]**[IN THE UNITED STATES DISTRICT COURT**
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

INGENIOSPEC LLC, Plaintiff, v. **APPLE INC.**, Defendant.	**Case No. 1:25-cv-00867-ADA** **JURY TRIAL DEMANDED**

DEFENDANT APPLE INC.'S PRELIMINARY INVALIDITY CONTENTIONS

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I. Introduction

Pursuant to the Agreed Scheduling Order in this case (Dkt. 22; "Order"), Defendant Apple Inc. ("Apple") hereby provides the following Preliminary Invalidity Contentions and an accompanying document production. Apple has also made source code available for review at Finnegan's Washington, D.C. office.

On June 5, 2025, Plaintiff IngenioSpec, LLC ("IngenioSpec") filed its complaint against Apple, in which it alleged that Apple infringes, among others, U.S. Patent Nos. 8,582,789 ("the '789 Patent"), 11,644,693 ("the '693 Patent"), 11,921,355 ("the '355 Patent"), 8,112,104 ("the '104 Patent"), 12,001,599 ("the '599 Patent"), and 12,044,901 ("the '901 Patent") (collectively, the "Asserted Patents"). In its Preliminary Infringement Contentions served on September 19, 2025, IngenioSpec identified the following Asserted Claims of the Asserted Patents:

Patent	Asserted Claims
The '789 Patent	1-8, 10-20, 22-24, 26-31, 33-35, 39-41, 43-54, 62-63, 75-79, 81-82
The '693 Patent	1-38, 42-76
The '355 Patent	1-3, 5-19, 21-54, 57-70, 72, 75-82, 85-92, 95-100
The '104 Patent	1-3, 5-24, 26-37, 39-47
The '599 Patent	1-25
The '901 Patent	1-16, 18-32, 34-59[1]

[1] IngenioSpec lists claim 3 of the '901 as asserted against the Apple AirPods 2 but failed to include claim 3 in its claim chart. Defendant considers claim 3 as no longer at issue in this case. However, Defendant included claim 3 in its Invalidity Contentions for completeness.

II. General Reservations

These contentions are subject to the reservations stated herein. They are also subject to revision and amendment, including pursuant to Federal Rule of Civil Procedure 26(e) and any order of the Court, to the extent appropriate in light of further investigation and discovery regarding any defense asserted by Apple; the Court's claim construction related to the Asserted Claims; analyses and opinions of expert witnesses concerning claim construction, infringement, invalidity, and unenforceability issues; and/or positions that IngenioSpec may take concerning the same.

This action is in its early stages, and Apple's investigation of IngenioSpec's claims and Apple's defenses is ongoing. Apple makes these disclosures based on information currently available to Apple. As such, these contentions and Apple's accompanying document production are provisional and subject to further revision, should IngenioSpec amend its Preliminary Infringement Contentions in any way. Further, because discovery is ongoing and Apple continues to search for and analyze relevant prior art, Apple reserves the right to revise, amend, and/or supplement the information provided in these contentions, including by identifying, charting, and relying on additional references, should Apple's further search and analysis yield further information or references, consistent with the Federal Rules of Civil Procedure. Further, Apple reserves all rights to revise, amend, and/or supplement these contentions when IngenioSpec provides additional discovery.

The Court has not yet construed any claim, term, or phrase of the Asserted Patents in this case. These contentions are based on Apple's present understanding of the Asserted Claims and the apparent interpretations and constructions thereof by IngenioSpec in its Infringement Contentions. Apple reserves the right to modify or supplement these contentions in response to the Court's construction of any claim, term, or phrase of the Asserted Patents or any arguments IngenioSpec may make in connection with the Court's claim construction proceedings.

These contentions, including the attached claim charts, may reflect alternative positions dependent upon claim construction and scope. These contentions are not an admission by Apple that the Accused Products, including any current or past versions thereof, are covered by or infringe any Asserted Claims. Furthermore, by including prior art that anticipates or renders obvious claims based on IngenioSpec's apparent claim construction, Apple does not thereby adopt IngenioSpec's apparent claim construction. These Invalidity Contentions do not represent an agreement with IngenioSpec's views as to the meaning of, written description support for, or enablement of any asserted claim.

Prior art not included in this disclosure may become relevant. Apple is currently unaware of the extent, if any, to which IngenioSpec may contend that certain limitations of the Asserted Claims are not disclosed in the prior art identified by Apple. Apple reserves the right to identify other relevant prior art with respect to such allegedly missing limitation(s).

The claim charts attached hereto as exhibits cite portions, teachings, and disclosures of certain prior art references as applied to features of the Asserted Claims. The cited portions of prior art identified herein are exemplary only. Apple may rely on the entireties of the prior art references listed herein, including uncited portions of said references, as well as additional information including products, documents, materials, and expert testimony. Further, persons skilled in the art may view an item of prior art in the context of other publications, literature, products, and understandings.

Apple further intends to rely on admissions concerning the scope of the prior art relevant to the Asserted Patents found in, inter alia: the patent prosecution history for the Asserted Patents; any related patents and/or patent applications; any patents and/or patent applications naming as an inventor any inventor of the Asserted Patents; any patents and/or patent applications filed by and/or

assigned to IngenioSpec or any of its affiliates; deposition testimony of, e.g., the named inventors of the Asserted Patents and any related patents and/or patent applications in this action or any other action; and the papers filed and evidence submitted by IngenioSpec in connection with this action or IngenioSpec's other actions involving the Asserted Patents ("Other Actions") or any other related patents, including patents in the same field as the Asserted Patents.

The references cited herein disclose the elements of the Asserted Claims explicitly or inherently, and they also demonstrate the state of the art in the relevant timeframe. The suggested obviousness combinations are provided in the alternative to Apple's anticipation contentions and are not to be interpreted to suggest that any reference included in the combinations is not by itself anticipatory. Further, the combinations and grounds for invalidity listed herein are exemplary and not exhaustive. There are many possible invalidating combinations of the references listed herein, and it is not practical, at this early stage, to identify and list all potentially relevant combinations without the benefit of further factual investigation and prior to claim construction proceedings. Moreover, the use of "and," "or," or "and/or" when describing such exemplary combinations herein, including in the accompanying claim charts, shall be understood as "and/or" to include all such combinations of the identified references and/or systems.

In addition to the prior art identified below and in the accompanying claim charts, Apple hereby incorporates by reference any additional prior art and invalidity contentions that have been or will be disclosed in the Other Actions and any other action involving the Asserted Patents. Apple's incorporation by reference also includes any prior art, analysis, arguments, and admissions in the prosecution history of the Asserted Patents and patents related thereto as well as in any *inter partes* review and *ex parte* reexamination proceedings at the U.S. Patent and Trademark Office related to the Asserted Patents.

Apple reserves the right to assert that the Asserted Claims are invalid under pre-AIA 35 U.S.C. § 102(f) in the event Apple obtains evidence that any inventor in the Asserted Patents did not himself coinvent the subject matter claimed therein, or that the Asserted Patents otherwise fails to name the correct inventor(s). Should Apple obtain such evidence, it will provide the name of any person from whom, and the circumstances under which the alleged invention or any part thereof was derived, or the name of any person who Apple contends is inappropriately named or not named as an inventor.

Apple also reserves the right to challenge any terms of any Asserted Claims under 35 U.S.C. § 112 beyond the grounds outlined herein, including by arguing that they are indefinite, not supported by the written description, or not enabled. Nothing stated herein shall be construed as a waiver of any argument available under 35 U.S.C. §§ 101, 102, 103, and/or 112.

III. U.S. Patent No. 8,582,789

A. Invalidity Under 35 U.S.C. §§ 102 and 103

1. Identification of Prior Art

Apple identifies the following prior art that anticipates and/or renders obvious, either alone or in combination with other references, one or more Asserted Claims of the ’789 Patent. Apple also incorporates by reference each and every prior art reference of record in the prosecution history of the ’789 Patent and patents or patent applications related to the ’789 Patent, as well as the prior art referred to in the specification of the ’789 Patent.

In these contentions, Apple identifies each item of prior art, including: (1) each patent or patent application constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) by its patent or publication number, country of origin, and date of filing, issue, or publication; and (2) each non-patent publication constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) by its title, date of publication, and, where feasible, author, and publisher.

Apple further may rely on inventor admissions concerning the scope of the prior art relevant to the ’789 Patent found in, inter alia: the specification and figures of the ’789 Patent; the patent prosecution histories for the ’789 Patent and related patents, patent applications, reissues, and/or reexaminations; any deposition testimony of the named inventors of the ’789 Patent; and the papers and evidence submitted by IngenioSpec in this action.

Apple identifies the following patents, patent applications, and non-patent publications as anticipating and/or rendering obvious, either alone or in combination with one or more other prior art references, one or more Asserted Claims of the ’789 Patent under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) and/or 35 U.S.C. § 103:

Patent No./ Publication No./ Printed Publication	**Bates. No.**	**Filing/ Publication/ Issue Date**	**First Named Inventor/ Author**	**Prior Art Status (Pre-AIA)**
US5721783A	APL-INGENIO_00821567	Filed on June 7, 1995, and issued on February 24, 1998	Anderson	102(a), (b), and (e)
US7245730B2	APL-INGENIO_00821937	Filed on January 13, 2003, and issued on July 17, 2007	Enzmann ’730	102(e)
US20040136555A1	APL-INGENIO_00821427	filed on January 13, 2003, and published on July 15, 2004	Enzmann ’555	102(e)
US20040170086A1	APL-INGENIO_00821441	Filed on October 23, 2003 with a priority date of October 27, 2002, and published on September 2, 2004	Mayer	102(e)
WO2001054458A2	APL-INGENIO_00818252	Filed on January 18, 2001, and published on July 26, 2001	Eaton	102(a), (b), and (e)
US5636285A	APL-INGENIO_00821562	Filed on April 27, 1995, and issued on June 3, 1997	Sauer	102(a), (b), and (e)

Patent No./ Publication No./ Printed Publication	Bates. No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US6389142B1	APL-INGENIO_00821672	Filed on March 31, 1998, and issued on May 14, 2002	Hagen	102(a), (b), and (e)
WO1998031193A1	APL-INGENIO_00822279	Filed on January 9, 1998, and published on July 16, 1998	Fretz	102(a), (b), and (e)
US20040208333A1	APL-INGENIO_00821459	Filed on April 15, 2004, and published on October 21, 2004	Cheung	102(b)
US20010041602A1	APL-INGENIO_00815909	Filed on May 2, 1997 and published on November 15, 2001	Berger	102 (a), (b), and (e)
WO1999005840A1	APL-INGENIO_00822307	filed on July 24, 1997, and published on February 4, 1999	Dejaco	102 (a), (b), and (e)
US3829623A	APL-INGENIO_00841473	Filed on May 8, 1972, and issued on August 13, 1974	Willis	102 (a), (b), and (e)
US Statutory Invention Registration H417		Filed on March 5, 1987, and published on January 5, 1988	Miles	102 (a), (b), and (e)

Apple further identifies the following prior art apparatuses/systems which are understood to be prior art under 35 U.S.C. §§ 102(a), (b), and/or (g). With this disclosure, Apple identifies by Bates range exemplary material describing the prior art systems and/or exemplary components thereof. Moreover, each of the references identified in the Related References column of the following table is also a prior art reference in its own right and anticipates and/or renders obvious the Asserted Claims of the ’789 Patent. Apple reserves the right to supplement its identified prior art apparatuses/systems and the evidence thereof, both listed here and in the attached charts, based on any responses received to third-party subpoenas during the court of discovery.

Digital Hearing Aid (DHA) System: Related References	Bates No.
Phonak – Claro 211 Product Information	APL-INGENIO_00823071
Phonak- Trends in Amplification	APL-INGENIO_00824556
Phonak - SmartLink SX User Guide	APL-INGENIO_00840635
Phonak – Annual Report (2003–2004)	APL-INGENIO_00820743
Phonak Campus S_ Accessories	APL-INGENIO_00864115
Phonak SmartLink SX Product Information	APL-INGENIO_00824437
Lewis – Speech perception in noise: directional microphones (2004)	APL-INGENIO_00864067
Phonak and Other DHA – Manufacturers News Article	APL-INGENIO_00814243
Phonak – BTE Elite Article	APL-INGENIO_00824465
Phonak Campus-S-User-Manual	APL-INGENIO_00824386
Phonak Claro – A World First from Phonak	APL-INGENIO_00824469
Phonak Claro – Remote control WatchPilot and Claro dAZ	APL-INGENIO_00824468
Phonak Claro - Technology of the Digital Future	APL-INGENIO_00864117
Phonak Claro – World Premiere	APL-INGENIO_00824472
Phonak – Field Study News Article re PersonalLogic	APL-INGENIO_00824477
Phonak – FM Transmitters including Campus S and TelCom	APL-INGENIO_00864124

Phonak – History of Various Hearing Aid Manufacturers	APL-INGENIO_00824378
Phonak – Media Release re Product Offerings in F2003/2004	APL-INGENIO_00864137
Phonak Perseo with PersonalLogic Article	APL-INGENIO_00824470
Phonak – Product Lines with Claro	APL-INGENIO_00824469
Phonak – The Hearing Review Article re Adults' Use of FM Systems	APL-INGENIO_00820949
TelCom User Guide	APL-INGENIO_00824439
Phonak – Collections 2002 Product List	APL-INGENIO_00822999
Phonak – Fitting Guide for MLxi and MLxi Baha	APL-INGENIO_00864126
Phonak MicroLink MLxS Product Information	APL-INGENIO_00864122
Phonak - SmartLink SX - FM Systems Manual	APL-INGENIO_00840621
Phonak Semi-Annual Report per September 30, 2003	APL-INGENIO_00824425
Phonak Campus S – Henry Article re Selection, Application and Integration of FM Systems	APL-INGENIO_00820153
Phonak - Hearing Aid Museum re SmartLink SX FM System	APL-INGENIO_00824416
Phonak – Microlink User Guide	APL-INGENIO_00824500
Phonak – Online Interview re Perseo (April 7, 2003)	APL-INGENIO_00820831
Phonak – Perseo Brochure	APL-INGENIO_00824477
Phonak – The Hearing Review Article re Perseo (Sep. 5, 2003)	APL-INGENIO_00820949

Valente - Effect of type of noise and loudspeaker array on the performance	APL-INGENIO_00840926
Oticon – DigiFocus Compact User Instructional Brochure	APL-INGENIO_00820697
Oticon – DigiFocus Description	APL-INGENIO_00820716
Oticon DigiFocus – What Users Say About DigiFocus	APL-INGENIO_00820696
Oticon – DigiFocus White Paper (1996)	APL-INGENIO_00820685
Oticon – LA Time Article re THE GOODS: The Sound Wave of the Future (Nov. 10 1995)	APL-INGENIO_00820728
Oticon – News Release re Audiologists Test Breakthrough In Hearing Care (June 19, 2006)	APL-INGENIO_00820731
Oticon – Products Index	APL-INGENIO_00820734
Phonak FM Systems Manual - Preventative Maintenance and Trouble Shooting Guide	APL-INGENIO_00841284
MicroSound/EduLink Manufacturers News	APL-INGENIO_00840998
EXPRESSfit Article	APL-INGENIO_00820505
Nicolet Phoenix 1996	APL-INGENIO_00820151
Nicolet Phoenix Article	APL-INGENIO_00820507
Nicolet Phoenix – Audible Difference	APL-INGENIO_00824363
Nicolet Phoenix BTE	APL-INGENIO_00824369
Project Phoenix	APL-INGENIO_00821132
The Automatic Directional Problem – Audiology Online	APL-INGENIO_00840669

FM Hearing Systems	APL-INGENIO_00823075
50 years of hearing instruments	APL-INGENIO_00819345
ReSound 510k	APL-INGENIO_00819353
Pilot Headsets	APL-INGENIO_00819218
Sennheiser HMEC 200 Aviation Headsets	APL-INGENIO_00821137
Sennheiser HMEC 200 Headset Roundup - AOPA	APL-INGENIO_00821139
Sennheiser HMEC 222 NoiseGard - Avionik Zentrale - Pilot Headsets & Avionics	APL-INGENIO_00821151

In addition to the above prior art references and apparatuses/systems, Apple may rely on additional documents and evidence that disclose or describe the general state of the art and knowledge of a POSITA at the time of the purported inventions.

Apple also incorporates here by reference all reexaminations and *inter partes* review proceedings involving the ’789 Patent.

Charts attached hereto as Exhibits A-1 through A-5 set forth exemplary citations establishing where in the prior art references each element of the Asserted Claims are found, exemplary combinations of references, and exemplary motivations to combine the references. While the exhibits reflect specific exemplary combinations of reference, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Apple’s inclusion of exemplary combinations, in view of the factors and

motivations identified here, does not preclude Apple from identifying other invalidating combinations and/or motivations as appropriate.

B. Invalidity Under 35 U.S.C. § 112

Based on a preliminary investigation and limited discovery to date, Apple identifies the following grounds of invalidity under 35 U.S.C. § 112. Apple reserves the right to modify or supplement these contentions to identify further bases for invalidity under 35 U.S.C. § 112, e.g., based on the Court's claim construction or further discovery. As Apple best understands IngenioSpec's allegations at this time, the Asserted Claims fail to meet the requirements of 35 U.S.C. § 112 for at least the reasons discussed below.

The Asserted Claims of the '789 Patent fail the written description requirement of § 112 in view of at least the following claim terms and phrases. Apple's contentions that the following claims are invalid under § 112 are made in the alternative and do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the Asserted Claims or that any of the Asserted Claims are not anticipated or rendered obvious by any prior art. The claims and limitations addressed below are merely examples and are not intended to be limiting or exhaustive. Apple reserves all rights to amend these contentions under 35 U.S.C. § 112, including after one or more Asserted Claims are ultimately construed by the Court, in response to any interpretation of one or more Asserted Claims embodied in IngenioSpec's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Apple additionally reserves the right to provide additional explanation and/or argument for these contentions under § 112, including, e.g., based on expert testimony.

1. Lack of Written Description

The Asserted Claims of the '789 Patent are invalid because the specification of the '789 Patent does not provide an adequate written description to support the scope of the claims sought

by IngenioSpec in furtherance of its infringement theories. Title 35 of the United States Code § 112, ¶ 1 requires a patent specification to contain "a written description of the invention." The written description "must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (citations omitted). The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" by the time the application is filed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted). To satisfy the written description requirement, "the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). "[E]nough [of the invention] must be included to convince a person of skill in the art that the inventor possessed the invention . . . ." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

The following claim limitations in the '789 Patent lack written description under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claims 1 and 13 and the claims dependent therefrom	"at least one hearing characteristic of the user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "hearing characteristics" as general audio device settings.
Claim 30 and the claims dependent therefrom	"wherein the at least one hearing characteristic of the user is determined via calibrating the user's hearing at least across the one or more frequencies to generate at least a portion of the hearing profile of the user, and wherein the hearing profile is stored in the hearing enhancement apparatus."	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., a "hearing profile" and how it differs from the claimed "hearing characteristics."
Claims 1 and 13 and the claims dependent therefrom	"a speaker configured to generate audio output signals from the modified signals for the user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "speakers" comprising in-ear speakers.

C. Invalidity Under 35 U.S.C. § 101

The Asserted Claims of the '789 Patent are invalid under 35 U.S.C. § 101, particularly in view of IngenioSpec's apparent interpretations of the Asserted Claims in its infringement contentions. For example, IngenioSpec alleges that a wide variety of functionality meets the Asserted Claims of the '789 Patent, including the "modified signals based on at least one hearing characteristic of the user" limitation. This alleged functionality includes "Adaptive EQ," "boosting or attenuating certain frequency bands," and "[s]witch[ing] between noise control modes," such as

active noise cancellation and transparency modes. Plaintiff's Preliminary Infringement Contentions, Ex. A ('789 patent) at 42-83. As explained below, particularly under IngenioSpec's apparent claim interpretations, the Asserted Claims of the '789 Patent are directed to the abstract idea of modifying or customizing audio output signals based on a user's hearing characteristics, impairment, or preferences. And as underscored by IngenioSpec's contentions, the Asserted Claims of the '789 Patent fail to transform that abstract idea into a practical application. Instead, as interpreted by IngenioSpec, the '789 Patent is broad enough to encapsulate processing of audio signals using generic components and provides no proposed improvement (as demonstrated by IngenioSpec reading its claims onto, for example, "noise cancellation" which was undisputedly commonplace before the '789 Patent's priority date). The Asserted Claims of the '789 Patent fail to disclose any detail regarding how such audio customization should be performed and instead broadly covers all such manners of customization under IngenioSpec's apparent interpretation. *See Elec. Power Grp, LLC v. Alstom S.A.*, 850 F.3d 1350, 1356 (Fed. Cir. 2016) (finding claims ineligible when "rather than claiming some specific way of enabling a computer to [solve a problem] . . . they purport to monopolize every potential solution to the problem") (cleaned up); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 766-69 (Fed. Cir. 2019) ("[P]atent law does not authorize anyone to preempt.").

A claim is ineligible when it (1) is directed to an abstract idea; and (2) fails to recite significantly more than the abstract idea. *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166-67 (Fed. Cir. 2018) (citing *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217 (2014)). At step one, the court determines if the claims are "directed to" an abstract idea by looking at "the focus of the claimed advance over the prior art." *Trinity Info Media, LLC v. Covalent, Inc.*, 72 F.4th 1355, 1361 (Fed. Cir. 2023). Claims are directed to an abstract idea if they are equivalent or

analogous to human activity or can be performed mentally. *E.g.*, *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011). So are claims that focus on "collecting information, analyzing it, and displaying certain results." *Elec. Power Grp.*, 830 F.3d at 1353 (Fed. Cir. 2016). Likewise, claims are abstract if they provide "only a result-oriented solution, with insufficient detail for how a computer accomplishes it." *Intell. Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017); *see also Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1244 (Fed. Cir. 2016) ("[A] claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter.").

At step two, the additional elements "must be more than 'well-understood, routine, conventional activity.'" *Intell. Ventures I LLC v. Cap. One Fin. Corp.*, 850 F.3d 1332, 1341 (Fed. Cir. 2017) (citation omitted). Claim elements that implement an abstract idea using generic components or "well-understood, routine, conventional activities" are not inventive and do not pass step two. *Alice*, 134 S. Ct. at 2357-60. Nor do claim elements that simply confine the claims to a "particular field of use or technological environment." *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1363-66 (Fed. Cir. 2015); *see also In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607 613 (Fed. Cir. 2016) ("[R]ecitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea.").

Under *Alice* step one, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '789 Patent are directed to the abstract idea of modifying or customizing audio output signals based on a user's hearing characteristics or hearing impairment. For example, representative claim 1 of the '789 Patent recites: "an audio system … configured to up-convert [] received input signals into up-converted signals to be wirelessly transmitted; a wireless receiver configured to wirelessly receive the up-converted signals; a down-converter configured to down-

convert the received up-converted signals into down-converted signals; a modifier configured to modify the down-converted signals into modified signals based on at least one hearing characteristic of the user."

Representative claim 1 and the remaining Asserted Claims of the '789 Patent thus fall within the familiar category of ineligible claims for manipulating and outputting data. *See Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1349-50 (Fed. Cir. 2014) ("The claims' only description of the device profile is that it comprises 'first data for describing' color information and 'second data for describing' spatial information. The claims encompass all embodiments of the information contained in the device profile, regardless of the process through which this information is obtained or the physical medium in which it is stored."); *see also RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("A process that started with data, added an algorithm, and ended with a new form of data [i]s directed to an abstract idea.")

The Asserted Claims of the '789 Patent are also analogous to human activities performed without computers. *See, e.g.*, *RecogniCorp*, 855 F.3d. at 1326; *CyberSource*, 654 F.3d at 1371. For example, a person speaking to a hearing-impaired person often speaks louder or slower, depending on which manner of speaking is easier for the hearing-impaired person to understand. Likewise, individuals who are hearing impaired often manually adjust their audio devices (e.g., radios, televisions, etc.) to better hear the content. These claims only automate those human activities, demonstrating their abstractness.

Under *Alice* step two, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '789 Patent fail to provide an inventive concept and instead implement the abstract idea using generic components and well-understood, routine, and conventional activities.

For example, representative claim 1 recites generic computer elements such as an "audio system," a "wireless receiver," a "down converter," a "modifier," and a "speaker" configured to perform the recited functions. These generic components implementing conventional activity fail to transform the claims into something more than an abstract idea or otherwise demonstrate an inventive concept.

Claim 1 is representative, and remaining Asserted Claims of the '789 Patent, 2-8, 10-12, 14-20, 22-24, 26-31, 33-35, 39-63, 75-79, and 81-82, add nothing to claim 1's abstract idea. *See Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (analyzing one representative claim is appropriate where others "are substantially similar [and] recite little more than the same abstract idea"). Independent claim 13 mirrors claim 1, adding additional generic limitations such as a hearing enhancement apparatus. These are not meaningful differences.

For example, dependents claim 45 and 63 recite the additional limitation of volume control via voice commands. This was conventional, as demonstrated in the accompanying claim charts.

As another example, dependent claims 16, 22, and 60 recite modifying down converted signals based on a noise level of the environment. Dependent claims 43-44 and 81 similarly recite altering a power level of the output signals based on a noise level of the environment, and dependent claims 49, 53, and 57 similarly recite changing the output signals based on sound in the environment. Dependent claim 44 further recites preventing further increase in the power of the output signals when the noise level goes beyond a predetermined threshold. These limitations were conventional, as admitted by the '789 Patent and as demonstrated in the accompanying claim charts. '789 Patent, at 9:19-29. These claims add nothing inventive to the abstract idea as modifying the audio signals based on environmental noise (e.g., raising the volume in a louder

environment or providing noise cancellation) is abstract and the claimed functionality for doing so was conventional.

Dependent claims 3-5, 10-12, 17, 23, 26-29, 31, 34-35, 40-42, 46-47, 50-51, 54-55, 58-59, 61-62, 75, and 82 recite the additional limitation of using routine and conventional components to perform their intended functions. These components include televisions, stereo systems, CD players, radios, phones, microphones, speakers, headsets, computing devices, and head-mounted electronic devices. Claims 29, 31, 50, 54, 58, and 61 further recite using these generic components to perform their intended functions. Claim 29 further recites a modifier modifying signals at one or more frequencies based on a hearing characteristic to enhance the hearing of a user. Claim 31 further recites using a computing device to calibrate a user's hearing. Claims 50, 54, 58, and 61 recite using a microphone to receive audio sound in the environment. These components were conventional, and their functions are routine, as admitted by the '789 Patent, at the time of filing, as demonstrated in the accompanying claim charts. *See, e.g.*, '789 Patent, at 12:17-29.

Dependent claims 6-8, 14-15, 18, 20, 48, 52, 56 and 76 recite the additional limitation of modifying portions of audio signals to increase power, such as modifying power based on frequency or modifications of power independent of modifications at different frequencies and imposing power limits on such modifications. Claims 15 and 20 further recite calibrating a user's hearing to determine a hearing characteristic and the capability to change the power of output signals. Claims 48, 52, and 56, similarly recite changing/modifying the output signals based on a stored user preference. Claim 76 further recite increasing the power of a first frequency without increasing the power of a second frequency based on a user preference. These limitations were also conventional and routine at the time of filing, as demonstrated in the accompanying claim charts.

Dependent claims 24, 30, 33, 39, and 77-79 recite establishing the hearing profile in a mobile communication device such as a mobile phone. The steps of establishing the hearing profile—including calibrating the user's hearing across the one or more frequencies as recited in claims 30 and 77 and "measuring the user's hearing" as recited in claim 78—were conventional and well-known in hearing tests, as demonstrated in the accompanying claim charts.

Dependent claims 2 and 19 recite the additional limitation of upconverting signals into a WiFi band. This was conventional, as admitted by the '789 Patent, and was routine at the time of filing, as demonstrated in the accompanying claim charts. *See*, *e.g.*, '789 Patent, at 4:53-67. Indeed, IngenioSpec reads these limitations broadly by asserting infringement based on Bluetooth connectivity. Plaintiff's Preliminary Infringement Contentions, Ex. A. at 92-96.

Therefore, the Asserted Claims of the '789 Patent are ineligible under 35 U.S.C. § 101 because they are directed to an abstract idea under *Alice* step 1 and add nothing more than well-understood, routine, conventional activity under *Alice* step 2.

IV. U.S. Patent No. 11,644,693

A. Invalidity Under 35 U.S.C. §§ 102 and 103

1. Identification of Prior Art

Apple identifies the following prior art that anticipates and/or renders obvious, either alone or in combination with other references, one or more Asserted Claims of the '693 Patent. Apple also incorporates by reference each and every prior art reference of record in the prosecution history of the '693 Patent and patents or patent applications related to the '693 Patent, as well as the prior art referred to in the specification of the '693 Patent.

In these contentions, Apple identifies each item of prior art, including: (1) each patent or patent application constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) by its patent or publication number, country of origin, and date of filing, issue, or publication; and (2)

each non-patent publication constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) by its title, date of publication, and, where feasible, author, and publisher.

Apple further may rely on inventor admissions concerning the scope of the prior art relevant to the ’693 Patent found in, inter alia: the specification and figures of the ’693 Patent; the patent prosecution histories for the ’693 Patent and related patents, patent applications, reissues, and/or reexaminations; any deposition testimony of the named inventors of the ’693 Patent; and the papers and evidence submitted by IngenioSpec in this action.

Apple identifies the following patents, patent applications, and non-patent publications as anticipating and/or rendering obvious, either alone or in combination with one or more other prior art references, one or more Asserted Claims of the ’693 Patent under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) and/or 35 U.S.C. § 103:

Patent No./ Publication No./ Printed Publication	**Bates. No.**	**Filing/ Publication/ Issue Date**	**First Named Inventor/ Author**	**Prior Art Status (Pre-AIA)**
U.S. Pat. No. 5,721,783	APL-INGENIO_00821567	Filed on June 7, 1995; Issued on Feb. 24, 1998	Anderson	102(a), (b), and (e)
U.S. Pat. No. 7,245,730	APL-INGENIO_00821937	Filed on Jan. 13, 2003; Issued on July 17, 2007	Enzmann ’730	102(e)
U.S. Pub. No. 2004/0136555	APL-INGENIO_00821427	Filed on Jan. 13, 2003; Published on July 15, 2004	Enzmann ’555	102(a), and (e)
U.S. Pat. No. 7,150,526	APL-INGENIO_00818101	Filed on July 28, 2003; Published on Aug. 19, 2004; Issued on Dec. 19, 2006	Jannard	102(e)
U.S. Pat. No. 6,944,474	APL-INGENIO_00818061	Filed on Sept. 20, 2001; Issued on Sept. 15, 2005	Rader ’474	102(e)
U.S. Pub. No. 2003/0064746	APL-INGENIO_00813851	Filed on Sept. 20, 2001; Published on April 3, 2003	Rader ’746	102(a), (b), and (e)

WIPO Pub. No. 03/026349	APL-INGENIO_00822476	Filed on Sept. 19, 2002 with priority claims to Sept. 20, 2001; Published on Mar. 27, 2003	Radar ’349	102(a), (b), and (e)
U.S. Pat. No. 7,187,960	APL-INGENIO_00819449	Filed on April 22, 2003 with priority date of April 22, 2002; Published on Mar. 25, 2004	Abreu	102(a), and (e)
U.S. Pat. No. 7,620,433	APL-INGENIO_00818244	Filed on Jan. 15, 2003, Published on July 15, 2004; Issued on Nov. 17, 2009	Bodley	102(a), and (e)
WIPO Pub. No. 2001/054458	APL-INGENIO_00818252	Filed on Jan.18, 2001; Published on July 26, 2001	Eaton	102(a), (b), and (e)
WIPO Pub. No. 2004/093490	APL-INGENIO_00819513	Filed on April 15, 2004 with priority date of April 18. 2003	Hollemans	102(a), and (e)
U.S. Pat. No. 7,010,332	APL-INGENIO_00819678	Filed on Feb. 21, 2000; Issued on Mar. 7, 2006	Irvin	102(e)
U.S. Pub. No. 2005/0226446	APL-INGENIO_00815587	Filed on April 8, 2004; Published on Oct. 13, 2005	Luo	102(e)
U.S. Pat. No. 6,671,379	APL-INGENIO_00818049	Filed on July 31, 2001; Issued on Dec. 30, 2003	Nemirovski	102(a), (b), and (e)
U.S. Pub. No. 2005/0136839	APL-INGENIO_00819839	Filed on Oct. 27, 2004 with priority date of May 28, 2003; Published on June 23, 2005	Seshadri	102(e)
U.S. Pub. No. 2005/0058313	APL-INGENIO_00817979	Filed on Sept. 11, 2003; Published on Mar. 17, 2005	Victorian	102(a), and (e)
U.S. Pat. No. 7,046,230	APL-INGENIO_00819949	Filed on July 1, 2002, Issued on May 16, 2006	Zadesky ’230	102(e)
U.S. Pub. No. 2003/0076306	APL-INGENIO_00864157	Filed on July 1, 2002, Published on April 24, 2003	Zadesky ’306	102(a), (b), and (e)

U.S. Pat. No. 6,373,942	APL-INGENIO_00814606	Filed on April 7, 2000; Issued on April 16, 2002	Braund	102(a), (b), and (e)
U.S. Pat. No. 7,979,035	APL-INGENIO_00818578	Filed on Dec. 4, 2007 with priority claim to Nov. 7, 2000	Griffin	102(e)
U.S. Pub. No. 2003/0068057	APL-INGENIO_00814560	Filed on Oct. 6, 2001; Published on Apr. 10, 2003	Miller	102(a), (b), and (e)
U.S. Pat. No. 4,955,729	APL-INGENIO_00813438	Filed on Mar. 29, 1988; Issued on Sep. 11, 1990	Marx	102(a), (b), and (e)
U.S. Pat. No. 7,542,012	APL-INGENIO_00816290	Filed on June 16, 2005 with priority claim to Dec. 22, 2003; Issued on Jun. 2, 2009	Kato	102(e)

Apple further identifies the following prior art apparatuses/systems which are understood to be prior art under 35 U.S.C. §§ 102(a), (b), and/or (g). With this disclosure, Apple identifies by Bates range exemplary material describing the prior art systems and/or exemplary components thereof. Moreover, each of the references identified in the Related References column of the following table is also a prior art reference in its own right and anticipates and/or renders obvious the Asserted Claims of the ’693 Patent. Apple reserves the right to supplement its identified prior art apparatuses/systems and the evidence thereof, both listed here and in the attached charts, based on any responses received to third-party subpoenas during the court of discovery.

Digital Hearing Aid (DHA) System: Related References	Bates No.
Phonak – Claro 211 Product Information	APL-INGENIO_00823071
Phonak- Trends in Amplification	APL-INGENIO_00824556
Phonak - SmartLink SX User Guide	APL-INGENIO_00840635
Phonak – Annual Report (2003–2004)	APL-INGENIO_00820743
Phonak Campus S_ Accessories	APL-INGENIO_00864115
Phonak SmartLink SX Product Information	APL-INGENIO_00824437
Lewis – Speech perception in noise: directional microphones (2004)	APL-INGENIO_00864067
Phonak and Other DHA – Manufacturers News Article	APL-INGENIO_00814243
Phonak – BTE Elite Article	APL-INGENIO_00824465
Phonak Campus-S-User-Manual	APL-INGENIO_00824386
Phonak Claro – A World First from Phonak	APL-INGENIO_00824469
Phonak Claro – Remote control WatchPilot and Claro dAZ	APL-INGENIO_00824468
Phonak Claro - Technology of the Digital Future	APL-INGENIO_00864117
Phonak Claro – World Premiere	APL-INGENIO_00824472
Phonak – Field Study News Article re PersonalLogic	APL-INGENIO_00824477
Phonak – FM Transmitters including Campus S and TelCom	APL-INGENIO_00864124

Phonak – History of Various Hearing Aid Manufacturers	APL-INGENIO_00824378
Phonak – Media Release re Product Offerings in F2003/2004	APL-INGENIO_00864137
Phonak Perseo with PersonalLogic Article	APL-INGENIO_00824470
Phonak – Product Lines with Claro	APL-INGENIO_00824469
Phonak – The Hearing Review Article re Adults' Use of FM Systems	APL-INGENIO_00820949
TelCom User Guide	APL-INGENIO_00824439
Phonak – Collections 2002 Product List	APL-INGENIO_00822999
Phonak – Fitting Guide for MLxi and MLxi Baha	APL-INGENIO_00864126
Phonak MicroLink MLxS Product Information	APL-INGENIO_00864122
Phonak - SmartLink SX - FM Systems Manual	APL-INGENIO_00840621
Phonak Semi-Annual Report per September 30, 2003	APL-INGENIO_00824425
Phonak Campus S – Henry Article re Selection, Application and Integration of FM Systems	APL-INGENIO_00820153
Phonak - Hearing Aid Museum re SmartLink SX FM System	APL-INGENIO_00824416
Phonak – Microlink User Guide	APL-INGENIO_00824500
Phonak – Online Interview re Perseo (April 7, 2003)	APL-INGENIO_00820831
Phonak – Perseo Brochure	APL-INGENIO_00824477
Phonak – The Hearing Review Article re Perseo (Sep. 5, 2003)	APL-INGENIO_00820949

Valente - Effect of type of noise and loudspeaker array on the performance	APL-INGENIO_00840926
Oticon – DigiFocus Compact User Instructional Brochure	APL-INGENIO_00820697
Oticon – DigiFocus Description	APL-INGENIO_00820716
Oticon DigiFocus – What Users Say About DigiFocus	APL-INGENIO_00820696
Oticon – DigiFocus White Paper (1996)	APL-INGENIO_00820685
Oticon – LA Time Article re THE GOODS: The Sound Wave of the Future (Nov. 10 1995)	APL-INGENIO_00820728
Oticon – News Release re Audiologists Test Breakthrough In Hearing Care (June 19, 2006)	APL-INGENIO_00820731
Oticon – Products Index	APL-INGENIO_00820734
Phonak FM Systems Manual - Preventative Maintenance and Trouble Shooting Guide	APL-INGENIO_00841284
MicroSound/EduLink Manufacturers News	APL-INGENIO_00840998
EXPRESSfit Article	APL-INGENIO_00820505
Nicolet Phoenix 1996	APL-INGENIO_00820151
Nicolet Phoenix Article	APL-INGENIO_00820507
Nicolet Phoenix – Audible Difference	APL-INGENIO_00824363
Nicolet Phoenix BTE	APL-INGENIO_00824369
Project Phoenix	APL-INGENIO_00821132
The Automatic Directional Problem – Audiology Online	APL-INGENIO_00840669

FM Hearing Systems	APL-INGENIO_00823075
50 years of hearing instruments	APL-INGENIO_00819345
ReSound 510k	APL-INGENIO_00819353

In addition to the above prior art references and apparatuses/systems, Apple may rely on additional documents and evidence that disclose or describe the general state of the art and knowledge of a POSITA at the time of the purported inventions.

Apple also incorporates here by reference all reexaminations and *inter partes* review proceedings involving the '693 Patent.

Charts attached hereto as Exhibits B-1, B-2, and B-3 set forth exemplary citations establishing where in the prior art references each element of the Asserted Claims are found, exemplary combinations of references, and exemplary motivations to combine the references. While the exhibits reflect specific exemplary combinations of reference, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Apple's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude Apple from identifying other invalidating combinations and/or motivations as appropriate.

B. Invalidity Under 35 U.S.C. § 112

Based on a preliminary investigation and limited discovery to date, Apple identifies the following grounds of invalidity under 35 U.S.C. § 112. Apple reserves the right to modify or supplement these contentions to identify further bases for invalidity under 35 U.S.C. § 112, *e.g.*, based on the Court's claim construction or further discovery. As Apple best understands

IngenioSpec's allegations at this time, the Asserted Claims fail to meet the requirements of 35 U.S.C. § 112 for at least the reasons discussed below .

The Asserted Claims of the '693 Patent fail the written description requirement of § 112 in view of at least the following claim terms and phrases. Apple's contentions that the following claims are invalid under § 112 are made in the alternative and do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the Asserted Claims or that any of the Asserted Claims are not anticipated or rendered obvious by any prior art. The claims and limitations addressed below are merely examples and are not intended to be limiting or exhaustive. Apple reserves all rights to amend these contentions under 35 U.S.C. § 112, including after one or more Asserted Claims are ultimately construed by the Court, in response to any interpretation of one or more Asserted Claims embodied in IngenioSpec's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Apple additionally reserves the right to provide additional explanation and/or argument for these contentions under § 112, including, e.g., based on expert testimony.

1. Lack of Written Description

The Asserted Claims of the '693 Patent are invalid because the specification of the '693 Patent does not provide an adequate written description to support the scope of the claims sought by IngenioSpec in furtherance of its infringement theories. Title 35 of the United States Code § 112, ¶ 1 requires a patent specification to contain "a written description of the invention." The written description "must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (citations omitted). The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" by the time the application is filed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted).

To satisfy the written description requirement, "the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). "[E]nough [of the invention] must be included to convince a person of skill in the art that the inventor possessed the invention . . . ." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

The following claim limitations in the '693 Patent lack written description under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claim 1, and the claims dependent therefrom	"a pair of ear buds, each configured to be placed in an ear of a user; and … the mobile communication device configured to transmit the customized audio output signals to the pair of ear buds"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., standalone ear buds in communication with a mobile communication device.
Claim 6, and the claims dependent therefrom	"wherein at least one of the earbuds in the pair of earbuds comprises an array of microphones configured for directional audio pickup"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., that an ear bud has a microphone array under at least one interpretation of array.
Claim 9, and the claims dependent therefrom	"wherein at least one of the earbuds in the pair of earbuds comprises a plurality of microphones configured for audio pickup."	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full

		scope of the claims asserted by the plaintiff, e.g., that an ear bud has a plurality of microphones under at least one interpretation of plurality of microphones.
Claim 13	"wherein each of the ear buds includes at least a speaker and is configured to generate at least a portion of the customized audio output for the user via the speaker."	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., because there is no support for "at least a portion" being generated.
Claim 17	"wherein at least one of the earbuds in the pair of earbuds comprises a plurality of microphones configured for audio pickup, wherein at least one of the microphones is configured to pick up an audio command, and wherein the mobile communication device is configured to induce an operation or action based on the audio command"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., that an ear bud has a plurality of microphones under at least one interpretation of plurality of microphones and that just one picks up an audio command.
Claim 20, and the claims dependent therefrom	"wherein the mobile communication device includes computing capabilities and a storage device, the storage device storing at least a software program executed by the mobile communication device to enable the user to establish the hearing profile associated with the user, and	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., that the mobile communication device performs the recited functions.

	wherein the mobile communication device is configured to establish the hearing profile associated with the user via the software program executed by the mobile communication device based on the user interacting with the software program via the mobile communication device."	
Claim 23	"wherein at least one of the earbuds in the pair of earbuds comprises a radiation detector configured to capture radiation data; and first electronic circuitry electrically connected to the radiation detector, the first electronic circuitry configured to process at least the radiation data captured by the radiation detector, wherein the first electronic circuitry is configured to determine whether the earbud is being worn by a user based on at least the processed radiation data."	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., that a standalone earbud is used in the claimed manner.
Claim 24, and the claims dependent therefrom	"a head-worn wearable electronic device including at least a pair of speakers, each of the speakers being configured to be wearable proximate to an ear of a user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., under at least one possible interpretation of proximate.

Claims 26, 52, and 74; and the claims dependent therefrom	"wherein the electrical coupling of the at least one conductive element with the charging apparatus is supported by at least a magnetic element"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "a magnetic element" that supports an "electrical coupling."
Claim 34, and the claims dependent therefrom	"wherein the touch sensitive surface is configured to detect a user input, the detected user input operating to at least alter operation of the head-worn wearable electronic device"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., altering operation of the head-worn personal electronic apparatus based on sensed touch input.
Claim 42, and the claims dependent therefrom	"wherein the head-worn wearable electronic device comprises: a first head-worn structure including at least a first speaker of the pair of speakers, the first speaker being wearable proximate to a first ear of the user; and a second head-worn structure including at least a second speaker of the pair of speakers, the second speaker being wearable proximate to a second ear of the user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., under at least one possible interpretation of proximate.
Claim 75	"a pair of speakers, each of the speakers being configured to be wearable proximate to an ear of a user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiffs, e.g., under at least one

		possible interpretation of proximate.
Claim 76	"each of the speakers being configured to be at least partially inserted into an ear of the user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., a speaker wearable proximate to and partially inserted in the ear.

C. Invalidity Under 35 U.S.C. § 101

The Asserted Claims of the '693 Patent are invalid under 35 U.S.C. § 101, particularly in view of IngenioSpec's apparent interpretations of the Asserted Claims in its infringement contentions. For example, IngenioSpec reads the asserted claims onto "noise cancellation" including alleging that this functionality meets at least the claimed "customized audio output," "hearing profile," and "customized audio output signals" limitations. Plaintiff's Preliminary Infringement Contentions, Ex. B ('693 patent) at 12-15, 69-71, 78-80. As explained below, particularly under IngenioSpec's apparent claim interpretations, the Asserted Claims of the '693 Patent are directed to the abstract idea of modifying or customizing audio output signals based on a user's hearing characteristics, impairment, or preferences. And as underscored by IngenioSpec's contentions, the Asserted Claims of the '693 Patent fail to transform that abstract idea into a practical application. Instead, the '693 Patent is broad enough to encapsulate processing of audio signals using generic components and provide no proposed improvement (as demonstrated by IngenioSpec reading its claims onto "noise cancellation" which was undisputedly commonplace before the '693 patent's priority date). The Asserted Claims of the '693 Patent fail to disclose any

detail in how such audio customization should be performed and instead broadly covers all such manners of customization under IngenioSpec's apparent interpretation. *See Elec. Power Grp.*, 850 F.3d at 1356 (finding claims ineligible when "rather than claiming some specific way of enabling a computer to [solve a problem] . . . they purport to monopolize every potential solution to the problem") (cleaned up); *ChargePoint*, 920 F.3d at 766-69 ("[P]atent law does not authorize anyone to preempt.").

A claim is ineligible when it (1) is directed to an abstract idea; and (2) fails to recite significantly more than the abstract idea. *SAP Am., Inc*, 898 F.3d at 1166-67 (citing *Alice*, 573 U.S. at 217). At step one, the court determines if the claims are "directed to" an abstract idea by looking at "the focus of the claimed advance over the prior art." *Trinity*, 72 F.4th at 1361. Claims are directed to an abstract idea if they are equivalent or analogous to human activity or can be performed mentally. *E.g.*, *CyberSource*, 654 F.3d at 1371. So are claims that focus on "collecting information, analyzing it, and displaying certain results." *Elec. Power Grp.*, 830 F.3d at 1353. Likewise, claims are abstract if they provide "only a result-oriented solution, with insufficient detail for how a computer accomplishes it." *Intell. Ventures I*, 850 F.3d at 1342; *see also Apple,* 842 F.3d at 1244 ("[A] claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter.").

At step two, the additional elements "must be more than 'well-understood, routine, conventional activity.'" *Intell. Ventures I*, 850 F.3d at 1341 (citation omitted). Claim elements that implement an abstract idea using generic components or "well-understood, routine, conventional activities" are not inventive and do not pass step two. *Alice*, 134 S. Ct. at 2357-60. Nor do claim elements that simply confine the claims to a "particular field of use or technological environment." *Intellectual Ventures I*, 792 F.3d at 1363-66; *see also In re TLI Commc'ns LLC Pat. Litig.*, 823

F.3d at 613 ("[R]ecitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea.").

Under *Alice* step one, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '693 Patent are directed to the abstract idea of modifying or customizing audio output signals based on a user's hearing characteristics or hearing impairment. For example, representative claim 1 of the '693 Patent recites: "a mobile communication device . . . configured to[:] [(i)] produce audio output signals customized for the user based on at least [a] stored hearing profile associated with the user such that the customized audio output signals at least compensate for the hearing impairment regarding the user's ability to hear, . . . [(ii)] produce the customized audio output signals using at least signal amplification, . . . and [(iii)] transmit the customized audio output signals to [a] pair of ear buds."

Representative claim 1 and the remaining Asserted Claims of the '693 Patent thus fall within the familiar category of ineligible claims for manipulating and outputting data. *See Digitech*, 758 F.3d at 1349-50 ("The claims' only description of the device profile is that it comprises 'first data for describing' color information and 'second data for describing' spatial information. The claims encompass all embodiments of the information contained in the device profile, regardless of the process through which this information is obtained or the physical medium in which it is stored."); *see also RecogniCorp*, 855 F.3d at 1327 ("A process that started with data, added an algorithm, and ended with a new form of data [i]s directed to an abstract idea.").

The claims are also analogous to human activities performed without computers. *See, e.g.*, *RecogniCorp*, 855 F.3d. at 1326; *CyberSource*, 654 F.3d at 1371. For example, a person speaking to a hearing-impaired person often speaks louder or slower, depending on which manner of

speaking is easier for the hearing-impaired person to understand. Likewise, individuals who are hearing impaired often manually adjust their audio devices (e.g., radios, televisions, etc.) to better hear the content. These claims automate those human activities, demonstrating their abstractness.

Under *Alice* step two, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '693 Patent fail to provide an inventive concept and instead implement the abstract idea using generic components and well-understood, routine, and conventional activities. For example, representative claim 1 recites generic computer elements such as "ear buds," and a "mobile communication device" configured to perform the recited functions. These generic components implementing conventional activity fail to transform the claims into something more than an abstract idea or otherwise demonstrate an inventive concept.

Claim 1 is representative, and the remaining Asserted Claims of the '693 Patent, 2-38 and 42-76, add nothing to claim 1's abstract idea. *See Content Extraction & Transmission*, 776 F.3d at 1348 (analyzing one representative claim is appropriate where others "are substantially similar [and] recite little more than the same abstract idea"). Independent claims 24 and 75 mirror claim 1, replacing the recited ear buds with a pair of speakers (claims 24 and 75) and replacing the hearing profile with a hearing characteristic (claim 75). These are not meaningful differences.

Dependent claims 2-3 and 19-22 recite the additional limitation of establishing the hearing profile (e.g., the results of a hearing test) in a mobile communication device such as a mobile phone. The steps of establishing the hearing profile—including "generating audio tones" and "receiving a user indication corresponding to the user's ability to hear the generated audio tones"—were conventional and well-known in hearing tests, as demonstrated in the accompanying claim charts. Claim 20 further recites establishing the hearing profile on a mobile communication device with computing capabilities using generic components such as a storage device and a software

program. Claim 21 further recites an interactive guide to establishing the hearing profile. Performing these tests on generic technology such as a mobile communication device with generic hardware and software components such as a storage device and software program does not make them any less conventional.

Dependent claims 4 and 18 recite the additional limitation of frequency-dependent amplification (e.g., amplifying different frequency bands). This was conventional, as hearing loss is typically frequency dependent (e.g., hearing loss often occurs at higher frequencies) as demonstrated in the accompanying claim charts. Indeed, IngenioSpec reads these limitations on a wide range of audio adjustments, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. B., at 121-23.

Dependent claims 5-10, 13-14, 17, 23, 25-26, 30-38, 41-45, 49-59, 61-67, 70-74, and 76 recite nothing more than the use of routine and conventional components performing their traditional functions, such as microphones (including directional microphones), speakers, radiation detectors, conductive elements, photodetectors, infrared emitters and detectors, accelerometers, touch sensitive surfaces, force sensors, rechargeable battery components, processing units, physical condition sensors, heartbeat sensors, circuit boards with integrated circuits, magnetic elements, and electronic circuitry. Claims 5, 7-10, 13 , 17, 23, 25-26, 34-35, 37-38, 41, 50-53, 55-57, 59, 61, 62-66, 67, and 70-74 further recite using these generic components to perform their intended functions. Claims 5 and 13 recite generating the audio output through the speakers. Claims 7-8, 50, 61, 64-65, 67, and 70-72 recite different directions for directional audio pickup (e.g., in front of a user for user audio, outward from a user for environmental audio). Claims 9-10, and 17 recite microphones configured to receive audio inputs including audio commands. Claims 53 and 72 similarly recite receiving a voice input through a microphone to control an operation

through voice recognition. Claims 23, 55-57, and 73 further recite using conventional electronic circuitry to process data such as radiation data to determine if the earbud is being worn by the user. Claim 73 further recites an infrared emitter configured to direct infrared signals and an infrared detector configured to detect infrared radiation. Claim 17 recites inducing operation based on an audio command. Claim 25 recites a rechargeable battery capable of being charged when coupled to a docking station. Claims 26, 52, and 72 similarly recite electrically coupling the rechargeable battery via at least one conductive element to a charging apparatus. Claims 26, 52, and 74 further recite supporting the electric coupling by a magnetic element. Claim 34 further recites the touch sensitive surface detecting user input to alter operation of the head-worn wearable electronic device. Claims 35, 38, and 41 recite supporting and controlling audio outputs through inputs from the touch sensitive surface. Claim 36 recites a force sensor configured to sense force as a user input. Claim 37 further recites the inputs from the force sensor altering an operation of the head-worn wearable electronic device. Claim 45 further recites a user input device configured to receive user inputs through a capacitive effect. Claims 51 and 70-72 further recite a processing unit configured to determine an ambient sound level and amplify an output from the speaker based on the ambient sound level. Claim 59 recites electronic circuitry configured to provide audio alerts through a speaker. Claim 62-63 recites a physical condition sensor configured to acquire data on the physical condition of the user (e.g., heart beat related information). Claim 64 and 66 further recites a processing unit configured to remove a portion of an environmental audio input through a microphone. These components and their functionality were conventional, as demonstrated in the accompanying claim charts. These conventional and general components do not transform the abstract idea into an inventive concept.

Dependent claims 11-12, 51, 64, and 68-69 recite performing ambient sound modification such as noise cancellation (removing audio pick up of "ambient" noise from a microphone) or amplification of audio outputs through a speaker. This was conventional, as demonstrated in the accompanying claim charts. The conventionality of these claims is further demonstrated by the use of generic components such as circuit boards.

Dependent claims 27-29 and 72 recite wireless communication capabilities, including short-range wireless networks and Bluetooth networks. This was conventional, as admitted by the '693 patent, and as demonstrated in the accompanying claim charts. '693 Patent, at 49:51-62.

Dependent claims 15-16 recite the additional limitation of producing a specific audio output (e.g., music or voice). This was conventional, as audio outputs often involve music or voice, as demonstrated in the accompanying claim charts.

Dependent claims 59-60 recite the additional limitation of generating audio alerts. Claim 60 further recites providing audio alerts based on user preference settings. This was conventional, as demonstrated in the accompanying claim charts. Indeed, IngenioSpec reads these limitations on notifications, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. B., at 589-92.

Dependent claims 45-48 recite the additional limitation of capacitive effects producing electrical responses. Claim 46 further recites the capacitive effect detecting a direction of a user input. Claim 47 further recites detecting a sliding of a finger action. Claim 48 further recites distinguishing between a forward sliding action and a backward sliding action. This was conventional, as demonstrated in the accompanying claim charts. Indeed, IngenioSpec reads these limitations on touch inputs in general, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. B., at 459-64.

Therefore, the Asserted Claims of the ’693 Patent are ineligible under 35 U.S.C. § 101 because they are directed to an abstract idea under *Alice* step 1 and add nothing more than well-understood, routine, conventional activity under *Alice* step 2.

V. U.S. Patent No. 11,921,355

A. Invalidity Under 35 U.S.C. §§ 102 and 103

1. Identification of Prior Art

Apple identifies the following prior art that anticipates and/or renders obvious, either alone or in combination with other references, one or more Asserted Claims of the ’355 Patent. Apple also incorporates by reference each and every prior art reference of record in the prosecution history of the ’355 Patent and patents or patent applications related to the ’355 Patent, as well as the prior art referred to in the specification of the ’355 Patent.

In these contentions, Apple identifies each item of prior art, including: (1) each patent or patent application constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) by its patent or publication number, country of origin, and date of filing, issue, or publication; and (2) each non-patent publication constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) by its title, date of publication, and, where feasible, author, and publisher.

Apple further may rely on inventor admissions concerning the scope of the prior art relevant to the ’355 Patent found in, inter alia: the specification and figures of the ’355 Patent; the patent prosecution histories for the ’355 Patent and related patents, patent applications, reissues, and/or reexaminations; any deposition testimony of the named inventors of the ’355 Patent; and the papers and evidence submitted by IngenioSpec in this action.

Apple identifies the following patents, patent applications, and non-patent publications as anticipating and/or rendering obvious, either alone or in combination with one or more other prior

art references, one or more Asserted Claims of the ’355 Patent under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) and/or 35 U.S.C. § 103:

Patent No./ Publication No./ Printed Publication	Bates. No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
U.S. Pat. No. 5,721,783	APL-INGENIO_00821567	Filed on June 7, 1995; Issued on Feb. 24, 1998	Anderson	102(a), (b), and (e)
U.S. Pat. No. 7,245,730	APL-INGENIO_00821937	Filed on Jan. 13, 2003; Issued on July 17, 2007	Enzmann ’730	102(e)
U.S. Pub. No. 2004/0136555	APL-INGENIO_00821427	Filed on Jan. 13, 2003; Published on July 15, 2004	Enzmann ’555	102(a), and (e)
U.S. Pat. No. 7,150,526	APL-INGENIO_00818101	Filed on July 28, 2003; Published on Aug. 19, 2004; Issued on Dec. 19, 2006	Jannard	102(e)
U.S. Pat. No. 6,944,474	APL-INGENIO_00818061	Filed on Sept. 20, 2001; Issued on Sept. 15, 2005	Rader ’474	102(e)
U.S. Pub. No. 2003/0064746	APL-INGENIO_00813851	Filed on Sept. 20, 2001; Published on April 3, 2003	Rader ’746	102(a), (b), and (e)
WIPO Pub. No. 03/026349	APL-INGENIO_00822476	Filed on Sept. 19, 2002 with priority claims to Sept. 20, 2001; Published on Mar. 27, 2003	Radar ’349	102(a), (b), and (e)
U.S. Pat. No. 7,187,960	APL-INGENIO_00819449	Filed on April 22, 2003 with priority date of April 22, 2002; Published on Mar. 25, 2004	Abreu	102(a), and (e)
U.S. Pat. No. 7,620,433	APL-INGENIO_00818244	Filed on Jan. 15, 2003, Published on July 15, 2004; Issued on Nov. 17, 2009	Bodley	102(a), and (e)
WIPO Pub. No. 2004/093490	APL-INGENIO_00819513	Filed on April 15, 2004 with priority date of April 18. 2003	Hollemans	102(a), and (e)

U.S. Pat. No. 7,010,332	APL-INGENIO_00819678	Filed on Feb. 21, 2000; Issued on Mar. 7, 2006	Irvin	102(e)
U.S. Pub. No. 2005/0226446	APL-INGENIO_00815587	Filed on April 8, 2004; Published on Oct. 13, 2005	Luo	102(e)
U.S. Pat. No. 6,671,379	APL-INGENIO_00818049	Filed on July 31, 2001; Issued on Dec. 30, 2003	Nemirovski	102(a), (b), and (e)
U.S. Pub. No. 2005/0136839	APL-INGENIO_00819839	Filed on Oct. 27, 2004 with priority date of May 28, 2003; Published on June 23, 2005	Seshadri	102(e)
U.S. Pub. No. 2005/0058313	APL-INGENIO_00817979	Filed on Sept. 11, 2003; Published on Mar. 17, 2005	Victorian	102(a), and (e)
U.S. Pat. No. 7,046,230	APL-INGENIO_00819949	Filed on July 1, 2002, Issued on May 16, 2006	Zadesky ’230	102(e)
U.S. Pub. No. 2003/0076306	APL-INGENIO_00864157	Filed on July 1, 2002, Published on April 24, 2003	Zadesky ’306	102(a), (b), and (e)
U.S. Pat. No. 6,373,942	APL-INGENIO_00814606	Filed on April 7, 2000; Issued on April 16, 2002	Braund	102(a), (b), and (e)
U.S. Pat. No. 7,979,035	APL-INGENIO_00818578	Filed on Dec. 4, 2007 with priority claim to Nov. 7, 2000	Griffin	102(e)
U.S. Pub. No. 2003/0068057	APL-INGENIO_00814560	Filed on Oct. 6, 2001; Published on Apr. 10, 2003	Miller	102(a), (b), and (e)
U.S. Pat. No. 4,955,729	APL-INGENIO_00813438	Filed on Mar. 29, 1988; Issued on Sep. 11, 1990	Marx	102(a), (b), and (e)
U.S. Pat. No. 7,542,012	APL-INGENIO_00816290	Filed on June 16, 2005 with priority claim to Dec. 22, 2003; Issued on Jun. 2, 2009	Kato	102(e)

Apple further identifies the following prior art apparatuses/systems which are understood to be prior art under 35 U.S.C. §§ 102(a), (b), and/or (g). With this disclosure, Apple identifies by

Bates range exemplary material describing the prior art systems and/or exemplary components thereof. Moreover, each of the references identified in the Related References column of the following table is also a prior art reference in its own right and anticipates and/or renders obvious the Asserted Claims. Apple reserves the right to supplement its identified prior art apparatuses/systems and the evidence thereof, both listed here and in the attached charts, based on any responses received to third-party subpoenas during the court of discovery.

Digital Hearing Aid (DHA) System: Related References	Bates No.
Phonak – Claro 211 Product Information	APL-INGENIO_00823071
Phonak- Trends in Amplification	APL-INGENIO_00824556
Phonak - SmartLink SX User Guide	APL-INGENIO_00840635
Phonak – Annual Report (2003–2004)	APL-INGENIO_00820743
Phonak Campus S_ Accessories	APL-INGENIO_00864115
Phonak SmartLink SX Product Information	APL-INGENIO_00824437
Lewis – Speech perception in noise: directional microphones (2004)	APL-INGENIO_00864067
Phonak and Other DHA – Manufacturers News Article	APL-INGENIO_00814243
Phonak – BTE Elite Article	APL-INGENIO_00824465
Phonak Campus-S-User-Manual	APL-INGENIO_00824386
Phonak Claro – A World First from Phonak	APL-INGENIO_00824469
Phonak Claro – Remote control WatchPilot and Claro dAZ	APL-INGENIO_00824468
Phonak Claro - Technology of the Digital Future	APL-INGENIO_00864117
Phonak Claro – World Premiere	APL-INGENIO_00824472
Phonak – Field Study News Article re PersonalLogic	APL-INGENIO_00824477
Phonak – FM Transmitters including Campus S and TelCom	APL-INGENIO_00864124

Phonak – History of Various Hearing Aid Manufacturers	APL-INGENIO_00824378
Phonak – Media Release re Product Offerings in F2003/2004	APL-INGENIO_00864137
Phonak Perseo with PersonalLogic Article	APL-INGENIO_00824470
Phonak – Product Lines with Claro	APL-INGENIO_00824469
Phonak – The Hearing Review Article re Adults' Use of FM Systems	APL-INGENIO_00820949
TelCom User Guide	APL-INGENIO_00824439
Phonak – Collections 2002 Product List	APL-INGENIO_00822999
Phonak – Fitting Guide for MLxi and MLxi Baha	APL-INGENIO_00864126
Phonak MicroLink MLxS Product Information	APL-INGENIO_00864122
Phonak - SmartLink SX - FM Systems Manual	APL-INGENIO_00840621
Phonak Semi-Annual Report per September 30, 2003	APL-INGENIO_00824425
Phonak Campus S – Henry Article re Selection, Application and Integration of FM Systems	APL-INGENIO_00820153
Phonak - Hearing Aid Museum re SmartLink SX FM System	APL-INGENIO_00824416
Phonak – Microlink User Guide	APL-INGENIO_00824500
Phonak – Online Interview re Perseo (April 7, 2003)	APL-INGENIO_00820831
Phonak – Perseo Brochure	APL-INGENIO_00824477
Phonak – The Hearing Review Article re Perseo (Sep. 5, 2003)	APL-INGENIO_00820949

Valente - Effect of type of noise and loudspeaker array on the performance	APL-INGENIO_00840926
Oticon – DigiFocus Compact User Instructional Brochure	APL-INGENIO_00820697
Oticon – DigiFocus Description	APL-INGENIO_00820716
Oticon DigiFocus – What Users Say About DigiFocus	APL-INGENIO_00820696
Oticon – DigiFocus White Paper (1996)	APL-INGENIO_00820685
Oticon – LA Time Article re THE GOODS: The Sound Wave of the Future (Nov. 10 1995)	APL-INGENIO_00820728
Oticon – News Release re Audiologists Test Breakthrough In Hearing Care (June 19, 2006)	APL-INGENIO_00820731
Oticon – Products Index	APL-INGENIO_00820734
Phonak FM Systems Manual - Preventative Maintenance and Trouble Shooting Guide	APL-INGENIO_00841284
MicroSound/EduLink Manufacturers News	APL-INGENIO_00840998
EXPRESSfit Article	APL-INGENIO_00820505
Nicolet Phoenix 1996	APL-INGENIO_00820151
Nicolet Phoenix Article	APL-INGENIO_00820507
Nicolet Phoenix – Audible Difference	APL-INGENIO_00824363
Nicolet Phoenix BTE	APL-INGENIO_00824369
Project Phoenix	APL-INGENIO_00821132
The Automatic Directional Problem – Audiology Online	APL-INGENIO_00840669

FM Hearing Systems	APL-INGENIO_00823075
50 years of hearing instruments	APL-INGENIO_00819345
ReSound 510k	APL-INGENIO_00819353

In addition to the above prior art references and apparatuses/systems, Apple may rely on additional documents and evidence that disclose or describe the general state of the art and knowledge of a POSITA at the time of the purported inventions.

Apple also incorporates here by reference all reexaminations and *inter partes* review proceedings involving the ’355 Patent.

Charts attached hereto as Exhibits C-1, C-2, C-3, and C-4 set forth exemplary citations establishing where in the prior art references each element of the Asserted Claims are found, exemplary combinations of references, and exemplary motivations to combine the references. While the exhibits reflect specific exemplary combinations of reference, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Apple’s inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude Apple from identifying other invalidating combinations and/or motivations as appropriate.

B. Invalidity Under 35 U.S.C. § 112

Based on a preliminary investigation and limited discovery to date, Apple identifies the following grounds of invalidity under 35 U.S.C. § 112. Apple reserves the right to modify or supplement these contentions to identify further bases for invalidity under 35 U.S.C. § 112, e.g., based on the Court’s claim construction or further discovery. As Apple best understands

IngenioSpec's allegations at this time, the Asserted Claims fail to meet the requirements of 35 U.S.C. § 112 for at least the reasons discussed below .

The Asserted Claims of the '355 Patent fail the written description and/or enablement requirements of § 112 in view of at least the following claim terms and phrases. Apple's contentions that the following claims are invalid under § 112 are made in the alternative and do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the Asserted Claims or that any of the Asserted Claims are not anticipated or rendered obvious by any prior art. The claims and limitations addressed below are merely examples and are not intended to be limiting or exhaustive. Apple reserves all rights to amend these contentions under 35 U.S.C. § 112, including after one or more Asserted Claims are ultimately construed by the Court, in response to any interpretation of one or more Asserted Claims embodied in IngenioSpec's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Apple additionally reserves the right to provide additional explanation and/or argument for these contentions under § 112, including, e.g., based on expert testimony.

1. Lack of Written Description

The Asserted Claims of the '355 Patent are invalid because the specification of the '355 Patent does not provide an adequate written description to support the scope of the claims sought by IngenioSpec in furtherance of its infringement theories. Title 35 of the United States Code § 112, ¶ 1 requires a patent specification to contain "a written description of the invention." The written description "must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (citations omitted). The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" by the time the application is filed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted).

To satisfy the written description requirement, "the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). "[E]nough [of the invention] must be included to convince a person of skill in the art that the inventor possessed the invention . . . ." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

The following claim limitations in the '355 Patent lack written description under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claims 3, 19, and 65; and the claims dependent therefrom	"wherein the sensed touch input operating to at least alter operation of the head-worn electronic personal audio apparatus"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., altering operation of the head-worn personal electronic apparatus based on sensed touch input.
Claim 22	"wherein the head-worn personal electronic apparatus is configured to distinguish at least a direction of the user input with respect to the touch sensitive surface"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., determining a direction of the user input with respect to the touch sensitive surface.
Claim 24	"wherein the head-worn personal electronic apparatus is configured to facilitate determination at least whether the user input pertains to a forward sliding action or a backward sliding action with respect to the touch sensitive surface"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., determining a direction of the user input with respect to the touch sensitive surface.

Claim 53	"the at least one speaker is configured to be at least partially inserted into an ear of the user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., a speaker wearable proximate to and partially inserted in the ear.

C. Invalidity Under 35 U.S.C. § 101

The Asserted Claims of the '355 Patent are invalid under 35 U.S.C. § 101, particularly in view of IngenioSpec's apparent interpretations of the Asserted Claims in its infringement contentions. For example, IngenioSpec reads the Asserted Claims of the '355 Patent onto "noise cancellation" including alleging that this functionality meets at least the claimed "customized audio output," "hearing profile," and "customized audio output signals" limitations. Plaintiff's Preliminary Infringement Contentions, Ex. C ('355 patent) at 8-11, 57-64. As explained below, particularly under IngenioSpec's apparent claim interpretations, the Asserted Claims of the '355 Patent are directed to the abstract idea of modifying or customizing audio output signals based on a user's hearing characteristics, impairment, or preferences. And as underscored by IngenioSpec's contentions, the Asserted Claims of the '355 Patent fail to transform that abstract idea into a practical application. Instead, the '355 Patent is broad enough to encapsulate processing of audio signals using generic components and provide no proposed improvement (as demonstrated by IngenioSpec reading its claims onto "noise cancellation" which was undisputedly commonplace before the '355 Patent's priority date). The Asserted Claims of the '355 Patent fail to disclose any detail in how such audio customization should be performed and instead broadly covers all such manners of customization under IngenioSpec's apparent interpretation. *See Elec. Power Grp.*, 850

F.3d at 1356 (finding claims ineligible when "rather than claiming some specific way of enabling a computer to [solve a problem] . . . they purport to monopolize every potential solution to the problem") (cleaned up); *ChargePoint*, 920 F.3d at 766-69 ("[P]atent law does not authorize anyone to preempt.").

A claim is ineligible when it (1) is directed to an abstract idea; and (2) fails to recite significantly more than the abstract idea. *SAP Am., Inc*, 898 F.3d at 1166-67 (citing *Alice*, 573 U.S. at 217). At step one, the court determines if the claims are "directed to" an abstract idea by looking at "the focus of the claimed advance over the prior art." *Trinity*, 72 F.4th at 1361. A claim is directed to an abstract idea if they are equivalent or analogous to human activity or can be performed mentally. *E.g.*, *CyberSource*, 654 F.3d at 1371. So are claims that focus on "collecting information, analyzing it, and displaying certain results." *Elec. Power Grp.*, 830 F.3d at 1353. Likewise, claims are abstract if they provide "only a result-oriented solution, with insufficient detail for how a computer accomplishes it." *Intell. Ventures I*, 850 F.3d at 1342; *see also Apple*, 842 F.3d at 1244 ("[A] claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter.").

At step two, the additional elements "must be more than 'well-understood, routine, conventional activity.'" *Intell. Ventures I*, 850 F.3d at 1341 (citation omitted). Claim elements that implement an abstract idea using generic components or "well-understood, routine, conventional activities" are not inventive and do not pass step two. *Alice*, 134 S. Ct. at 2357-60. Nor do claim elements that simply confine the claims to a "particular field of use or technological environment." *Intellectual Ventures I*, 792 F.3d at 1363-66; *see also In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d at 613 ("[R]ecitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea.").

Under *Alice* step one, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '355 Patent are directed to the abstract idea of modifying or customizing audio output signals based on a user's hearing characteristics or hearing impairment. For example, representative claim 1 of the '355 Patent recites: "electronic circuitry … configured to (i) store hearing characteristics associated with the user; (ii) customize the received audio output signals to produce customized audio output signals for the user based on at least a portion of the stored hearing characteristics associated with the user such that the customized audio output signals at least compensate for the hearing impairment regarding the user's ability to hear; and (iii) output the customized audio output signals to the at least one speaker."

Representative claim 1 and the remaining Asserted Claims of the '355 Patent thus fall within the familiar category of ineligible claims for manipulating and outputting data. *See Digitech,* F.3d at 1349-50 ("The claims' only description of the device profile is that it comprises 'first data for describing' color information and 'second data for describing' spatial information. The claims encompass all embodiments of the information contained in the device profile, regardless of the process through which this information is obtained or the physical medium in which it is stored."); *see also RecogniCorp*, 855 F.3d at 1327 ("A process that started with data, added an algorithm, and ended with a new form of data [i]s directed to an abstract idea.")

The Asserted Claims of the '355 Patent are also analogous to human activities performed without computers. *See, e.g.*, *RecogniCorp*, 855 F.3d. at 1326; *CyberSource*, 654 F.3d at 1371. For example, a person speaking to a hearing-impaired person often speaks louder or slower, depending on which manner of speaking is easier for the hearing-impaired person to understand. Likewise, individuals who are hearing impaired often manually adjust their audio devices (e.g.,

radios, televisions, etc.) to better hear the content. These claims automate those human activities, demonstrating their abstractness.

Under *Alice* step two, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '355 Patent fail to provide an inventive concept and instead implement the abstract idea using generic components and well-understood, routine, and conventional activities. For example, representative claim 1 recites generic computer elements such as "electronic circuitry," a "speaker," and a "wireless receiver" configured to perform the recited functions. These generic components implementing conventional activity fail to transform the claims into something more than an abstract idea or otherwise demonstrate an inventive concept.

Claim 1 is representative, and remaining Asserted Claims of the '355 Patent, 2-55, 57-72, 75-82, 85-92, and 95-100, add nothing to claim 1's abstract idea. *See Content Extraction & Transmission*, 776 F.3d at 1348 (analyzing one representative claim is appropriate where others "are substantially similar [and] recite little more than the same abstract idea"). Independent claims 17, 65, 77, and 87 mirror claim 1, adding additional conventional limitations such as force sensors, microphones, touch sensitive surfaces, user input devices, and radiation detectors that perform their traditional functions. These are not meaningful additions.

Dependent claims 2, 18, and 58 recite the additional limitation of wireless capabilities. This was conventional, as admitted by the '355 Patent, and as demonstrated in the accompanying claim charts. '355 Patent, at 50:15-26.

Dependent claims 3, 6-7, 11-16, 19, 22-25, 29, 33-47, 49-50, 53-55, 57, 60, 63-64, 66-70, 78-81, 88-92, and 100 recite nothing more than the use of routine and conventional components performing their traditional functions, such as touch sensitive surfaces, microphones, radiation detectors, force sensors, photodetectors, light detectors, Hall effect detectors, bone conducting

elements, user input devices, accelerometers, and rechargeable batteries. Claims 7, 11-12, 13-16, 19, 22-25, 29, 33-44, 46-47, 49-50, 54-55, 57, 60, 64, 66-70, 78-81, 88-92, and 100 further recite using these generic components to perform their intended functions. Claims 3 and 19 recite a touch sensitive surface configured to sense a touch input. Claim 22 further recites distinguishing a direction of the touch input. Claims 6 and 23 further recite the head-worn personal electronic device being configured to detect a sliding of a finger action. Claim 24 recites determining whether the input pertains to a forward sliding action or a backward sliding action. Claims 7, 11-12, 15, 29, 33-34, 36, 38-40, 57, 60, 80, 89-90, and 100 recite different directions for directional audio pickup (e.g., toward a user for user audio, outward from a user for environmental audio). Claims 11, 15, 34, 40, 60, 68-69, 81, 89-90, and 100 further recite electronic circuitry configured to process audio inputs to remove a portion of audio input associated with the environment (e.g., cancel a portion of the noise). Claims 12, 38-39, 70, and 91-92 similarly recite electronic circuitry configured to determine an ambient noise level and modify or amplify a portion of the audio based on the ambient noise. Claims 35 and 37 similarly recite a microphone picking up a voice input and associating an environmental audio input with the environment to include at ambient noise. Claims 13, 16, 41, 43-44, 66, and 78 recite a radiation detector configured to capture radiation data and electronic circuitry configured to determine whether the head-worn personal electronic apparatus is being worn by a user. Claim 64 similarly recites a radiation detector operatively connected to a rechargeable battery and configured to sense radiation. Claim 41 further recites a radiation emitter configured to direct radiation towards a user and the radiation sensor being operatively connected to the head-worn personal electronic apparatus. Claim 42 further recites detecting infrared radiation. Claim 45 recites a radiation detector comprising a photodetector. Claims 14 and 46-47 recite a force sensor configured to sense force applied to detect a user input to alter an operation

of the head-worn wearable electronic device. Claim 19 recites a touch sensitive surface configured to sense a touch input, Claim 25 recites a sensor configured to sense data regarding whether the head-worn personal electronic apparatus is worn. Claim 49 recites a light detector configured to capture light data electrically connected to electronic circuitry configured to process the light data. Claim 50 further recites the light detector comprising a photodetector. Claims 54, 67, 79 and 88 recite a microphone configured to receive voice inputs to control an operation through voice recognition. Claim 55 recites a Hall effect detector configured to capture data associated with a magnetic characteristic. These components were conventional, and their functions are routine, as admitted by the '355 Patent and as demonstrated in the accompanying claim charts. *See*, *e.g.*, '355 Patent, at 26:33-43.

Dependent claims 4, 20, 71, and 97 recite supporting voice calls, including operation of the head-worn personal electronic apparatus to accept or decline a voice call. This was conventional, as demonstrated in the accompanying claim charts.

Dependents claim 5, 21, 26-28, 48, 72, and 98 recite the additional limitation of specific user interactions (e.g., user preferences and controls such as voice commands). Claims 5, 21, 27, 48, 72, and 98 recite operation of the head-worn personal electronic apparatus to control the customized audio output. Claim 26 recites altering operation of the head-worn personal electronic apparatus based on sensor data. Claim 28 recites altering operation of the head-worn personal electronic apparatus in a lower power operation. This functionality was conventional, as demonstrated in the accompanying claim charts.

Dependent claims 8-10, 30-32, 75-76, 82, 85-86, and 95-96 recite performing ambient sound modification such as noise cancellation. Claims 8, 30 and 82 recite determining an ambient sound level and modifying the audio output based on the ambient sound level. Claims 9, 31, 75,

85 and 95 recite producing an ambient audio output signal based on the ambient sound input and providing the ambient audio sound output signal to a speaker. Claims 10, 32, 76, 86 and 96 further recite determining an ambient noise level based on the ambient sound input wherein the ambient audio output signal is based on the ambient noise level. This was conventional, as demonstrated in the accompanying claim charts.

Dependent claims 51-52 and 99 recite the additional limitation of generating audio alerts. Claim 99 further recites providing audio alerts based on user preference settings. Claim 52 further recites audio alerts being dependent on one or more user preference settings. This was conventional, as demonstrated in the accompanying claim charts. Indeed, IngenioSpec reads these limitations on notifications generally, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. C, at 387-89.

Dependent claim 59 recites the additional limitation of frequency-dependent amplification (e.g., amplifying or attenuating different frequency bands). This was conventional, as hearing loss is typically frequency dependent (e.g., hearing loss often occurs at higher frequencies) as demonstrated in the accompanying claim charts. Indeed, IngenioSpec reads these limitations on a wide range of audio adjustments, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. C., at 417-30.

Dependent claims 61-62 recite the additional limitation of capacitive effects producing electrical responses. Claim 62 further recites distinguishing between a forward sliding action and a backward sliding action using electronic circuitry and user input data. This was conventional, as demonstrated in the accompanying claim charts.

Therefore, the ’355 Patent claims are ineligible under 35 U.S.C. § 101 because they are directed to an abstract idea under *Alice* step 1 and add nothing more than well-understood, routine, conventional activity under *Alice* step 2.

VI. U.S. Patent No. 8,112,104

A. Invalidity Under 35 U.S.C. §§ 102 and 103

1. Identification of Prior Art

Apple identifies the following prior art that anticipates and/or renders obvious, either alone or in combination with other references, one or more Asserted Claims of the ’104 Patent. Apple also incorporates by reference each and every prior art reference of record in the prosecution history of the ’104 Patent and patents or patent applications related to the ’104 Patent, as well as the prior art referred to in the specification of the ’104 Patent.

In these contentions, Apple identifies each item of prior art, including: (1) each patent or patent application constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) by its patent or publication number, country of origin, and date of filing, issue, or publication; and (2) each non-patent publication constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) by its title, date of publication, and, where feasible, author, and publisher.

Apple further may rely on inventor admissions concerning the scope of the prior art relevant to the ’104 Patent found in, inter alia: the specification and figures of the ’104 Patent; the patent prosecution histories for the ’104 Patent and related patents, patent applications, reissues, and/or reexaminations; any deposition testimony of the named inventors of the ’104 Patent; and the papers and evidence submitted by IngenioSpec in this action.

Apple identifies the following patents, patent applications, and non-patent publications as anticipating and/or rendering obvious, either alone or in combination with one or more other prior

art references, one or more Asserted Claims of the ’104 Patent under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) and/or 35 U.S.C. § 103:

Patent No./ Publication No./ Printed Publication	Bates. No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US7027842B2	APL-INGENIO_00821766	Filed on May 30, 2003, and published on April 11, 2006.	Zhang	102(a) and (e)
US20100115149A1	APL-INGENIO_00821538	Filed on December 2. 2002, and published on May 6, 2010.	Ewer	102 (e)
US6633741B1	APL-INGENIO_00821699	Filed on July 6, 2001, and published on October 14, 2003.	Posa	102(a) and (e)
US8924217B2	APL-INGENIO_00822203	Filed on April 22, 2003, claiming priority to a provisional filed April 2, 2002, and was published on October 2, 2003.	Moore	102(a) and (e)
US20030223556A1	APL-INGENIO_00821418	Filed on May 29, 2002, and published on December 4, 2003.	Ju	102(a) and (e)
US7398209B2	APL-INGENIO_00812798	Filed on June 3, 2003, and published on March 4, 2004.	Kennewick	102(e)
US7150526	APL-INGENIO_00818101	Filed on July 18, 2003, claiming priority to provisional applications filed April 3, 2003 and July 26, 2002 and was published on December 19, 2006.	Jannard	102(a) and (e)
US20020146097	APL-INGENIO_00821371	Filed on July 23, 2001, and published on October 10, 2002.	Vuori	102(a), (b), and (e)

Patent No./ Publication No./ Printed Publication	Bates. No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US4908867	APL-INGENIO_00841555	Filed on November 19, 1987, and issued on March 30, 1990.	Silverman	102(a), (b), and (e)
US5652828	APL-INGENIO_00841593	Filed on March 1, 1996, and issued on July 29, 1997.	Silverman	102(a), (b), and (e)
US5832433	APL-INGENIO_00841621	Filed on June 24, 1996, and issued on November 3, 1998.	Yashchin	102(a), (b), and (e)
US6785652	APL-INGENIO_00841665	Filed on December 19, 2002, and issued on August 31, 2004.	Bellegarda	102(e)
US7778819	APL-INGENIO_00841718	Filed on December 4, 2007, claiming priority to an application filed May14, 2003, and issued on August 17, 2010.	Bellegarda	102(e)
US8103505	APL-INGENIO_00841737	Filed on November 19, 2003, and issued on November 24, 2012.	Silverman	102(e)
US6208971	APL-INGENIO_00841654	Filed on October 20, 1998, and issued on March 27, 2001.	Bellegarda	102(a), (b), and (e)
US6836760	APL-INGENIO_00841685	Filed on September 29, 2000, and issued on December 28, 2004.	Bellegarda	102(e)
US7349849	APL-INGENIO_00841704	Filed on July 25, 2002, and issued on March 25, 2008.	Silverman	102(e)
US9218809	APL-INGENIO_00841753	Filed on January 9, 2014, claiming priority to an application filed on March 16, 2000, and issued on December 22, 2015.	Bellegarda	102(e)

Patent No./ Publication No./ Printed Publication	Bates. No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US20030033153A1	APL-INGENIO_00841398	Filed on July 25, 2002, and published on February 13, 2003.	Olsen	102(a), (b), and (e)
WO2003017719A1	APL-INGENIO_00842016	Filed on August 2, 2002, and published on February 27, 2003.	Silverman	102(a), (b), and (e)

Apple further identifies the following prior art apparatuses/systems which are understood to be prior art under 35 U.S.C. §§ 102(a), (b), and/or (g). With this disclosure, Apple identifies by Bates range exemplary material describing the prior art systems. Moreover, each of the references identified in the Related References column of the following table is also a prior art reference in its own right and anticipates and/or renders obvious the Asserted Claims of the ’104 Patent. Apple reserves the right to supplement its identified prior art apparatuses/systems and the evidence thereof, both listed here and in the attached charts, based on any responses received to third-party subpoenas during the court of discovery.

Dragon NaturallySpeaking 7 System: Related References	Bates No.
Dragon NaturallySpeaking 7 user guide	APL-INGENIO_00818871
Dragon Naturally Speaking -Review & Tutorial - YouTube	APL-INGENIO_00820106
Dragon NaturallySpeaking - Wikipedia	APL-INGENIO_00820109
Dragon NaturallySpeaking Needs a Bit More Work _ Fox News	APL-INGENIO_00820112
Dragon NaturallySpeaking Software 10 _ Review & Features	APL-INGENIO_00820120
Dragon NaturallySpeaking Products	APL-INGENIO_00818863
Dragon NaturallySpeaking Speech Objects	APL-INGENIO_00818864
Dragon NaturallySpeaking Nuance Services	APL-INGENIO_00818866
Dragon NaturallySpeaking Nuance Solutions	APL-INGENIO_00818867
Dragon NaturallySpeaking Nuance	APL-INGENIO_00818868
Dragon NaturallySpeaking Speech Recognition Software	APL-INGENIO_00818869
L&H Lexicography Toolkit for Machine Translation _ SpringerLink	APL-INGENIO_00820348
Nuance - News - Press Releases	APL-INGENIO_00820593
Nuance - RealSpeak - Vocalizer	APL-INGENIO_00820597
Nuance vocalizer_3.0_datasheet_1004	APL-INGENIO_00820599
Nuance vocalizer_4.0_datasheet_1004	APL-INGENIO_00820600
Williams Sound Document Library	APL-INGENIO_00822620

Dragon NaturallySpeaking 7 System: Related References	Bates No.
Williams Sound Hearing Helper Tour Guide System, Model TGS 100	APL-INGENIO_00822621
Williams Sound owner_s manuals	APL-INGENIO_00822622
XVoice Notes	APL-INGENIO_00822625
Xvoice 0.9.5	APL-INGENIO_00822628
Xvoice Web Archive	APL-INGENIO_00822632
Apple Prior Art Systems: Related References	**Bates No.**
IBM Announces ViaVoice 98	APL-INGENIO_00841190
IBM Mobility Suite Introduction	APL-INGENIO_00841180
IBM Speech assistant (ViaVoice) History	APL-INGENIO_00820166
IBM ViaVoice 10	APL-INGENIO_00820175
IBM ViaVoice Mobility Suite v.4	APL-INGENIO_00820181
IBM ViaVoice Simply Dictation user guide	APL-INGENIO_00841190
iListen 1.5 New Speech-Recognition Software	APL-INGENIO_00864174
iListen_15_New_speechrecogniti	APL-INGENIO_00864180
iListen_16_dictation_and_editi	APL-INGENIO_00864187

Dragon NaturallySpeaking 7 System: Related References	Bates No.
Inside Macintosh Sound_1994	APL-INGENIO_00863513
Jabra FreeSpeak Datasheet	APL-INGENIO_00820331

In addition to the above prior art references and apparatuses/systems, Apple may rely on additional documents and evidence that disclose or describe the general state of the art and knowledge of a POSITA at the time of the purported inventions.

Apple also incorporates here by reference all reexaminations and *inter partes* review proceedings involving the ’104 Patent.

Charts attached hereto as Exhibits D-1 through D-5 set forth exemplary citations establishing where in the prior art references each element of the Asserted Claims are found, exemplary combinations of references, and exemplary motivations to combine the references. While the exhibits reflect specific exemplary combinations of reference, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Apple’s inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude Apple from identifying other invalidating combinations and/or motivations as appropriate.

B. Invalidity Under 35 U.S.C. § 112

Based on a preliminary investigation and limited discovery to date, Apple identifies the following grounds of invalidity under 35 U.S.C. § 112. Apple reserves the right to modify or supplement these contentions to identify further bases for invalidity under 35 U.S.C. § 112, e.g., based on the Court’s claim construction or further discovery. As Apple best understands

IngenioSpec's allegations at this time, the Asserted Claims of the '104 Patent fail to meet the requirements of 35 U.S.C. § 112 for at least the reasons discussed below .

The Asserted Claims of the '104 Patent fail the written description and/or enablement requirements of § 112 in view of at least the following claim terms and phrases. Apple's contentions that the following claims are invalid under § 112 are made in the alternative and do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the Asserted Claims or that any of the Asserted Claims are not anticipated or rendered obvious by any prior art. The claims and limitations addressed below are merely examples and are not intended to be limiting or exhaustive. Apple reserves all rights to amend these contentions under 35 U.S.C. § 112, including after one or more Asserted Claims are ultimately construed by the Court, in response to any interpretation of one or more Asserted Claims embodied in IngenioSpec's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Apple additionally reserves the right to provide additional explanation and/or argument for these contentions under § 112, including, e.g., based on expert testimony.

1. Lack of Written Description

The Asserted Claims of the '104 Patent are invalid because the specification of the '104 Patent does not provide an adequate written description to support the scope of the claims sought by IngenioSpec in furtherance of its infringement theories. Title 35 of the United States Code § 112, ¶ 1 requires a patent specification to contain "a written description of the invention." The written description "must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (citations omitted). The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" by the time the application is filed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted).

To satisfy the written description requirement, "the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). "[E]nough [of the invention] must be included to convince a person of skill in the art that the inventor possessed the invention . . . ." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

The following claim limitations of the '104 Patent lack written description under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claims 1-2, 5-6, 11, 18-19, 21, 23, and 42, and the claims dependent therefrom	"converting [the] incoming text message to an incoming audio message" / "wherein said converting of the incoming text message is automatically invoked to convert the incoming text message to the incoming audio message" / "wherein said converting of the incoming text message is invoked to convert the incoming text message to the incoming audio message" / "wherein said converting of the incoming text message to the incoming audio message" / "the incoming audio message being produced by converting an incoming text message"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., performing text-to-audio conversion.
Claims 1, 4, 24, 40, and 47, and the claims dependent therefrom	"converting the reply audio message into a reply text message"/ "said converting of the reply audio message" / "wherein the reply audio message thereafter being converted to a reply text message" / "wherein the reply audio message is converted to the reply text message"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., performing audio-to-text conversion.

Claims 2, 6, and 10 and the claims dependent therefrom	"wherein said wireless communication device is configured to perform the operation of determining whether the wireless headset is active, and wherein said converting of the incoming text message is automatically invoked to convert the incoming text message to the incoming audio message, provide[d] that said determining determines that the wireless headset is active"; "A wireless communication system as recited in claim 5, wherein said determining comprises determining whether the wireless headset is active"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., determining whether the wireless communication device is "active."

2. Lack of Enablement

The Asserted Claims of the '104 Patent are invalid due to lack of enablement under 35 U.S.C. § 112, ¶ 1. "[T]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation.'" *Trs. of Bos. Univ. v. Everlight Elecs. Co.*, 896 F.3d 1357, 1362 (Fed. Cir. 2018) (citation omitted); *see id.* at 1365 ("[I]f BU wanted to exclude others from what it regarded as its invention, its patent needed to teach the public how to make and use that invention.").

The following claim limitations in the '104 Patent lack enablement under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claims 1-2, 5-6, 11, 18-19, 21, 23, and 42, and the claims dependent therefrom	"converting [the] incoming text message to an incoming audio message" / "wherein said converting of the incoming text message is automatically invoked to convert the incoming text	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to enable the full scope of the claims, e.g., e.g., performing text-to-audio conversion.

	message to the incoming audio message" / "wherein said converting of the incoming text message is invoked to convert the incoming text message to the incoming audio message" / "wherein said converting of the incoming text message to the incoming audio message" / "the incoming audio message being produced by converting an incoming text message"	
Claims 1, 4, 24, 40, and 47, and the claims dependent therefrom	"converting the reply audio message into a reply text message"/ "said converting of the reply audio message" / "wherein the reply audio message thereafter being converted to a reply text message" / "wherein the reply audio message is converted to the reply text message"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to enable the full scope of the claims, e.g., performing audio-to-text conversion.

C. Invalidity Under 35 U.S.C. § 101

The Asserted Claims of the '104 Patent are invalid under 35 U.S.C. § 101, particularly in view of IngenioSpec's apparent interpretations of the Asserted Claims in its infringement contentions. For example, IngenioSpec reads the Asserted Claims of the '104 Patent onto devices that allegedly "include software to enable wireless communications," "comprise a wireless headset," "receive an incoming text message," "read the message aloud," "record a reply audio message," "transcribe the spoken input into text," and "send[] the reply text message through . . . a messaging service." Plaintiff's Preliminary Infringement Contentions, Ex. A ('104 patent) at 4-5, 34-57, 98-125, 126-169, 170-193, 193-220, 221-238. As explained below, particularly under IngenioSpec's apparent claim interpretations, the Asserted Claims of the '104 Patent are directed

to the abstract idea of performing text-to-audio and audio-to-text conversion. And as underscored by IngenioSpec's contentions, the Asserted Claims of the '104 Patent fail to transform that abstract idea into a practical application. Instead, the '104 Patent is broad enough to encapsulate text-to-speech and speech-to-text processing using generic components and provides no proposed improvement. The Asserted Claims of the '104 Patent fail to disclose any detail in how this processing should be performed and instead broadly covers all such manners of such processing under IngenioSpec's apparent interpretation. *See Elec. Power Grp.*, 850 F.3d at 1356 (finding claims ineligible when "rather than claiming some specific way of enabling a computer to [solve a problem] . . . they purport to monopolize every potential solution to the problem") (cleaned up); *ChargePoint*, 920 F.3d at 766-69 ("[P]atent law does not authorize anyone to preempt.").

A claim is ineligible when it (1) is directed to an abstract idea; and (2) fails to recite significantly more than the abstract idea. *SAP Am., Inc*, 898 F.3d at 1166-67 (citing *Alice*, 573 U.S. at 217). At step one, the court determines if the claims are "directed to" an abstract idea by looking at "the focus of the claimed advance over the prior art." *Trinity*, 72 F.4th at 1361. A claim is directed to an abstract idea if they are equivalent or analogous to human activity or can be performed mentally. *E.g.*, *CyberSource*, 654 F.3d at 1371. So are claims that focus on "collecting information, analyzing it, and displaying certain results." *Elec. Power Grp.*, 830 F.3d at 1353. Likewise, claims are abstract if they provide "only a result-oriented solution, with insufficient detail for how a computer accomplishes it." *Intell. Ventures I*, 850 F.3d at 1342; *see also Apple,* 842 F.3d at 1244 ("[A] claim that merely describes an 'effect or result dissociated from any method by which [it] is accomplished' is not directed to patent-eligible subject matter.").

At step two, the additional elements "must be more than 'well-understood, routine, conventional activity.'" *Intell. Ventures I*, 850 F.3d at 1341 (citation omitted). Claim elements that

implement an abstract idea using generic components or "well-understood, routine, conventional activities" are not inventive and do not pass step two. *Alice*, 134 S. Ct. at 2357-60. Nor do claim elements that simply confine the claims to a "particular field of use or technological environment." *Intellectual Ventures I*, 792 F.3d at 1363-66; *see also In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d at 613 ("[R]ecitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea.").

Under *Alice* step one, particularly under IngenioSpec's apparent interpretation, the Asserted Claims of the '104 Patent are directed to the abstract idea of performing text-to-audio and audio-to-text conversion. For example, representative claim 1 of the '104 Patent recites: "converting [an] incoming text message to an incoming audio message … recording a reply audio message …; [and] converting the reply audio message into a reply text message."

Representative claim 1 and the remaining Asserted Claims of the '104 Patent merely require converting data from one medium to another (e.g., text-to-audio and audio-to-text), and they thus fall within the familiar category of ineligible claims for manipulating and outputting data. *See Enco Sys., Inc. v. DaVincia, LLC*, 845 F. App'x 953, 957 (Fed. Cir. 2021) ("automating the AV-captioning process," e.g., converting a video's audio to text for closed captioning purposes, is an "abstract idea" and only "automat[es] work otherwise performed through human labor"); *see also Allvoice Developments US, LLC v. Microsoft Corp.*, 612 F. App'x 1009 (Fed. Cir. 2015) (holding a talk-to-text / audio transcription patent ineligible under § 101).

The claims are also analogous to human activities performed without computers. *See, e.g.*, *RecogniCorp*, 855 F.3d. at 1326; *CyberSource*, 654 F.3d at 1371. For example, court reporters and stenographers transcribe all record communications during a trial or deposition (e.g., audio-to-text). They are also often asked to read back portions of the transcript to refresh the court or parties

of what was previously said (e.g., text-to-audio). The world is replete with other examples. Word processing personnel have transcribed dictated audio from lawyers for decades. One person may read text aloud to another. These claims automate those human activities, demonstrating their abstractness.

The ’104 Patent is broad enough to encapsulate all manners of text-to-audio and audio-to-text conversion and provides no proposed improvement. In fact, the ’104 Patent explicitly describes how such conversion may be impractical on a mobile device, yet offers no explanation on how to overcome the shortcomings in the field. ’104 Patent, at 11:23-38. The Asserted Claims of the ’104 Patent further fail to disclose any detail in how such conversion should be performed and instead broadly covers all such manners of conversion, impeding the entire field of text-to-audio and audio-to-text conversion, despite such manners of conversion already being well known. *See id.*

Under *Alice* step two, particularly under IngenioSpec’s apparent interpretation, the Asserted Claims of the ’104 Patent fail to provide an inventive concept and instead implement the abstract idea using generic components and well-understood, routine, and conventional activities. For example, representative claim 1 recites generic computer components such as a “wireless headset” and a “wireless communication device,” configured to perform the recited functions. These generic components implementing conventional activity fail to transform the claims into something more than an abstract idea or otherwise demonstrate an inventive concept.

Claim 1 is representative, and the remaining Asserted Claims of the ’104 Patent, 2-3, 5-24, 26-37, and 39-47, add nothing to claim 1’s abstract idea. *See Content Extraction & Transmission*, 776 F.3d at 1348 (analyzing one representative claim is appropriate where others “are substantially similar [and] recite little more than the same abstract idea”). Independent claims 23 and 42 mirror

claim 1, merely rephrasing the manner of conversion in a passive manner. Further, independent claims 23 and 42 only disclose text-to-audio conversion, and rely on dependent claims 24, 40, and 47 to claim audio-to-text conversion. These are not meaningful differences.

Dependent claims 8-9 recite converting text to audio based on user settings and preferences. This was conventional, as demonstrated in the accompanying claim charts. Indicating a manner in which functions are performed through a setting or a preference was a routine and conventional practice.

Dependent claims 11-15, 19-20, 28-31, 35-36, 40, and 43 recite using user-selected speech characteristics to convert text to audio. Claims 12-13, 20, 29-30, 36, and 40 further recite selecting these speech characteristics based on user settings and preferences, which, as discussed above, was routine and conventional. Claims 14 and 31 and further recite the user-selected speech characteristic pertaining to a voice. Claim 40 further recites selecting the speech characteristic through a user setting, prompting a user to provide a reply audio message, converting the reply audio message to a reply text message, and transmitting the reply text message to another electronic device over a wireless network. These limitations were conventional, as demonstrated in the accompanying claim charts. Indeed, IngenioSpec reads these limitations on various settings that affect audible settings, including the language setting on a phone, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. A, at 394-96.

Dependent claims 22, 32, 39, and 40 recite the additional limitation of using routine and conventional components to perform their intended functions, including mobile phones and speakers. Claims 16-17, 24, 26, 33, 40, and 47 further recite using these generic components to perform their intended functions. Claim 16-17, 26, 33, and 40 recite the incoming or outgoing text message as being SMS messages. Claim 32 recites directing an audio output to a speaker in the

headset, wherein the audio output is dependent on a user-selected speech characteristic. Claim 40 further recites a headset converting an incoming text message into an audio message based on a user-selected speech characteristic selected through a user setting, prompting a user to provide a reply audio message, converting the reply audio message to a reply text message, and transmitting the reply text message to another electronic device over a wireless network. Claims 24 and 47 similarly recites transmitting a reply text message to another electronic device over a wireless network. These components were conventional, and their functions were routine, as admitted by the ’104 Patent and as demonstrated in the accompanying claim charts. ’104 Patent, at 1:36-64; 3:64-4:20.

Dependent claims 3, 7, 27, 40, 44 recite the additional limitation of prompting a user to provide a reply audio message. Claim 40 further recites a headset converting an incoming SMS text message into an audio message based on a user-selected speech characteristic selected through a user setting, converting the reply audio message to a reply SMS text message, and transmitting the reply SMS text message over a wireless network. This was conventional, as demonstrated in the accompanying claim charts, as such prompting merely automates the audio-to-text conversion process. Further, the additional limitations of claim 40 (sending and receiving SMS messages and transmitting to another wireless electronic device via a wireless network) are also routine and conventional as discussed above.

Dependent claim 5 recites the additional limitation of determining whether an incoming text message should be presented in an audio manner and subsequently presenting the text message in an audio manner based on said determination. Dependent claim 10 only adds determining whether the wireless headset is active. Dependent claims 2 and 6 similarly recite automatically invoking conversion from text to audio based on a determination that a wireless headset is active.

These limitations were conventional, as demonstrated in the accompanying claim charts. Specifically, determining how to present information, including making such a determination based on device status, is routine and conventional (e.g., presenting text on a screen capable of displaying information when the device is turned on, but not when the device is turned off). Indeed, IngenioSpec reads these limitations on presenting audio when headphones are connected to a mobile device, confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. A, at 238-39.

Dependent claims 18, 34, 41, and 46 recite the additional limitation of translating a portion of an incoming text message from a condensed format to an uncondensed format and converting the text of the uncondensed format to a portion of an audio message. Claims 21, 37, 41, and 45 similarly recite expanding the portion of the incoming text message that is in the chat language to a plurality of words. This was conventional, as demonstrated in the accompanying claim charts. For example, humans have long used abbreviations (e.g., writing down "gov.," but reading as "government") and acronyms (e.g., writing down "USA," but reading as "United States of America."). Indeed, IngenioSpec reads these limitations more broadly on converting text such as converting the text of "2nite" and "B4" to audio that reads "tonight" and "before," (e.g., transliteration) confirming their ineligibility. Plaintiff's Preliminary Infringement Contentions, Ex. A, at 479-81.

Therefore, the Asserted Claims of the '104 Patent are ineligible under 35 U.S.C. § 101 because they are directed to an abstract idea under *Alice* step 1 and add nothing more than well-understood, routine, conventional activity under *Alice* step 2.

VII. U.S. Patent No. 12,001,599

A. Invalidity Under 35 U.S.C. §§ 102 and 103

1. Identification of Prior Art

Apple identifies the following prior art that anticipates and/or renders obvious, either alone or in combination with other references, one or more Asserted Claims of the ’599 Patent. Apple also incorporates by reference each and every prior art reference of record in the prosecution history of the ’599 Patent and patents or patent applications related to the ’599 Patent, as well as the prior art referred to in the specification of the ’599 Patent.

In these contentions, Apple identifies each item of prior art, including: (1) each patent or patent application constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) by its patent or publication number, country of origin, and date of filing, issue, or publication; and (2) each non-patent publication constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) by its title, date of publication, and, where feasible, author, and publisher.

Apple further may rely on inventor admissions concerning the scope of the prior art relevant to the ’599 Patent found in, inter alia: the specification and figures of the ’599 Patent; the patent prosecution histories for the ’599 Patent and related patents, patent applications, reissues, and/or reexaminations; any deposition testimony of the named inventors of the ’599 Patent; and the papers and evidence submitted by IngenioSpec in this action.

Apple identifies the following patents, patent applications, and non-patent publications as anticipating and/or rendering obvious, either alone or in combination with one or more other prior art references, one or more Asserted Claims of the ’599 Patent under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) and/or 35 U.S.C. § 103:

Patent No./ Publication No./ Printed Publication	Bates No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US8482488B2	APL-INGENIO_00819789	Filed on December 22, 2004, and published on July 9, 2013.	Jannard	102(e)
US2004/0063456 A1	APL-INGENIO_00819470	Filed on November 6, 2001, and published on April 1, 2004.	Griffin	102(a), (b), and (e)
WO 02/39600A2	APL-INGENIO_00819512	Filed on November 6, 2001, and published on May 16, 2002.	Griffin	102(a), (b), and (e)
US7010332B1	APL-INGENIO_00819678	Filed on February 21, 2000, and published on March 7, 2006.	Irvin	102(e)
WO 01/63888A1	APL-INGENIO_00824322	Filed on January 24, 2001, and published on August 30, 2001.	Irvin	102(a), (b), and (e)
US7046230B2	APL-INGENIO_00819949	Filed on July 1, 2002, and published on May 16, 2006.	Zadesky	102(e)
US2003/0076306 A1	APL-INGENIO_00864157	Filed on July 1, 2002, and published on April 24, 2003	Zadesky	102(a), (b), and (e)
US7187960B2	APL-INGENIO_00819449	Filed on April 2, 2003, and published on March 6, 2007.	Abreu	102(e)
US6349001B1	APL-INGENIO_00819859	Filed on January 11, 2000, and published on February 9, 2002.	Spitzer	102(a), (b), and (e)
US2005/0136839 A1	APL-INGENIO_00819839	Filed on October 27, 2004, and published on June 23, 2005.	Seshadri	102(a) and (e)
WO2004/093490	APL-INGENIO_00819513	Filed on April 15, 2004, and published on October 28, 2004.	Hollemans	102(a) and (e)

Patent No./ Publication No./ Printed Publication	Bates No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US20020131613 A1	APL-INGENIO_00819710	Filed on January 22, 2002, and published on September 19, 2002.	Jakob	102(a), (b), and (e)
US2005/0192045 A1	APL-INGENIO_00819805	Filed on February 27, 2004, and published on September 1, 2005.	Lowles	102(a) and (e)
US6289100B1	APL-INGENIO_00819818	Filed on March 9, 1999, and published on September 11, 2001.	Ritter	102(a), (b), and (e)
US7650007B2	APL-INGENIO_00819699	Filed on August 24, 2005, and published on January 19, 2010.	Iuliis	102(e).
US6751486B1	APL-INGENIO_00814625	Filed on September 28, 2000, and published on June 15, 2004.	Guillot	102(a) and (e)
US2003/0067585 A1	APL-INGENIO_00813873	Filed on October 6, 2001, and published on April 10, 2003.	Miller	102(a), (b), and (e)
US6923688	APL-INGENIO_00823052	Filed on July 16, 2003, and published on August 2, 2005.	Burson	102(a) and (e)
US7312699	APL-INGENIO_00817066	Filed on April 1, 2004, and published on December 25, 2007.	Chornenky	102(e)
US2004/0258253 A1	APL-INGENIO_00816965	Filed on March 9, 2004, and published on December 23, 2004.	Wurtz	102(a) and (e)
US2005/0226446 A1	APL-INGENIO_00817093	Filed on April 8, 2004, and published on October 13, 2005.	Lou	102(e)
US6532294	APL-INGENIO_00816878	Filed on June 5, 2000, and published on March 11, 2003.	Rudell	102(a), (b), and (e)

Patent No./ Publication No./ Printed Publication	Bates No.	Filing/ Publication/ Issue Date	First Named Inventor/ Author	Prior Art Status (Pre-AIA)
US2004/0052391 A1	APL-INGENIO_00816199	Filed on September 12, 2002, and published on March 18, 2004.	Bren	102(a), (b), and (e)
US7542012	APL-INGENIO_00816290	Filed on June 16, 2005, and published on June 2, 2009.	Kato	102(e)
US6373942	APL-INGENIO_00821653	Filed on April 7, 2000, and published on April 16, 2000.	Braund	102(a), (b), and (e)
US6760459	APL-INGENIO_00814834	Filed on February 15, 2002, and published on July 6, 2004.	Bae	102(a), (b), and (e)

Apple further identifies the following prior art apparatuses/systems which are understood to be prior art under 35 U.S.C. §§ 102(a), (b), and/or (g). With this disclosure, Apple identifies by Bates range exemplary material describing the prior art systems. Moreover, each of the references identified in the Related References column of the following table is also a prior art reference in its own right and anticipates and/or renders obvious the Asserted Claims. Apple reserves the right to supplement its identified prior art apparatuses/systems and the evidence thereof, both listed here and in the attached charts, based on any responses received to third-party subpoenas during the court of discovery.

RIM/Blackberry Wireless Headset HS-500, 655, 655+/Visor Mount Speakerphone VM-605	
BlackBerry Visor Mount Speakerphone VM-605	APL-INGENIO_00819957
BlackBerry HS-500 Review	APL-INGENIO_00819957
BlackBerry HS-655 Bluetooth Headset _ CrackBerry	APL-INGENIO_00819969
BlackBerry HS655 Bluetooth Headset - YouTube	APL-INGENIO_00819982

BlackBerry VM-605 Handsfree Car Kit _ Mobile Fun Blog	APL-INGENIO_00819985
BlackBerry Visor Mount Speakerphone VM-605 User Guide	APL-INGENIO_00819994
BlackBerry Visor Mount VM-605 Review - YouTube	APL-INGENIO_00820009
BlackBerry Wireless Headset HS-500 Manual	APL-INGENIO_00820013
Blackberry HS 665	APL-INGENIO_00820030
Blackberry HS-655+ Manual	APL-INGENIO_00820032
Blackberry HS-655+ Wireless Headset User Guide	APL-INGENIO_00820056
Blackberry HS500 Bluetooth Headset Review - The Gadgeteer	APL-INGENIO_00820073
Blackberry Hs 655 Bluetooth Headset Review	APL-INGENIO_00820086
Blackberry Visor Mount Speakerphone VM-605 Review - The Gadgeteer	APL-INGENIO_00820088
Blackberry-Visor-Mount-Speakerphone VM605	APL-INGENIO_00820104
Blackberry Wireless Headset HS-500 2009	APL-INGENIO_00814629
BlackBerry Visor Mount Speakerphone VM-605	APL-INGENIO_00814855
BlackBerry HS-500 Review	APL-INGENIO_00819957
Ericsson HBH-10, HBH-15	
Ericsson Bluetooth Core.pdf	APL-INGENIO_00820129
Ericsson Bluetooth Solutions	APL-INGENIO_00820130
Ericsson HBH-10 Bluetooth™ Headset HBH-10 Makes Talking Natural – Ericssoners	APL-INGENIO_00820132
Ericsson Unveils First Bluetooth Product	APL-INGENIO_00820139, APL-INGENIO_00820141
Ericsson HBH-10 2000 Guide	APL-INGENIO_00814262

Ericsson HBH 15 Guide	APL-INGENIO_00814290
Nokia HDW-1, HDW-2, HS-4W, HS-12W	
Nokia HDW-1 2002	APL-INGENIO_00814316
Nokia HDW-2 2003	APL-INGENIO_00814335
Nokia HS-12W 1999	APL-INGENIO_00814358
Nokia HS-4W 2004	APL-INGENIO_00814378
Nokia HDW 2 Bluetooth Headset Review	APL-INGENIO_00820516
Nokia HDW-1 User Guide	APL-INGENIO_00820519
Nokia HS-12W Bluetooth Wireless Headset Review	APL-INGENIO_00820538
Nokia HS-4W Wireless Bluetooth Headset Review	APL-INGENIO_00820541
Nokia History	APL-INGENIO_00820543
Nokia HS-12W User Guide	APL-INGENIO_00820550
Nokia Wireless Boom Headset HS4W	APL-INGENIO_00820593
Plantronics M2500, M3000, M3500	
Plantronics M3500 Bluetooth Headset with Audio IQ - Newegg Review	APL-INGENIO_00820738
Plantronics M2500 Bluetooth Headset - Gear Review	APL-INGENIO_00820958
Plantronics M2500 Bluetooth Headset Review – PhoneArena	APL-INGENIO_00820993
Plantronics M2500 User Guide	APL-INGENIO_00821011
Plantronics M3000 Bluetooth headset review	APL-INGENIO_00821031
Plantronics M3000 User Guide	APL-INGENIO_00821035
Plantronics M3000 Review	APL-INGENIO_00821104

Plantronics M3500 User Manual	APL-INGENIO_00821111
Plantronics M3500 Headset Review - Plantronics M3500 Headset	APL-INGENIO_00821113
Plantronics M3500 Mobile Headset with Bluetooth	APL-INGENIO_00822742
Plantronics CS55	
Plantronics CS55 User Guide	APL-INGENIO_00864141
Motorola HS810	
Motorola HS-810 Review	APL-INGENIO_00820454
Motorola HS-8100 Manual	APL-INGENIO_00820459
Motorola HS810 Bluetooth Headset Review	APL-INGENIO_00820491
Motorola HS810 Bluetooth Headset Has Analog Calling - EE Times	APL-INGENIO_00820501
Jabra FreeSpeak, BT200, BT250, BT800	
Jabra FreeSpeak Amazon Page	APL-INGENIO_00863460, APL-INGENIO_00823051
Jabra FreeSpeak Bluetooth Headset Review	APL-INGENIO_00864047, APL-INGENIO_00824326
Jabra BT800 Review	APL-INGENIO_00820186
Jabra BT800 User Manual	APL-INGENIO_00820187
Jabra BT800 Review First Impressions	APL-INGENIO_00820210
Jabra BT800 Review– Jabra BT800 – CNET	APL-INGENIO_00820222
Jabra FreeSpeak BT 200 Brochure	APL-INGENIO_00820227
Jabra FreeSpeak Bluetooth Headset	APL-INGENIO_00820228
Jabra FreeSpeak Datasheet	APL-INGENIO_00820236
Jabra FreeSpeak Brochure	APL-INGENIO_00820238, APL-INGENIO_00820332

Jabra FreeSpeak 250 Datasheet	APL-INGENIO_00820240
Jabra FreeSpeak™ BT 250 Wireless Headset for Bluetooth Phones	APL-INGENIO_00820242
Jabra Freespeak 250 User Guide	APL-INGENIO_00820244
Jabra Freespeak BT200	APL-INGENIO_00820331
Jabra Review Can I Use My New Jabra Bluetooth Device with Other Devices That Have Older Bluetooth Versions	APL-INGENIO_00820333
Jabra Talk Fanchise Release	APL-INGENIO_00820334
Jabra BT800 DoC 20040812	APL-INGENIO_00820336
Jabrab BT800 Bluetooth Headset with Vibrator Alert, Built-in Ring Tones and Caller ID	APL-INGENIO_00820337
Logitech's Mobile Freedom Bluetooth Headset	
Logitech Mobile Freedom and Pro Press Release	APL-INGENIO_00820357
Logitech Mobile Freedom Headset	APL-INGENIO_00820379
Logitech Mobile Freedom Bluetooth Headset Review	APL-INGENIO_00820359
Logitech Mobile Freedom Bluetooth Headset review – PhoneArena	APL-INGENIO_00820360
Logitech Mobile Traveller Review – Logitech Mobile Traveller – CNET	APL-INGENIO_00820383
Logitech Products Mobile Phone Headset	APL-INGENIO_00820388
Logitech Products Mobile Phone Headsets	APL-INGENIO_00820390
Logitech Mobile Phone Headsets Logitech® Mobile Freedom™ Headset	APL-INGENIO_00820393
Logitech Mobile Bluetooth Headset User Guide	APL-INGENIO_00820395

Logitech's Mobile Freedom Bluetooth Headset Review	APL-INGENIO_00820423
Gennum Zen, Gennum xnZen	
Gennum Zen Bluetooth Headset Review – CNET	APL-INGENIO_00823094
Gennum nxZen Review	APL-INGENIO_00823099
Globetechnology Gennum Z-E-N Headset for Bluetooth	APL-INGENIO_00823104
nXZEN Wireless Bluetooth Noise Reduction Headset by Gennum	APL-INGENIO_00841001
Genum Zen User Manual	APL-INGENIO_00840954
Phonak Perseo	
Phonak Annual Report 2003	APL-INGENIO_00820743
Phonak Perseo Multi-Center Trial of a New High-End Digital Hearing System - The Hearing Review	APL-INGENIO_00820841
Phonak – Annual Report (2003–2004)	APL-INGENIO_00820851
Phonak – The Hearing Review Article Re Perseo (Sep. 5, 2003)	APL-INGENIO_00820949
2003 Phonak Product Portfolio	APL-INGENIO_00822747
Phonak Perseo and Supero	APL-INGENIO_00824477
Phonak Perseo Brochure: Perseo – Happy Endings Start at the Beginning	APL-INGENIO_00814179
Phonak Perseo Interview with Perseo Lunch and Learn - Online Chat - Interview	APL-INGENIO_00820831
Phonak Perseo Multi-Center Trial of a New High-End Digital Hearing System _ The Hearing Review	APL-INGENIO_00820841
Phonak Perseo	APL-INGENIO_00820850

Phonak – Online Interview Re Perseo	APL-INGENIO_00820939
Oakly Thump Glasses	
Oklay Thump 2004	APL-INGENIO_00814401

In addition to the above prior art references and apparatuses/systems, Apple may rely on additional documents and evidence that disclose or describe the general state of the art and knowledge of a POSITA at the time of the purported inventions.

Apple also incorporates here by reference all reexaminations and *inter partes* review proceedings involving the ’599 Patent.

Charts attached hereto as Exhibits E-1 through E-3 set forth exemplary citations establishing where in the prior art references each element of the Asserted Claims are found, exemplary combinations of references, and exemplary motivations to combine the references. While the exhibits reflect specific exemplary combinations of reference, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Apple’s inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude Apple from identifying other invalidating combinations and/or motivations as appropriate.

B. Invalidity Under 35 U.S.C. § 112

Based on a preliminary investigation and limited discovery to date, Apple identifies the following grounds of invalidity under 35 U.S.C. § 112. Apple reserves the right to modify or supplement these contentions to identify further bases for invalidity under 35 U.S.C. § 112, e.g., based on the Court’s claim construction or further discovery. As Apple best understands

IngenioSpec's allegations at this time, the Asserted Claims fail to meet the requirements of 35 U.S.C. § 112 for at least the reasons discussed below .

The Asserted Claims of the '599 Patent fail the written description and/or definiteness requirements of § 112 in view of at least the following claim terms and phrases. Apple's contentions that the following claims are invalid under § 112 are made in the alternative and do not constitute, and should not be interpreted as, admissions regarding the construction or scope of the Asserted Claims or that any of the Asserted Claims are not anticipated or rendered obvious by any prior art. The claims and limitations addressed below are merely examples and are not intended to be limiting or exhaustive. Apple reserves all rights to amend these contentions under 35 U.S.C. § 112, including after one or more Asserted Claims are ultimately construed by the Court, in response to any interpretation of one or more Asserted Claims embodied in IngenioSpec's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Apple additionally reserves the right to provide additional explanation and/or argument for these contentions under § 112, including, e.g., based on expert testimony.

1. Lack of Written Description

The Asserted Claims of the '599 Patent are invalid because the specification of the '599 Patent does not provide an adequate written description to support the scope of the claims sought by IngenioSpec in furtherance of its infringement theories. Title 35 of the United States Code § 112, ¶ 1 requires a patent specification to contain "a written description of the invention." The written description "must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (citations omitted). The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" by the time the application is filed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted).

To satisfy the written description requirement, "the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). "[E]nough [of the invention] must be included to convince a person of skill in the art that the inventor possessed the invention . . . ." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

The following claim limitations of the '599 Patent lack written description under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claims 1, 20, 22, 24, and all claims that depend therefrom	"wireless wearable device, with at least a portion of the wireless wearable device configured to be worn in at least one ear of a user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full scope of the claims, e.g., "wireless wearable device" as a standalone headset.
Claims 1, 20, 22, 24, and all claims that depend therefrom	"wherein the at least two conductive areas are configured to removably couple to corresponding conductive contacts of a counterpart connector external to and separate from the wireless wearable device, at least via spring-force"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full scope of the claims, e.g., removably coupling conductive contacts via spring-force.

2. Indefiniteness

The Asserted Claims of the '599 Patent are invalid because they fail to meet the definiteness requirement of 35 U.S.C. § 112, ¶ 2. Title 35 of the United States Code, § 112, ¶ 2 requires that a patent claim "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." "[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with

reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Further, "a patent must be precise enough to afford clear notice of what is claimed, thereby 'appris[ing] the public of what is still open to them.'" *Id.* at 909-10 (citation omitted) ("Otherwise there would be '[a] zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims.'" (citation omitted)). "[A] patent does not satisfy the definiteness requirement of § 112 merely because 'a court can ascribe *some* meaning to a patent's claims.' The claims, when read in light of the specification and the prosecution history, must provide objective boundaries for those of skill in the art." *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (quoting *Nautilus*, 572 U.S. at 911).

The following claim limitations of the '599 Patent are indefinite under 35 U.S.C. § 112, ¶ 2:

Asserted Claim(s)	Claim Term	Rationale
Claims 1, 20, 22, 24, and all claims that depend therefrom	"configured to be worn in at least one ear of a user, to at least help the user hear audio outputs produced by the device"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 because the scope of to "help the user hear" cannot be reasonably ascertained from the specification.

VIII. U.S. Patent No. 12,044,901

A. Invalidity Under 35 U.S.C. §§ 102 and 103

1. Identification of Prior Art

Apple identifies the following prior art that anticipates and/or renders obvious, either alone or in combination with other references, one or more Asserted Claims of the '901 Patent. Apple also incorporates by reference each and every prior art reference of record in the prosecution history of the '901 Patent and patents or patent applications related to the '901 Patent, as well as the prior art referred to in the specification of the '901 Patent.

In these contentions, Apple identifies each item of prior art, including: (1) each patent or patent application constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) by its patent or publication number, country of origin, and date of filing, issue, or publication; and (2) each non-patent publication constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) by its title, date of publication, and, where feasible, author, and publisher.

Apple further may rely on inventor admissions concerning the scope of the prior art relevant to the ’901 Patent found in, inter alia: the specification and figures of the ’901 Patent; the patent prosecution histories for the ’901 Patent and related patents, patent applications, reissues, and/or reexaminations; any deposition testimony of the named inventors of the ’901 Patent; and the papers and evidence submitted by IngenioSpec in this action.

Apple identifies the following patents, patent applications, and non-patent publications as anticipating and/or rendering obvious, either alone or in combination with one or more other prior art references, one or more Asserted Claims of the ’901 Patent under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) and/or 35 U.S.C. § 103:

Patent No./ Publication No./ Printed Publication	**Bates No.**	**Filing/ Publication/ Issue Date**	**First Named Inventor / Author**	**Prior Art Status (Pre-AIA)**
US8482488B2	APL-INGENIO_00819789	Filed on December 22, 2004, and published on July 9, 2013.	Jannard	102(e)
US2004/0063456A1	APL-INGENIO_00819470	Filed on November 6, 2001, and published on April 1, 2004.	Griffin	102(a), (b), and (e)
WO 02/39600A2	APL-INGENIO_00819512	Filed on November 6, 2001, and published on May 16, 2002.	Griffin	102(a), (b), and (e)
US7010332B1	APL-INGENIO_00819678	Filed on February 21, 2000, and published on March 7, 2006.	Irvin	102(e)

WO 01/63888A1	APL-INGENIO_00824322	Filed on January 24, 2001, and published on August 30, 2001.	Irvin	102(a), (b), and (e)
US7046230B2	APL-INGENIO_00819949	Filed on July 1, 2002, and published on May 16, 2006.	Zadesky	102(e)
US2003/0076306A1	APL-INGENIO_00864157	Filed on July 1, 2002, and published on April 24, 2003	Zadesky	102(a), (b), and (e)
US7187960B2	APL-INGENIO_00819449	Filed on April 2, 2003, and published on March 6, 2007.	Abreu	102(e)
US6349001B1	APL-INGENIO_00819859	Filed on January 11, 2000, and published on February 9, 2002.	Spitzer	102(a), (b), and (e)
US20050136839A1	APL-INGENIO_00819839	Filed on October 27, 2004, and published on June 23, 2005.	Seshadri	102(a) and (e)
WO2004/093490	APL-INGENIO_00819513	Filed on April 15, 2004, and published on October 28, 2004.	Hollemans	102(a) and (e)
US20020131613A1	APL-INGENIO_00819710	Filed on January 22, 2002, and published on September 19, 2002.	Jakob	102(a), (b), and (e)
US2005/0192045A1	APL-INGENIO_00819805	Filed on February 27, 2004, and published on September 1, 2005.	Lowles	102(a) and (e)
US6289100B1	APL-INGENIO_00819818	Filed on March 9, 1999, and published on September 11, 2001.	Ritter	102(a), (b), and (e)
US7650007B2	APL-INGENIO_00819699	Filed on August 24, 2005, and published on January 19, 2010.	Iuliis	102(e).
US6751486B1	APL-INGENIO_00814625	Filed on September 28, 2000, and published on June 15, 2004.	Guillot	102(a) and (e)
US2003/0067585A1	APL-INGENIO_00813873	Filed on October 6, 2001, and published on April 10, 2003.	Miller	102(a), (b), and (e)
US6923688	APL-INGENIO_00823052	Filed on July 16, 2003, and published on August 2, 2005.	Burson	102(a) and (e)

US2007/0046887A1	APL-INGENIO_00863466	Filed on October 11, 2006, and published on March 1, 2007.	Howell	102(b)
US2005/0248717A1	APL-INGENIO_00819596	Filed on July 15, 2005, and published on November 10, 2005.	Howell	102(b)
US2005/0248719A1	APL-INGENIO_00819641	Filed on July 15, 2005, and published on November 10, 2005.	Howell	102(b)
US2005/0230596A1	APL-INGENIO_00819531	Filed on March 11, 2005, and published on October 20, 2005.	Howell	102(b)
US2006/0003803A1	APL-INGENIO_00819860	Filed on April 12, 2004, and published on January 5, 2005.	Thomas	102(b)
US7192136B2	APL-INGENIO_00840903	Filed on October 12, 2004, and published on March 20, 2007.	Howell	102(b)
US2004/0208333A1	APL-INGENIO_00840693	Filed on April 15, 2004, and published on October 21, 2004.	Cheung	102(b)
US2005/0248718A1	APL-INGENIO_00840714	Filed on July 15, 2005, and published on November 10, 2005.	Howell	102(b)
US2005/0264752A1	APL-INGENIO_00840732	Filed on July 15, 2005, and published on December 1, 2005.	Howell	102(b)
US2006/0001827A1	APL-INGENIO_00840756	Filed on July 15, 2005, and published on January 5, 2006.	Howell	102(b)
US2006/0023158A1	APL-INGENIO_00840768	Filed on July 15, 2005, and published on February 2, 2006.	Howell	102(b)
US 2006/0276210 A1	APL-INGENIO_00840814	Filed on August 2, 2006, and published on December 7, 2006.	Thomas	102(b)
US2007/0030442A1	APL-INGENIO_00840831	Filed on October 11, 2006, and published on February 8, 2007.	Howell	102(b)

US2007/0109491A1	APL-INGENIO_00840883	Filed on January 6, 2007, and published on May 17, 2007.	Howell	102(b)
US Provisional Application No. 60/725896	APL-INGENIO_00822748	Filed on October 11, 2005, and incorporated by reference into Howell ’887.	Howell	102(b)
US Provisional Application No. 60/725999	APL-INGENIO_00822832	Filed on October 11, 2005, and incorporated by reference into Howell ’887.	Howell	102(b)
US Provisional Application No. 60/787850	APL-INGENIO_00822897	Filed on April 1, 2006, and incorporated by reference into Howell ’887.	Howell	102(b)
US Provisional Application No. 60/846150	APL-INGENIO_00822939	Filed on September 20, 2006, and incorporated by reference into Howell ’887.	Howell	102(b)
US7312699	APL-INGENIO_00817066	Filed on April 1, 2004, and published on December 25, 2007.	Chornenky	102(e)
US2004/0258253A1	APL-INGENIO_00816965	Filed on March 9, 2004, and published on December 23, 2004.	Wurtz	102(a) and (e)
US2005/0226446A1	APL-INGENIO_00817093	Filed on April 8, 2004, and published on October 13, 2005.	Lou	102(e)
US6532294	APL-INGENIO_00816878	Filed on June 5, 2000, and published on March 11, 2003.	Rudell	102(a), (b), and (e)
US2004/0052391A1	APL-INGENIO_00816199	Filed on September 12, 2002, and published on March 18, 2004.	Bren	102(a), (b), and (e)
US7542012	APL-INGENIO_00816290	Filed on June 16, 2005, and published on June 2, 2009.	Kato	102(e)

US6373942	APL-INGENIO_00821653	Filed on April 7, 2000, and published on April 16, 2000.	Braund	102(a), (b), and (e)
US6760459	APL-INGENIO_00814834	Filed on February 15, 2002, and published on July 6, 2004.	Bae	102(a), (b), and (e)

Apple further identifies the following prior art apparatuses/systems which are understood to be prior art under 35 U.S.C. §§ 102(a), (b), and/or (g). With this disclosure, Apple identifies by Bates range exemplary material describing the prior art systems. Moreover, each of the references identified in the Related References column of the following table is also a prior art reference in its own right and anticipates and/or renders obvious the Asserted Claims of the '901 Patent. Apple reserves the right to supplement its identified prior art apparatuses/systems and the evidence thereof, both listed here and in the attached charts, based on any responses received to third-party subpoenas during the court of discovery.

RIM/Blackberry Wireless Headset HS-500, 655, 655+/Visor Mount Speakerphone VM-605	
BlackBerry Visor Mount Speakerphone VM-605	APL-INGENIO_00819957
BlackBerry HS-500 Review	APL-INGENIO_00819957
BlackBerry HS-655 Bluetooth Headset _ CrackBerry	APL-INGENIO_00819969
BlackBerry HS655 Bluetooth Headset - YouTube	APL-INGENIO_00819982
BlackBerry VM-605 Handsfree Car Kit _ Mobile Fun Blog	APL-INGENIO_00819985
BlackBerry Visor Mount Speakerphone VM-605 User Guide	APL-INGENIO_00819994
BlackBerry Visor Mount VM-605 Review - YouTube	APL-INGENIO_00820009
BlackBerry Wireless Headset HS-500 Manual	APL-INGENIO_00820013
Blackberry HS 665	APL-INGENIO_00820030
Blackberry HS-655+ Manual	APL-INGENIO_00820032

Blackberry HS-655+ Wireless Headset User Guide	APL-INGENIO_00820056
Blackberry HS500 Bluetooth Headset Review - The Gadgeteer	APL-INGENIO_00820073
Blackberry Hs 655 Bluetooth Headset Review	APL-INGENIO_00820086
Blackberry Visor Mount Speakerphone VM-605 Review - The Gadgeteer	APL-INGENIO_00820088
Blackberry-Visor-Mount-Speakerphone VM605	APL-INGENIO_00820104
Blackberry Wireless Headset HS-500 2009	APL-INGENIO_00814629
BlackBerry Visor Mount Speakerphone VM-605	APL-INGENIO_00814855
BlackBerry HS-500 Review	APL-INGENIO_00819957
Ericsson HBH-10, HBH-15	
Ericsson Bluetooth Core.pdf	APL-INGENIO_00820129
Ericsson Bluetooth Solutions	APL-INGENIO_00820130
Ericsson HBH-10 Bluetooth™ Headset HBH-10 Makes Talking Natural – Ericssoners	APL-INGENIO_00820132
Ericsson Unveils First Bluetooth Product	APL-INGENIO_00820139, APL-INGENIO_00820141
Ericsson HBH-10 2000 Guide	APL-INGENIO_00814262
Ericsson HBH 15 Guide	APL-INGENIO_00814290
Nokia HDW-1, HDW-2, HS-4W, HS-12W	
Nokia HDW-1 2002	APL-INGENIO_00814316
Nokia HDW-2 2003	APL-INGENIO_00814335
Nokia HS-12W 1999	APL-INGENIO_00814358
Nokia HS-4W 2004	APL-INGENIO_00814378

Nokia HDW 2 Bluetooth Headset Review	APL-INGENIO_00820516
Nokia HDW-1 User Guide	APL-INGENIO_00820519
Nokia HS-12W Bluetooth Wireless Headset Review	APL-INGENIO_00820538
Nokia HS-4W Wireless Bluetooth Headset Review	APL-INGENIO_00820541
Nokia History	APL-INGENIO_00820543
Nokia HS-12W User Guide	APL-INGENIO_00820550
Nokia Wireless Boom Headset HS4W	APL-INGENIO_00820593
Plantronics M2500, M3000, M3500	
Plantronics M3500 Bluetooth Headset with Audio IQ - Newegg Review	APL-INGENIO_00820738
Plantronics M2500 Bluetooth Headset - Gear Review	APL-INGENIO_00820958
Plantronics M2500 Bluetooth Headset Review – PhoneArena	APL-INGENIO_00820993
Plantronics M2500 User Guide	APL-INGENIO_00821011
Plantronics M3000 Bluetooth headset review	APL-INGENIO_00821031
Plantronics M3000 User Guide	APL-INGENIO_00821035
Plantronics M3000 Review	APL-INGENIO_00821104
Plantronics M3500 User Manual	APL-INGENIO_00821111
Plantronics M3500 Headset Review - Plantronics M3500 Headset	APL-INGENIO_00821113
Plantronics M3500 Mobile Headset with Bluetooth	APL-INGENIO_00822742
Plantronics CS55	
Plantronics CS55 User Guide	APL-INGENIO_00864141

Motorola HS810	
Motorola HS-810 Review	APL-INGENIO_00820454
Motorola HS-8100 Manual	APL-INGENIO_00820459
Motorola HS810 Bluetooth Headset Review	APL-INGENIO_00820491
Motorola HS810 Bluetooth Headset Has Analog Calling - EE Times	APL-INGENIO_00820501
Jabra FreeSpeak, BT200, BT250, BT800	
Jabra FreeSpeak Amazon Page	APL-INGENIO_00863460, APL-INGENIO_00823051
Jabra FreeSpeak Bluetooth Headset Review	APL-INGENIO_00864047, APL-INGENIO_00824326
Jabra BT800 Review	APL-INGENIO_00820186
Jabra BT800 User Manual	APL-INGENIO_00820187
Jabra BT800 Review First Impressions	APL-INGENIO_00820210
Jabra BT800 Review– Jabra BT800 – CNET	APL-INGENIO_00820222
Jabra FreeSpeak BT 200 Brochure	APL-INGENIO_00820227
Jabra FreeSpeak Bluetooth Headset	APL-INGENIO_00820228
Jabra FreeSpeak Datasheet	APL-INGENIO_00820236
Jabra FreeSpeak Brochure	APL-INGENIO_00820238, APL-INGENIO_00820332
Jabra FreeSpeak 250 Datasheet	APL-INGENIO_00820240
Jabra FreeSpeak™ BT 250 Wireless Headset for Bluetooth Phones	APL-INGENIO_00820242
Jabra Freespeak 250 User Guide	APL-INGENIO_00820244
Jabra Freespeak BT200	APL-INGENIO_00820331

Jabra Review Can I Use My New Jabra Bluetooth Device with Other Devices That Have Older Bluetooth Versions	APL-INGENIO_00820333
Jabra Talk Fanchise Release	APL-INGENIO_00820334
Jabra BT800 DoC 20040812	APL-INGENIO_00820336
Jabrab BT800 Bluetooth Headset with Vibrator Alert, Built-in Ring Tones and Caller ID	APL-INGENIO_00820337
Logitech's Mobile Freedom Bluetooth Headset	
Logitech Mobile Freedom and Pro Press Release	APL-INGENIO_00820357
Logitech Mobile Freedom Headset	APL-INGENIO_00820379
Logitech Mobile Freedom Bluetooth Headset Review	APL-INGENIO_00820359
Logitech Mobile Freedom Bluetooth Headset review – PhoneArena	APL-INGENIO_00820360
Logitech Mobile Traveller Review – Logitech Mobile Traveller – CNET	APL-INGENIO_00820383
Logitech Products Mobile Phone Headset	APL-INGENIO_00820388
Logitech Products Mobile Phone Headsets	APL-INGENIO_00820390
Logitech Mobile Phone Headsets Logitech® Mobile Freedom™ Headset	APL-INGENIO_00820393
Logitech Mobile Bluetooth Headset User Guide	APL-INGENIO_00820395
Logitech's Mobile Freedom Bluetooth Headset Review	APL-INGENIO_00820423
Gennum Zen, Gennum xnZen	
Gennum Zen Bluetooth Headset Review – CNET	APL-INGENIO_00823094
Gennum nxZen Review	APL-INGENIO_00823099

Globetechnology Gennum Z-E-N Headset for Bluetooth	APL-INGENIO_00823104
nXZEN Wireless Bluetooth Noise Reduction Headset by Gennum	APL-INGENIO_00841001
Genum Zen User Manual	APL-INGENIO_00840954
Phonak Perseo	
Phonak Annual Report 2003	APL-INGENIO_00820743
Phonak Perseo Multi-Center Trial of a New High-End Digital Hearing System - The Hearing Review	APL-INGENIO_00820841
Phonak – Annual Report (2003–2004)	APL-INGENIO_00820851
Phonak – The Hearing Review Article Re Perseo (Sep. 5, 2003)	APL-INGENIO_00820949
2003 Phonak Product Portfolio	APL-INGENIO_00822747
Phonak Perseo and Supero	APL-INGENIO_00824477
Phonak Perseo Brochure: Perseo – Happy Endings Start at the Beginning	APL-INGENIO_00814179
Phonak Perseo Interview with Perseo Lunch and Learn - Online Chat - Interview	APL-INGENIO_00820831
Phonak Perseo Multi-Center Trial of a New High-End Digital Hearing System _ The Hearing Review	APL-INGENIO_00820841
Phonak Perseo	APL-INGENIO_00820850
Phonak – Online Interview Re Perseo	APL-INGENIO_00820939
Oakly Thump Glasses	
Oklay Thump 2004	APL-INGENIO_00814401

In addition to the above prior art references and apparatuses/systems, Apple may rely on additional documents and evidence that disclose or describe the general state of the art and knowledge of a POSITA at the time of the purported inventions.

Apple also incorporates here by reference all reexaminations and *inter partes* review proceedings involving the '901 Patent.

Charts attached hereto as Exhibits F-1 through F-4 set forth exemplary citations establishing where in the prior art references each element of the Asserted Claims are found, exemplary combinations of references, and exemplary motivations to combine the references. While the exhibits reflect specific exemplary combinations of reference, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Apple's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude Apple from identifying other invalidating combinations and/or motivations as appropriate.

B. Invalidity Under 35 U.S.C. § 112

Based on a preliminary investigation and limited discovery to date, Apple identifies the following grounds of invalidity under 35 U.S.C. § 112. Apple reserves the right to modify or supplement these contentions to identify further bases for invalidity under 35 U.S.C. § 112, e.g., based on the Court's claim construction or further discovery. As Apple best understands IngenioSpec's allegations at this time, the Asserted Claims fail to meet the requirements of 35 U.S.C. § 112 for at least the reasons discussed below .

The Asserted Claims of the '901 Patent fail the written description and/or enablement requirements of § 112 in view of at least the following claim terms and phrases. Apple's contentions that the following claims are invalid under § 112 are made in the alternative and do

not constitute, and should not be interpreted as, admissions regarding the construction or scope of the Asserted Claims or that any of the Asserted Claims are not anticipated or rendered obvious by any prior art. The claims and limitations addressed below are merely examples and are not intended to be limiting or exhaustive. Apple reserves all rights to amend these contentions under 35 U.S.C. § 112, including after one or more Asserted Claims are ultimately construed by the Court, in response to any interpretation of one or more Asserted Claims embodied in IngenioSpec's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Apple additionally reserves the right to provide additional explanation and/or argument for these contentions under § 112, including, e.g., based on expert testimony.

1. Lack of Written Description

The Asserted Claims are invalid because the specification of the '901 Patent does not provide an adequate written description to support the scope of the claims sought by IngenioSpec in furtherance of its infringement theories. Title 35 of the United States Code § 112, ¶ 1 requires a patent specification to contain "a written description of the invention." The written description "must do more than merely disclose that which would render the claimed invention obvious." *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (citations omitted). The written description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed" by the time the application is filed. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citation omitted). To satisfy the written description requirement, "the applicant must 'convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,' and demonstrate that by disclosure in the specification of the patent." *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991)). "[E]nough [of the invention] must be

included to convince a person of skill in the art that the inventor possessed the invention . . . ." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005).

The following claim limitations in the '901 Patent lack written description under 35 U.S.C. § 112, ¶ 1:

Asserted Claim(s)	Claim Term	Rationale
Claims 1, 18, 35, 38, 44, and all claims that depend therefrom	"a head-worn personal electronic apparatus"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "head-worn personal electronic apparatus" as a standalone headset.
Claims 3, 58, and all claims that depend therefrom	"wherein the sensed touch input by the touch sensitive surface operates to at least alter operation of the head-worn personal electronic apparatus"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., altering operation of the head-worn personal electronic apparatus based on sensed touch input.
Claims 4, 14, 21, 27, 42, 48, 57, and all claims that depend therefrom	"wherein the sensed touch input by the touch sensitive surface operates to at least alter operation of the head-worn personal electronic apparatus … wherein the at least one operation of the head-worn personal electronic apparatus being altered concerns control of the audio output being provided to the user"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., altering "the audio output" based on "the sensed touch input by the touch sensitive surface."
Claims 5, 29, and all claims that depend therefrom	"distinguish at least a direction of the user input with respect to the touch sensitive surface" / "a user input device … based on at least capacitive effect … distinguish at least a direction of the user input with respect to the user input device"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., distinguishing "a direction of the user input with respect to the touch sensitive surface."

Claims 6, 30, and all claims that depend therefrom	"detect at least a sliding of a finger action with respect to the touch sensitive surface" / "a user input device … based on at least capacitive effect … detect at least a sliding of a finger action with respect to the user input device"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., detecting "a sliding of a finger with respect to the touch sensitive surface."
Claims 7, 31 and all claims that depend therefrom	"facilitate determination at least whether the user input pertains to a forward sliding action or a backward sliding action with respect to the touch sensitive surface" / "a user input device … based on at least capacitive effect … distinguish at least whether the user input pertains to a forward sliding action or a backward sliding action with respect to the user input device using at least the electronic circuitry and the user input data"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "a forward sliding action or a backward sliding action with respect to the touch sensitive surface."
Claims 9, 40, 46, and all claims that depend therefrom	"at least one magnetic element at least partially contained within the head-worn structure and configured to support a magnetic force that facilitates an electrical connection"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "a magnetic force that facilitates an electrical connection."

Claims 15, 43, 49, and all claims that depend therefrom	"a sensor … configured to at least alter operation of the head-worn personal electronic apparatus based at least in part on the sensed data from the sensor … wherein the operation of the head-worn personal electronic apparatus being altered concerns operation of the head-worn personal electronic apparatus in the low power operational mode"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "operation of the head-worn personal electronic apparatus in the low power operational mode" based on "sensed data from the sensor."
Claims 16, 22, 32, 55, and all claims that depend therefrom	"wherein the system comprises: a Hall effect detector configured to capture data associated with a magnetic characteristic" / "wherein the system comprises: a Hall effect detector" / "wherein the system comprises a Hall effect detector"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "wherein the system comprises a Hall effect detector."
Claims 1, 18, 35, 38, 44, and all claims that depend therefrom	"the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus"	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "the head-worn personal electronic apparatus is placed in the charging apparatus."

Claim 58, and all claims that depend therefrom	"a force sensor at least partially contained within the head-worn structure and configured to sense a force input associated with the user, wherein the sensed force input operating to at least alter operation of the head-worn electronic personal audio apparatus … wherein the at least one operation of the head-worn personal electronic apparatus being altered concerns at least accepting or declining a voice call to the user."	The claims are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 because the specification fails to describe the full asserted scope of the claims and does not demonstrate that the inventors possess the full scope of the claims asserted by the plaintiff, e.g., "operation of the head-worn personal electronic apparatus being altered concerns at least accepting or declining a voice call to the user" based on "sensed force input."

IX. IngenioSpec's Asserted Patents Are Not Entitled to their Earliest Claimed Priority Dates

IngenioSpec bears the burden of proving each of its Asserted Patents is entitled to the benefit of priority claimed. *PowerOasis, Inc. v. T-Mobile USA*, Inc., 522 F.3d 1299, 1305 (Fed. Cir. 2008). "In order to gain the benefit of the filing date of an earlier application under 35 U.S.C. § 120, each application in the chain leading back to the earlier application must comply with the written description requirement of 35 U.S.C. § 112." *Lockwood v. Am. Airlines*, 107 F.3d 1565 (Fed. Cir. 1997). There also has to be a "continuous chain of *copending* applications each of which satisfies the requirements of § 112 with respect to the subject matter presently claimed." *In re Hogan,* 559 F.2d 595, 609 (CCPA 1977) (emphasis added). The Asserted Claims fail to meet the continuity and copending requirements, and thus, are not entitled to the earliest priority date of the Asserted Patent's respective families. Below are examples of breaks in priority for the Asserted Patents and the respective impact on the validity of the Asserted Claims.

A. The ’355 and ’693 Patents Are Entitled to a Priority Date No Earlier than September 24, 2021, and IngenioSpec has Accused the Prior Art

The ’355 patent claims priority to the ’693 patent. All independent claims of the ’355 and ’693 patents include a limitation requiring “customized audio output signals.” Both patents rely on U.S. Patent No. 11, 204, 512 (U.S. Application No. 16/574,254) to establish priority. The ’512 patent fails to provide written description support for “customized audio output signals.” Thus, both the ’355 and ’693 patents are only entitled to a priority date as early as September 24, 2021, which makes AirPods 1, AirPods 2, and AirPods Pro prior art. AirPods 1, AirPods 2, and AirPods Pro each anticipate or, in combination with the other prior art cited in these contentions, renders obvious the Asserted Claims of the ’355 and ’693 patents. *Peters v. Active Mfg. Co.*, 129 U.S. 530, 537 (1889); *see also Bristol-Myers Squibb Co. v. Ben Venue Lab’ys, Inc.*, 246 F.3d 1368, 1378 (Fed. Cir. 2001) (“[I]t is axiomatic that that which would literally infringe if later anticipates if earlier.”); *Evans Cooling Sys., Inc. v. Gen. Motors Corp.*, 125 F.3d 1448, 1451 (Fed. Cir. 1997) (“[defendant] bore the burden of proving that the LT1 engine embodied the patented invention or rendered it obvious for purposes of the summary judgment motion, this burden is met by [plaintiff’s] allegation, forming the sole basis for the complaint, that the LT1 engine infringes”); *Vanmoor v. Wal-Mart Stores, Inc.*, 201 F.3d 1363, 1366 (Fed. Cir. 2000) (“[a]lthough [defendants] bore the burden of proving that the cartridges that were the subject of the pre-critical date sales anticipated the [asserted] patent, that burden was satisfied by [plaintiff]’s allegation that the accused cartridges infringe the [asserted] patent”).

B. The ’599 Patent Is Entitled to a Priority Date No Earlier than October 11, 2005, and IngenioSpec has Accused the Prior Art

All independent claims of the ’599 patent include a limitation requiring “wherein the at least two conductive areas are configured to removably couple to corresponding conductive contacts of a counterpart connector external to and separate from the wireless wearable device, at

least via spring-force, to at least enable each of the at least two conductive areas to be electrically connected to its corresponding conductive contact." The '599 patent relies on U.S. provisional application Nos. 60/592,045; 60/605,191; 60/618,107; 60/620,238; 60/646,836; and 60/647,826 to establish priority. These provisional applications fail to provide written description support for "wherein the at least two conductive areas are configured to removably couple to corresponding conductive contacts of a counterpart connector external to and separate from the wireless wearable device, at least via spring-force, to at least enable each of the at least two conductive areas to be electrically connected to its corresponding conductive contact." Thus, the '599 patent is only entitled to a priority date as early as October 11, 2005, which makes the Jannard reference prior art. Jannard anticipates or renders obvious the Asserted Claims of the '599 patent. *See* Ex. E-2.

C. The '901 Patent Is Entitled to a Priority Date No Earlier than November 7, 2018, and Jannard is Invalidating Prior Art

All independent claims of the '901 patent include a limitation requiring a "charging apparatus having at least a charging connector, wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results…and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus." Claims 1, 20-23, and 38 of the '901 include a limitation requiring "a touch sensitive surface at least partially contained within the head-worn structure and configured to sense a touch input associated with the user." The '901 patent relies on U.S. Patent No. 11,086,147 (U.S. Application No. 16/127,957) for its priority claim. The '147 patent fails to provide written description support for a "charging apparatus having at least a charging connector, wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results … and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while

the head-worn personal electronic apparatus is placed in the charging apparatus" or "a touch sensitive surface at least partially contained within the head-worn structure and configured to sense a touch input associated with the user." Thus, the '901 patent is only entitled to a priority date as early as November 7, 2018, which makes AirPods 1 prior art. AirPods 1 anticipate or in combination with the other prior art cited in these contentions renders obvious the Asserted Claims of the '901 patent. *Peters*, 129 U.S. at 537; *see also Bristol-Myers Squibb*, 246 F.3d at 1378 ("[I]t is axiomatic that that which would literally infringe if later anticipates if earlier."); *Evans Cooling*, 125 F.3d at 1451 ("[defendant] bore the burden of proving that the LT1 engine embodied the patented invention or rendered it obvious for purposes of the summary judgment motion, this burden is met by [plaintiff's] allegation, forming the sole basis for the complaint, that the LT1 engine infringes"); *Vanmoor*, 201 F.3d at 1366 ("[a]lthough [defendants] bore the burden of proving that the cartridges that were the subject of the pre-critical date sales anticipated the [asserted] patent, that burden was satisfied by [plaintiff]'s allegation that the accused cartridges infringe the [asserted] patent").

All independent claims of the '901 patent include a limitation requiring a "charging apparatus having at least a charging connector, wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results…and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus." The '901 patent relies on U.S. Application Nos. 11/580,222 and 11/891,411 to establish priority. The '222 and '411 applications fail to provide written description support for a "charging apparatus having at least a charging connector, wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results…and thereby the rechargeable battery of the

head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus." This break in the priority chain results in a priority date at least as late as June 19, 2008, which makes Howell-887 prior art. Howell 887 anticipates or renders obvious all Asserted Claims of the '901 patent. *See* Ex. F-2.

D. The '789 Patent Is Entitled to a Priority Date No Earlier than June 6, 2008, and Cheung Is Invalidating Prior Art

All independent claims of the '789 patent include a limitation requiring a "speaker," which Plaintiff has asserted covers speakers inside a user's ear. The '789 patent is a continuation of U.S. Application No. 10/826,527. The '527 application does not have written description support for a "speaker" inside a user's ear. Thus, the '789 patent is only entitled to a priority date as early as June 6, 2008, which makes the Cheung reference prior art. Cheung anticipates or renders obvious the Asserted Claims of the '789 patent. *See* Ex. A-3.

Dated: November 21, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that, on November 21, 2025, all counsel of record who have appeared in this case were served with a copy of the foregoing via electronic mail.

/s/ Kara A. Specht
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