Claim #	Term
1, 14, 20	playback device
1, 14, 20	detecting a triggering event that causes the playback device to enter a setup mode in which the playback device transmits at least a first message indicating that the playback device is available for setup
1, 14, 20	receiving a response to the first message that facilitates establishing an initial communication path with a computing device that is installed with an application for controlling the playback device
1, 14, 20	wherein the initial communication path with the computing device does not traverse the access point
1, 14, 20	transitioning from communicating with the computing device via the initial communication path to communicating with the computing device via the secure WLAN that is defined by the access point
1	a network interface that is configured to provide an interconnection with at least one data network
10	receiving a command related to playback of audio content
11, 19	wherein the command comprises a command to retrieve audio content for playback from an audio source that is accessible via a communication path that includes the secure WLAN; in response to receiving the command, retrieving the audio content from the audio source via the communication path that includes the secure WLAN
12	wherein the second message comprises a command for the playback device to adopt the network configuration parameters

**5. The '023 Patent**

Claim #	Term
1, 8, 14	playback device
1, 8, 14	arming the playback device so that receipt of a first type of media content preempts playback of a second type of media content
1, 8, 14	first type of media content; second type of media content
1, 8, 14	rearming the playback device so that subsequent receipt of the first type of media content preempts playback of the second type of media content.
3, 16	playing the second type of media content in synchrony with a second playback device.
5, 11	transmitting at least a portion of the second type of media content to a third playback device

6. *The '498 Patent*

Claim #	Term
1, 8, 15, 19	asynchronous network
1, 3, 4, 6, 8, 10, 11, 13, 15, 17, 19, 22	first device clock timing information
1	all zone players in the first synchrony group playback the first audio information using the first device clock timing information that the first zone player provides over the asynchronous network
8, 15	all zone players in the first synchrony group playback the first audio information using the first device clock timing information that the first zone player provides to the first synchrony group over the asynchronous network;
1, 8, 15	join a second synchrony group with the third zone player
1, 8, 15	joining the first zone player to the second synchrony group / joining the first zone player to the second synchrony group with the third zone player
3, 10, 17	while contemporaneously playing the first audio information using the first device clock timing information
4, 11	cease transmitting the first audio information and the first device clock timing information to the first synchrony group
12	the first audio information is different than the second audio information
6, 13, 22	all zone players in the first synchrony group playback the first audio information based on the first device clock timing information that the first zone player provides to the first synchrony group during synchronous playback and first playback timing information that the first zone player provides to the first synchrony group during synchronous playback
6, 13, 22	all zone players in the second synchrony group playback the second audio information based on second device clock timing information that the third zone player provides to the second synchrony group during synchronous playback and second playback timing information that the third zone player provides to the second synchrony group during synchronous playback
6, 13, 22	second device clock timing information
19	<p>wherein the second zone player comprises:</p> <p>a network interface configured to connect the second zone player to the asynchronous network;</p> <p>at least one processor; and</p> <p>tangible, non-transitory computer-readable memory comprising instructions that, when executed by the second zone player, cause the second zone player to perform a second set of functions comprising:</p> <p>while engaged in the first synchrony group with the first zone player, (a) transmitting the first audio information to the first zone player, (b) receiving the first device clock timing</p>

	<p>information from the first zone player, and (c) playing the first audio information in synchrony with the playback of the first audio information by the first zone player based on the first device clock timing information received from the first zone player;</p> <p>receiving second control information from the controller device; and</p> <p>after receiving the second control information from the controller device, ceasing playing the first audio information in synchrony with the playback of the first audio information by the first zone player based on the first device clock timing information received from the first zone player.</p>
19	<p>playing the first audio information in synchrony with the playback of the first audio information by the first zone player based on the first device clock timing information received from the first zone player</p>
19	<p>ceasing playing the first audio information in synchrony with the playback of the first audio information by the first zone player based on the first device clock timing information received from the first zone player</p>

## **XII. OTHER INVALIDITY GROUNDS**

These grounds are identified based on knowledge in Linkplay’s possession at this time.

Further investigation may uncover additional information to support these grounds or additional grounds for invalidity, and Linkplay reserves the right to supplement these contentions to include all such additional grounds as appropriate, after the Court’s claim construction ruling, if Sonos amends or alters its infringement contentions in any way, or after Linkplay has obtained meaningful discovery from the inventors, the prosecuting attorneys, third parties, and Sonos.

Each of the grounds below requires discovery from Sonos. Linkplay have issued discovery requests related to these issues to Sonos, whose responses were due but woefully deficient. Sonos’ deficient discovery responses prejudice Linkplay’s ability to further supplement its contentions.

### **A. Invalidity under 35 U.S.C. § 102(f)**

Some or all asserted claims of the Asserted Patents may be invalid under 35 U.S.C. § 102(f) for failure to name the proper inventors. For example, the ’014 patent and/or the ’532

patent and/or the '357 patent and/or the '498 patent are invalid because they named improper inventorship.

U.S. application No. U.S. 10/861,653 (the '653 application, now the '014 patent) was filed on June 5, 2004, naming Robert A. Lambourne as the sole inventor. The '653 Application was rejected on June 27, 2008, over U.S. Patent Publication No. 2007/0038999 published from the '217 application. In response, Sonos filed a joint declaration (Verified Statement of Facts and Declaration) of the originally named inventor, Robert A Lambourne, and the inventor of the '217 Application, Nicholas A. J. Millington, on August 8, 2008, and then a request under Rule 48 correcting inventorship to add Nicholas A. J. Millington as a co-inventor to the '653 application on September 15, 2008, along with an amendment to priority claim claiming the '653 application as a continuation-in-part of the '217 application.

The joint declaration stated “Prior to 06/05/2004, Robert A. Lambourne had been regularly and diligently working on projects that led to the conception and reduction to practice of the present invention,” and “prior to 04/01/2004, Nicholas A. J. Millington had been independently, regularly and diligently working on other projects that led to the filing of a patent application serial No.: 10/816,217 published in the Publication.” Then after their patent agent “concludes that the Examiner is correct and there is a substantial amount of disclosure in the present application being disclosed in the Publication,” Lambourne and Millington had several discussions with the executives of Sonos and “concluded that Nicholas A. J. Millington did contribute substantially to the conception and reduction to practice of the present invention and at least one claim in the above application.”

It is unclear under what circumstances Millington and Lambourne agreed to sign this joint declaration, and how the “several discussions” and “company records maintained by

Nicholas A. J. Millington” led Lambourne to conclude that Millington was a co-inventor. However, even taking the statements in the joint declaration for their face value, it is nonsensical how Millington, working independently from Lambourne and whose work resulted in the ’217 application naming Millington as the sole inventor, nevertheless “did contribute substantially to the conception and reduction to practice of” the ’653 application. The ’014 patent improperly named Millington as a co-inventor and thus invalid under 102(f), at least because his “substantially contribution” to the ’653 application is questionable.

On the other hand, given there is a substantial overlap between the disclosures of the ’653 application and the ’014 application (as stated in the joint declaration) including the subject matter claimed, and that Millington was found to “contribute substantially to the conception and reduction to practice of” the ’653 application, Lambourne likely also contributed substantially to the conception and reduction to practice of” the invention disclosed in the ’217 application. By virtue of the statements made in the joint declaration, Lambourne should also be a co-inventor of the ’532 patent, the ’357 patent, and the ’498 patent, each continuation stemming from the ’217 application, and both claims directed to subject matter overlapping with those in the ’653 application. However, both of the ’532 patent and the ’357 patent improperly named Millington as the sole inventor. They are invalid under 102(f) for at least this reason.

Further, because each of the ’532, ’357, ’498, and ’014 patents stem from the same ’217 application, each is invalid due to its connection to the ’217 application under the unclean hands doctrine. *See, e.g., Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240, 245, 19 USPQ 228, 230 (1933); MPEP 2012.

The ’014 patent, the ’532 patent, the ’357 patent, and the ’498 patent are invalid under 102(f) additionally because Millington did not conceive or reduce to practice the claimed

inventions by himself, but obtained the idea from someone else. Millington worked at Microsoft from June 1998 to April 2003. (<https://www.linkedin.com/in/nickmillington/>). In or near February 2003, another Sonos employee, Andrew Schulert, who also previously worked at Microsoft, contacted Millington about joining Sonos. (<https://www.wired.com/story/sonos-nick-millingtonexclusive-interview/>) Millington left Microsoft on April 3, 2003 and joined Sonos on April 7, 2003. On July 28, 2003, approximately three months after Millington left Microsoft, Sonos filed a provisional application No. 60.490,768, to which the '014 patent, the '532 patent and the '357 patent claimed priority. During the same timeframe, Microsoft was working on its own speaker synchronization solution, filing applications for at least U.S. Pat. App. Pub. No. 2002/015003 ("Gray") on April 17, 2001; U.S. Pat. No. 7,295,548 ("Blank I") on November 27, 200; U.S. Pat. App. Pub. No. 2004/0252400 ("Blank II") on July 13, 2003. Gray, Blank I, and Blank II, alone or in combination, disclose or render obvious the '014 patent, the '532 patent and the '357 patent. It appears that Millington copied at least part of the subject matter claimed in these patents from other Microsoft employees and/or conceived at least part of the claimed inventions during his time at Microsoft. On information and belief, there might be other individuals who contributed substantially to the inventions in the '014 patent, the '532 patent and the '357. Accordingly, the '014 patent, the '532 patent, the '357 patent, and the '498 patent are invalid under 102(f) because Millington is not a true inventor and/or someone else should be named as an inventor or co-inventor of each patent itself and/or under the unclean hands doctrine, one of more of the applications each stems from.

On information and belief, the '883 patent and the '023 patent are also invalid under 102(f) because at least one of the named inventors did not conceive or reduce to practice the claimed invention. The inventors derived the alleged inventions from a body of prior art

standards, references and systems that existed before filing.

**B. Invalidity under 35 U.S.C. § 102(c)**

The '014 patent, the '532 patent, the '357 patent, and the '498 patent are invalid under 35 U.S.C. § 102(c) because Sonos has abandoned the invention disclosed in U.S. Application No. 10/816,217 (the '217 application, and now Patent No. 8,234,395), to which these Asserted Patents are continuation or continuation-in-part. Sonos/the inventor essentially abandoned the rights to the invention by failing to take necessary steps to pursue the patent, including paying the required filing fees, effectively dedicating the invention to the public.

The prosecution history of the '217 application shows the following. The '217 application was filed April 4, 2004, with 29 independent claims and 548 total claims, requiring a payment of fees totaling \$6,255 even under the small entity status claimed by Sonos. However, the application was deliberately filed with no payment of any fees. The USPTO subsequently issued a Notice to File Missing Parts of Nonprovisional Application on June 18, 2004, requiring Sonos to pay the missing fees within two months, including a \$385 statutory basic filing fee, a late declaration filing surcharge of \$65, and additional claim fees of \$5870, totaling \$6320. Sonos did not respond or pay the fees, resulting in a notice of abandonment issued in the '217 application on March 15, 2005. On November 21, 2005, Sonos filed a response to the Notice, along with a Petition for Revival and a Preliminary Amendment to significantly reduce the number of claims. The Petition for Revival contained a boilerplate statement that "The entire delay in filing the required reply from the due date from the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional." However, this delay of over 15 months to respond to the Notice cannot be unintentional. For example, non-payment of fees (particularly without agreeing for the USPTO to charge deposit account) must be deliberate, and

Sonos knew that action would lead to abandonment. Non-payment of any fee upon filing, coupled with deferring the payment of the required fee (due on the filing date April 1, 2004) for nearly 20 months (until November 21, 2005), suggests Sonos did not intend to pursue a patent for the disclosed invention. The invention disclosed in the '217 application was abandoned on or before August 18, 2004, and was not properly revived. Sonos is barred under 102(c) to later file patent applications to pursue the abandoned invention, including those that were later issued as the '014 patent, the '532 patent, the '357 patent, and the '498 Patent.

Further, Sonos breached its duty of candor to the USPTO by misrepresenting the abandonment of the '217 application as unintentional, and as a result, each of the '014 patent, the '532 patent, the '357 patent, and the '498 patent stemming from the tainted '217 application are invalid under the unclean hands doctrine.

**C. Abandonment/Invalidity under 35 U.S.C. § 111(a)**

As set forth in 35 U.S.C § 111(a)(3)-(4), the “application shall be accompanied by the fee required by law,” and “Upon failure to submit the fee . . . , the application shall be regarded as abandoned.” In addition to the contentions above related to 102(c), the '217 application was also abandoned for failure to pay the required fees under 35 U.S.C § 111(a)(3)-(4) and not properly revived. The '217 application was abandoned due to violation of 35 U.S.C § 111(a)(3)-(4) because Sonos failed to pay the initial filing fees due April 1, 2004, and failed to respond to the Notice to File Missing Parts due August 18, 2004. Because the '217 application was abandoned and not co-pending when its continuation application No. 13/297,000 (the '000 application) was filed on November 15, 2011, the '000 application is not entitled to the priority date of the '217 application and should be deemed as filed on November 15, 2011. Therefore, the earliest effective filing date of the '532 patent and the '357 patent is no earlier than November 15, 2011.

As a result, the '532 patent and the '357 patent are anticipated by various publications from the '217 application or counterpart applications, including, e.g., U.S. Publication No. 2007/0038999 published February 15, 2007 (from the '217 application), WO 2005/013047 published February 10, 2005 (from the corresponding PCT/US2004/023102), and JP2007512718 published May 17, 2007 (from the corresponding Japanese application) under 35 U.S.C § 102(b).

Several Asserted Patents (or their applications) were also abandoned for failure to pay correct fees or invalid for being anticipated by the publications of the abandoned applications for failure to pay correct fees. Fee reductions are offered to patent applicants that qualify for “small entity” status. 37 C.F.R. § 1.27 defines small entities as including a “small business concern” that “(i) Has not assigned, granted, conveyed, or licensed, and is under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person, concern, or organization which would not qualify for small entity status as a person, small business concern, or nonprofit organization; and (ii) Meets the size standards set forth in 13 CFR 121.801 through 121.805 to be eligible for reduced patent fees.” Under 13 CFR 121.801, a concern is eligible for reduced patent fees is one

(a) Whose number of employees, including affiliates, does not exceed 500 persons; and

(b) Which has not assigned, granted, conveyed, or licensed (and is under no obligation to do so) any rights in the invention to any person who made it and could not be classified as an independent inventor, or to any concern which would not qualify as a non-profit organization or a small business concern under this section.

Sonos claimed “small entity” status and paid reduced fees in many applications prior to

2014, including in one or more Asserted Patents and in patents that one or more Asserted Patents are a continuation of. On information, Sonos received investment fundings from several sources throughout 2005 to 2013, such as tens of millions in funding from a venture capital company BV capital in 2005. One or more of these funding sources qualify as affiliates of Sonos under 13 CFR 121.801. *See* 13 CFR 121.103 (setting forth determining affiliation and control is a totality of the circumstance inquiry, taking into account factors like ownership, management, and contractual obligations of the company) (“Concerns and entities are affiliates of each other when *one controls or has the power to control the other, or a third party or parties controls or has the power to control both*. It does not matter whether control is exercised, so long as the power to control exists.”). The accumulative total of employees, including Sonos, such affiliates of Sonos, and the portfolio companies controlled by the affiliates, exceeded 500, Sonos did not qualify for its claimed “small entity status” and was not entitled to small entity fees under 35 U.S.C. 41(h)(1), after receiving the funding from such affiliates. *See Size Appeal of Novalar Pharmaceuticals, Inc.*, SBA No. SIZ-4977 (2008)(finding Novalar not qualify as a small entity because its VC firm possess sufficient control to qualify as an affiliate, not only of Novalar but also of 34 other companies within the VC firm’s portfolio, and the cumulative total of employees, spanning Novalar, the VC firm itself, and the 34 portfolio companies, exceeded the 500-employee threshold specified by SBA guidelines). As a result, the following Asserted Patents (or their applications) were abandoned for failure to pay correct fees or invalid for being anticipated by the publications of the abandoned applications:

- The '014 patent - the '014 patent (and its application) was abandoned due to failure to pay correct fees. The '014 patent was filed Jun 5, 2004, and all fees were paid under small entity status including filing fees paid June 5, 2004 through issue fees paid on

June 19, 2009, until Sonos filed a Notification of Loss of Entitlement to Small Entity Status on February 1, 2013, and the fee deficiencies were never corrected.

- The '023 patent - U.S. Application No. 13/0898,167 (the '167 application, and now U.S. Patent No. 8,938,312) was filed April 18, 2011, and paid fees including the filing fees under small entity status, until Sonos filed a Notification of Loss of Entitlement to Small Entity Status on February 17, 2014, and the filing fee deficiency was never corrected. Therefore, the '167 application was abandoned due to failure to pay correct fees and its continuation applications do not entitle to the priority of its filing date. The earliest possible priority of the '023 patent is December 5, 2014 (when U.S. Application No. 14/561,421 was filed as a continuation of the '167 application. The '023 patent is therefore fully anticipated by U.S. Publication No. US2012/0263318 published on October 18, 2012 (from the '167 application).
- The '532 patent, the '357 patent and the '498 patent - Sonos paid all fees under small entity status in the '217 application after it was revived including the issue fees paid on January 27, 2012, until Sonos filed a Notification of Loss of Entitlement to Small Entity Status on January 21, 2016, and the filing fee deficiency was never corrected. Therefore, the '217 application was abandoned additionally due to failure to pay correct fees and its continuation applications do not entitle to the priority of its filing date. Indeed, the '000 application filed on November 15, 2011 as a continuation to the '217 patent had the same fee deficiency as at least the filing fees were paid incorrectly paid under small entity status. Therefore, the '000 application was also abandoned and its continuation applications do not entitle to the priority of its filing date. As a result, the '532 patent, the '357 patent, and the '498 patent are only

entitled to their own filing dates and are anticipated by various publications from the '217 application or counterpart applications, including, e.g., U.S. Publication No. 2007/0038999 published February 15, 2007 (from the '217 application), WO 2005/013047 published February 10, 2005 (from the corresponding PCT/US2004/023102), and JP2007512718 published May 17, 2007 (from the corresponding Japanese application) under 35 U.S.C § 102(b).

- Because the '357, '532, and '498 patents each stem from at least one of the '217 application, '000 application, and other related applications, each is further invalid and/or unenforceable through the unclean hands doctrine due to the breach of candor committed by Sonos by failing to correct its small entity status as outlined above.

**D. Abandonment/Invalidity under 35 U.S.C. § 122(B)**

The '653 application was abandoned under 35 U.S.C. § 122(b)(2)(B)(iii) and should not have been issued as the '014 patent, because Sonos made a request for non-publication under 35 U.S.C. § 122(b)(2)(B)(i) on June 5, 2004, but subsequently filed an international application of the subject matter, PCT/US04/23102 on July 2, 2004, and did not withdraw the non-publication request. *See* 35 U.S.C. § 122(b)(2)(B)(iii) (“An applicant who has made a request under clause (i) but who subsequently files, in a foreign country or under a multilateral international agreement specified in clause (i), an application directed to the invention disclosed in the application filed in the Patent and Trademark Office, shall notify the Director of such filing not later than 45 days after the date of the filing of such foreign or international application. A failure of the applicant to provide such notice within the prescribed period shall result in the application being regarded as abandoned”). The PCT application substantially corresponds to the '217 application and is directed to the invention disclosed in the '653 application. *See*

Verified Statement of Facts and Declaration filed in the '653 application (“there is a substantial amount of disclosure in the present application being disclosed in the Publication” of the '217 application). The PCT application was published as WO 2005/013047 on February 10, 2005. However, Sonos did not inform the USPTO within 45 days of the PCT filing. As a result, the '653 application was abandoned under 35 U.S.C. § 122(b)(2)(B)(iii) and should have never been issued as the '014 patent.

Dated: February 27, 2025

/s/ Mandy Song

OF COUNSEL:

Mandy Song, Ph.D.  
mandy.song@bayes.law  
Gavin Ye, Ph.D.  
gavin.ye@bayes.law  
Kris Teng  
kris.teng@bayes.law

BAYES PLLC  
8260 Greensboro Dr, Ste 625  
McLean, VA 22102  
Tel: (703) 995-9887

Karen E. Keller (No. 4489)  
Andrew E. Russell (No. 5382)  
Emily S. DiBenedetto (No. 6779)  
Lindsey M. Gellar (No. 7202)  
SHAW KELLER LLP  
I.M. Pei Building  
1105 North Market Street, 12th Floor  
Wilmington, DE 19801  
(302) 298-0700  
kkeller@shawkeller.com  
arussell@shawkeller.com  
edibenedetto@shawkeller.com  
lgellar@shawkeller.com

*ATTORNEYS FOR DEFENDANT  
LINKPLAY TECHNOLOGY INC.*