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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

PINN, INC., Plaintiff, vs. APPLE INC. and GOOGLE LLC, Defendants.	Case No. 8:19-cv-01805-DOC-JDE Lead Case **TECHNICAL SPECIAL MASTER REPORT AND RECOMMENDATION ON CLAIM CONSTRUCTION**

The undersigned, having been appointed Technical Special Master pursuant to Rule 53 of the Federal Rules of Civil Procedure to conduct claim construction proceedings in the above-captioned case, submits this Report and Recommendation on Claim Construction.

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I. INTRODUCTION

Plaintiff Pinn, Inc. ("Plaintiff" or "Pinn") has asserted United States Patents No. 9,807,491 ("the '491 Patent"), 10,455,066 ("the '066 Patent"), and 10,609,198 ("the '198 Patent") against Defendants Apple Inc. ("Apple") and Google LLC ("Google") (collectively, "Defendants").[1] As to both Defendants, Plaintiff asserts Claims 1, 9, and 10 of the '491 Patent, Claims 1, 4, 6, 8, 9, 10, 14, 21, 26, 28, 30, 34, 36, and 38 of the '066 Patent, and Claims 1, 3, 5, 9, 12, 15, 17, 19, 21, 25, 27, and 29 of the '198 Patent. (Dkt. 103 at 1.) "The accused products are Defendants' wireless earbud systems (e.g., Apple's Airpods (all versions), Apple's Powerbeats Pro, [and] Google's Pixel Buds and Pixel Buds 2 . . .)." (*Id.*)

The parties submitted their respective Opening Claim Construction Briefs on April 28, 2020 (Dkt. 103, "Pl. CC Opening"; Dkt. 102, "Defs. CC Opening"). The parties submitted their respective Responsive Claim Construction Briefs on May 15, 2020 (Dkt. 110, "Pl. CC Response"; Dkt. 111, "Defs. CC Response"). Also before the Technical Special Master are the parties' July 16, 2019 Second Amended Joint Claim Construction and Prehearing Statement (Dkt. 97) ("JCCS") and Second Amended Joint Claim Construction Chart (Dkt. 97, Ex. A) ("JCCC"). The parties submit that they have not agreed on any constructions. (JCCS at 1.)

[1] Plaintiff reached a settlement with Defendant Samsung Electronics America, Inc. (*See* Dkt. 124; *see also* Dkt. 152.)

Pursuant to the Court's March 26, 2020 Amended Order Appointing Technical Special Master (Dkt. 77) and Order Regarding Claim Construction Proceedings (Dkt. 78), the Technical Special Master entered orders regarding claim construction proceedings[2] and conducted a claim construction hearing on June 9, 2020. Defendants joined in each other's claim construction arguments, and the Technical Special Master permitted counsel for each Defendant to present oral arguments as to each disputed term if desired. In no instance did one Defendant oppose a position taken by, or argument presented by, the other Defendant. The Technical Special Master therefore herein refers to the positions and arguments of Defendants collectively.

Based on the above-cited briefing as well as the oral arguments presented by counsel at the June 9, 2020 hearing, the Technical Special Master construes the disputed terms as set forth herein.

II. THE PATENTS-IN-SUIT

The '491 Patent, titled "Electronic Device With Wireless Earbud," issued on October 31, 2017. The '066 Patent, titled "Mobile System With Wireless Earbud," issued on October 22, 2019. The '198 Patent, titled "Personal Media System Including Base Station and Wireless Earbud," issued on March 31, 2020. All three of the patents-in-suit bear an earliest priority date of April 3, 2015. The Abstract of the '491 Patent, for

[2] (Dkt. 92-1, Apr. 16, 2020 Technical Special Master Order No. TSM-1 (extending deadlines for claim construction briefing); Dkt. 121-1, May 28, 2020 Technical Special Master Order No. TSM-2 (regarding conducting the claim construction hearing).)

example, states:

> The disclosure herein provides a personal wireless media station including a main body and a wireless earbud. The personal wireless media station may detect that an earbud connector of the wireless earbud is connected to a main body connector of the main body, play sound through a speaker of the main body while the earbud connector is connected to the main body connector, detect that the earbud connector has disconnected from the main body connector, cease to play sound through the speaker of the main body in response to detecting that the earbud connector has disconnected from the main body connector, and wireless [*sic*] send audio data to the wireless earbud and cause sound to be played through the wireless earbud while the earbud connector is not connected to the main body connector.

Defendants submit that "[t]he '491 and '198 patents share essentially identical specifications, while the specification of the '066 patent overlaps to some extent with the other two patents but also omits and adds some figures and features." (Defs. CC Opening at 1.)

III. LEGAL STANDARDS

The Court has set forth relevant legal principles in, for example, *Spigen Korea Co. Ltd. v. Lijun Liu, et al.*, No. 2:16-CV-9185-DOC-DFM, Dkt. 215, 2018 WL 8130608, slip op. at 10–11 (C.D. Cal. Dec. 12, 2018), and *Limestone Memory Systems, LLC v. Micron Technology, Inc.*, No. 8:15-CV-278-DOC-KES, Dkt. 242, 2019 WL 6655273, slip op. at 2–8 (C.D. Cal. Sept. 11, 2019). For example, the Court noted that "[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Spigen Korea*, Dkt. 215, slip op. at 10 (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)). The

Court also noted that "the terms must be read in the context of the entire patent." *Id.* (citing *Phillips*, 415 F.3d at 1314).

IV. THE DISPUTED TERMS

A. "wirelessly pairing" / "wirelessly paired" / "wireless pairing" (Terms 1, 5, 12)[3]

Plaintiff's Proposed Construction	Defendants' Proposed Construction
No construction necessary. Alternatively, "wirelessly pairing" and "wireless pairing" mean: Establish[ing] a wireless connection between two devices to relay information[4] "wirelessly paired" means: A wireless connection is established between two devices to relay information[5]	"wirelessly pairing" and "wireless pairing": Establishing a trusted relationship between two devices that allows them to connect wirelessly, such as Bluetooth pairing "wirelessly paired": A trusted relationship is established between two devices that allows them to connect wirelessly, such as Bluetooth pairing[6]

(JCCC at 1, 14 & 27; Pl. CC Opening at 2; Defs. CC Opening at 2; Defs. CC Response at 2.) The parties submit that these terms appear in Claims 1, 9, and 10 of the '491 Patent, Claims 1, 10, 30, and 34 of the '066 Patent, and Claims 1, 12, 17, 21, and 25 of

[3] These "Term" designations refer to the numbering set forth in the parties' Second Amended Joint Claim Construction Chart (Dkt. 97, Ex. A) ("JCCC").

[4] Plaintiff previously proposed: "Establish[ing] a connection between two devices to relay information." (JCCC at 1; *see id.* at 14 & 27.)

[5] Plaintiff previously proposed: "A connection is established between two devices to relay information." (JCCC at 1; *see id.* at 14 & 27.)

[6] Defendants previously proposed: "A trusted relationship is established between two devices that allows them to connect wirelessly." (JCCC at 1 & 14; *see id.* at 27.)

the '198 Patent. (JCCC at 1, 14 & 27; Pl. CC Opening at 2.)

(1) The Parties' Positions

Plaintiff argues: "While the parties agree that the claims are not limited to using the Bluetooth wireless protocol, the Defendants' proposal incorporates basic principles of Bluetooth operation and does not require a connection. Pinn's proposal requires establishing a connection without limiting the claims to a particular protocol or wireless scheme." (Pl. CC Opening at 2.) Plaintiff submits that "[d]evices that are merely allowed to connect, as Defendants' propose by their construction, are incapable of playing audio unless and until they are connected." (*Id.* at 3.)

Defendants argue:

> "Pairing" is a term of art in wireless technology. The ordinary meaning of "wireless pairing" used in the patents refers to the kind of pairing that occurs in Bluetooth technology, *i.e.*, establishing a trusted relationship between two devices. Pinn's patents do not redefine "pairing" but assume a common understanding of this term in the field. Accordingly, Defendants' construction should be adopted.

(Defs. CC Opening at 2.) Defendants also submit that "[e]lsewhere, the patent uses 'connecting' as distinct from 'pairing,' counseling against construing 'pairing' as 'connecting' as Pinn proposes." (*Id.* at 4 (citing '066 Patent at 30:11–19).) Further, Defendants note that "Bluetooth is the only wireless protocol described in the patents for connecting the earbuds or the mobile base station." (*Id.* at 5.) Finally, Defendants argue that "[t]he specification uses the term 'wirelessly connected' to refer to the state of being connected, different from the trusted relationship that allows a connection, as it does

when using 'wirelessly paired' or 'Bluetooth pairing.'" (*Id.* (citing '491 Patent at 11:5–10).) Defendants conclude that "'wireless pairing' should not be conflated with 'wireless connecting.'" (Defs. CC Opening at 5.)

Plaintiff responds that "[w]hile the specification describes Bluetooth embodiments, the specification makes clear that the claims are not limited to Bluetooth." (Pl. CC Response at 1.) Instead, Plaintiff argues, "paired" means that devices are connected and communicating. (*See id.* at 1–3.)

Defendants respond that "[b]oth sides agree that 'pairing' is a term of art in the wireless field." (Defs. CC Response at 2.) Defendants submit that "[a]lthough pairing need not be limited to Bluetooth pairing *per se,* and Defendants do not advocate such a limitation, the Bluetooth protocol is the *de facto* origin of the term, and it is the most widely used technology employing this concept." (*Id.* at 3.) Defendants likewise urge that "[b]ecause Bluetooth is the only wireless communication technology disclosed in the Pinn patent specifications, pairing when used must *at least* be consistent with how it is used in Bluetooth." (*Id.*)

At the June 9, 2020 hearing, Plaintiff did not contest that the Bluetooth standard involves establishing trusted relationships. (*See, e.g.*, Dkt. 102, Ex. 2.) Plaintiff urged that the patents-in-suit are not limited to Bluetooth and that a person of ordinary skill in the art is not limited to technical knowledge. Plaintiff argued that because the patents-in-suit are directed to consumer products (rather than to, for example, an improvement in a

wireless protocol), a person of ordinary skill in the art would take into account a lay person's understanding of wireless pairing.

(2) Analysis

The parties agree that the specifications refer to Bluetooth as an example, and disclosures in the specifications are consistent with this understanding, such as the following:

> The communications module 502 [*sic*, 514] may use the Bluetooth technology. However, the communications module 514 is not limited as such and may be implemented using any wireless communications standards currently available or developed in the future.

'066 Patent at 25:37–40; *see* '198 Patent at 10:14–17 (similar); *see also* '066 Patent at 25:16–20 ("Such wireless modules may use the Bluetooth technology. However such wireless modules are not limited as such and may be implemented using any wireless communication standards currently available or developed in the future."); '491 Patent at 9:14–17 ("The communications module 302 *may* use Bluetooth technology.") (emphasis added).

Claim 1 of the '491 Patent, for example, recites:

> 1. An apparatus comprising:
> a main body comprising a connection hole, a user input button, at least one processor and at least one memory; and
> a wireless earbud configured for plugging into the connection hole of the main body to form a single integrated body with the main body,
> wherein the wireless earbud has wireless communication capability for *wirelessly pairing* with a smartphone and is configured to receive audio data from the smartphone and to play audio using the audio data from the smartphone when *wirelessly paired* with the smartphone,

> wherein in addition to wireless communication capability for *wireless pairing* with the smartphone, the wireless earbud comprises an earbud connector for connecting with an electric circuit of the main body for wired communication capability with the main body when plugged into the connection hole,
>
> wherein, when wireless earbud is plugged into the connection hole, the wireless earbud is configured to perform wired two-way data communication with the main body,
>
> wherein the at least one processor of the main body is configured to execute computer program instructions stored in the at least one memory
>
> for initiating the *wireless pairing* with the smartphone in response to pressing of the user input button provided on the main body,
>
> for initiating battery charging of the wireless earbud in response to the wireless earbud's plugging into the connection hole, and
>
> for turning off the *wireless pairing* with the smartphone when the wireless earbud is being charged.

In one portion, the specifications disclose:

> The wireless earbud 204 may be *paired* with the main body 202 of the personal wireless media station 300 using a two-way *wired or wireless* communication.

'491 Patent at 11:15–17 (emphasis added); *see* '198 Patent at 12:14–18 (similar); *see also* '066 Patent at 29:36–38 (similar). The specifications thus use the term "paired" with regard to *wired*, as well as wireless, communication. This weighs at least somewhat against Defendants' argument that the patents-in-suit use the term "pairing" in accordance with a well-established meaning in the art of *wireless* communications.

The specification also discloses:

> The mobile phone may be configured to automatically *transmit* any audiovisual information that may otherwise be displayed on the mobile phone itself to the personal wireless media station 100 when the mobile

> device 206 is *paired* with the personal wireless media station 100.

'491 Patent at 8:46–51 (emphasis added). Plaintiff argues that this disclosure regarding data transmission demonstrates that "paired" refers to a state of being connected rather than a discrete event that occurs prior to communication. (*See* Pl. CC Opening at 3.)

Elsewhere, however, the specifications distinguish between "pairing" and merely "connect[ing]." For example, the '491 Patent discloses:

> The user device 206 may have a mobile application installed thereon for configuring the personal wireless media station 100. For example, the mobile application may be configured to set and monitor the Bluetooth *pairing* with the personal wireless media station.
>
> * * *
>
> [T]he processor 306 initiates a Bluetooth *pairing* between the personal wireless media station 300 and the user device 206.
>
> * * *
>
> [T]he user may press a button provided on the personal wireless media station 300, and the button may be configured to generate a command to the user device 206 *wirelessly connected* to the personal wireless media station 300 to turn on or turn off the voice command feature of the user device 206.

'491 Patent at 8:34–38, 10:31–33 & 11:5–10 (emphasis added). As another example, the '066 Patent discloses:

> In some embodiments, upon receiving a user request to *pair* a new earbud, the mobile application 202 initiates *pairing* with the new earbud using the user-provided serial number of the new earbud.
>
> Bluetooth Priority
>
> In some embodiments, when multiple Bluetooth devices are available, the

> personal wireless media station 100 takes priority and *connects* to the primary device 200.

'066 Patent at 30:11–19 (emphasis added); *see id.* at 12:55–59 ("Although Bluetooth is used as an example, any other wireless protocols may be used to establish wireless *connections* between the base station 102 and the wireless earbud 104 and/or between the personal wireless media station 100 and the primary device 200.") (emphasis added). On balance, this intrinsic evidence demonstrates that "pairing" requires more than merely connecting.

As to extrinsic evidence, Plaintiff submits that the term "pairing," in the relevant art, is not limited to Bluetooth, such as shown in United States Patent Application Publication No. 2018/0206122 (for which Apple is the assignee), which discloses that "a pairing can be established via a direct connection between the set-top box 104 and the wireless device (*e.g.*, using Bluetooth)." (Pl. CC Opening, Ex. B at [0077] (emphasis added).)

Defendants, however, submit extrinsic evidence that "pairing" is well-known in the relevant art as referring to establishing a trusted relationship for wireless communication. *See Phillips*, 415 F.3d at 1314 (noting that courts can consider "extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art").

For example, Defendants cite United States Patent No. 8,489,151, relating to a wireless headset, that describes pairing:

> Pairing quite simply is the act of introducing two wireless devices to one another so that they can then communicate. Pairing enables the two or more wireless devices to join and become a *trusted* pair. Within a trusted pair, each device recognizes the other device(s). Then, each device can automatically accept communication and bypass the discovery and authentication process that normally happen [*sic*] during an initial wireless interaction between devices.

(Defs. CC Opening, Ex. 3, U.S. Patent No. 8,489,151 at 5:23–30 (APL-PINN_00013566) (emphasis added).) Defendants similarly cite United States Patent No. 8,401,219 (a patent for which Apple is the assignee):

> In order to enhance the connection, the devices can establish a trusted relationship by using a secret passkey . . . . According to a known Bluetooth standard, *the process of establishing this trusted relationship is called pairing*.

(*Id.*, Ex. 4, U.S. Patent No. 8,401,219 at 21:33–41 (APL-PINN_00013459) (emphasis added).)

The opinions of Defendants' expert, Dr. Jonathan Wells, are further persuasive in this regard. (*See* Defs. CC Opening, Ex. 1, Apr. 28, 2020 Wells Decl. at ¶¶ 52–56; *see also id.* at ¶¶ 71–76, 79–80 & 82.) The contrary opinions of Plaintiff's expert, Dr. V. Thomas Rhyne, are unpersuasive. (*See* Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶¶ 17–18; *see also* Pl. CC Response, Ex. N, May 15, 2020 Rhyne Decl. at ¶¶ 5–10; *id.* at ¶ 9 ("it is my opinion that a PHOSITA [(person having ordinary skill in the art)] would recognize that the inventors of the Pinn patents intended 'pairing/paired' simply to mean 'connecting/connected'").)

Although Plaintiff argues that "pairing" "is not a Bluetooth-specific term,"

Plaintiff acknowledges in its opening brief that "pairing may have been coined in connection with Bluetooth in the 1990s." (Pl. CC Opening at 3.) At the June 9, 2020 hearing, Plaintiff acknowledged that it has submitted no evidence of technologies other than Bluetooth that the specification might have been referring to. *See* '066 Patent at 25:37–40; *see also id.* at 25:16–20; '491 Patent at 9:14–17; '198 Patent at 10:14–17. Plaintiff suggested that Wi-Fi might be an alternative technology and referred to the declarations of Plaintiff's expert, but no relevant evidence is apparent that would support Plaintiff's suggestion of Wi-Fi. (*See* Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶¶ 17–18; *see also* Pl. CC Response, Ex. N, May 15, 2020 Rhyne Decl. at ¶¶ 5–10.)

To whatever extent the term "pairing" has been "genericized," as Plaintiff's expert opines (Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶ 17), Plaintiff fails to show that "pairing" refers to a state of connection or that "pairing" encompasses *any* connection. Indeed, Plaintiff's expert refers to devices being "set up" to communicate with one another:

> Bluetooth pairing describes a process of two compatible devices exchanging profile information they use to securely communicate data when they are connected wirelessly. The term "pairing" has become genericized in the 25 or so years since Bluetooth was developed. Nowadays, in the wireless communication field, paired devices describe wireless devices that are set up to communicate with each other using a wireless communication scheme that may be Bluetooth but could be any wireless protocol.

(Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶ 17.) The opinion of Defendant's expert is also persuasive in this regard. (*See* Defs. CC Response, Ex. 19,

May 15, 2020 Wells Decl. at ¶ 11.)

Plaintiff notes that above-reproduced Claim 1 of the '491 Patent recites "*turning off* the wireless pairing with the smartphone when the wireless earbud is being charged," which Plaintiff interprets as implying that "pairing" refers to a connection rather than a relationship. *See also* '066 Patent, Cl. 21 (similar); '198 Patent, Cl. 12 (similar). Plaintiff notes disclosure that "[w]hen the wireless earbud 104 is plugged into the main body 102 for charging, the wireless *communication* between the main body 102 of the personal wireless media station 100 and the wireless earbud 104 may be turned off." '491 Patent at 7:48–52 (emphasis added); *see id.* at 11:62 ("Automatic Bluetooth on/off—Off when charging"). But whereas Plaintiff argues this disclosure demonstrates that turning off "pairing" refers to turning off "communication," the use of the word "pairing" rather than "communication" in the claim is consistent with understanding that the patentee used "pairing" to have a meaning different than "communication."[7]

Plaintiff's reliance on the so-called "finder" function in Claim 10 of the '066 Patent is likewise unavailing. *See* '066 Patent, Cl. 10 ("wherein the mobile system is configured to generate sound when a mobile application installed on the smartphone is searching for the mobile system while the wireless earbud is *paired* with the smartphone") (emphasis added). Again, the patentee chose to use the term "paired"

[7] The parties have not presented "turning off the wireless pairing" as a disputed term. Also, Defendants noted at the June 9, 2020 hearing that this "turning off" limitation appears in only three of the asserted claims (identified above).

rather than "connected."

Thus, this and other evidence cited by Plaintiff does not reflect "a strong enough suggestion that the inventor intended to displace a well-established term of art." *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1349 (Fed. Cir. 2014), *cert. granted, judgment vacated*, 135 S. Ct. 1846 (2015) (citing *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831 (2015)); *accord CardSoft, LLC v. Verifone, Inc.*, 769 F.3d 1114, 1117 (Fed. Cir. 2015) ("Because the district court's construction does not reflect the ordinary and customary meaning of 'virtual machine' as understood by a person of ordinary skill in the art, we reverse."); *id.* at 1118–19 (discussing evidence of the conventional meaning of "virtual machine"); *Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 738 (Fed. Cir. 2014) ("the terms at issue have so clear an ordinary meaning that a skilled artisan would not be looking for clarification in the specification"; "a clear ordinary meaning is not properly overcome (and a relevant reader would not reasonably think it overcome) by a few passing references that do not amount to a redefinition or disclaimer"). To the extent, if any, that applying the relevant well-established meaning of "pairing" may render certain claim language nonsensical (as Plaintiff discussed at the June 9, 2020 hearing), "even a nonsensical result does not require the court to redraft the claims." *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1373 (Fed. Cir. 2004) (citation and internal quotation marks omitted).

As to Defendants' proposal of "such as Bluetooth pairing," however, any benefit

that might accrue from including this example is outweighed by the risk that a finder of fact might perceive the example as limiting. Defendants' proposal in this regard should therefore be rejected. Finally, Defendants' proposal of "to connect wirelessly" is inconsistent with devices being able to connect wirelessly to one another without being "paired" (such as when connecting for purposes of pairing, *see* Defs. CC Opening, Ex. 1, Apr. 28, 2020 Wells Decl. at ¶¶ 60–61). Instead, wireless pairing allows devices to *communicate* wirelessly with one another. (*See id.* at ¶¶ 57–62.)

The Technical Special Master therefore hereby construes these disputed terms as set forth in the following chart:

Term	Construction
"wirelessly pairing" **"wireless pairing"**	**"establishing a trusted relationship between two devices that allows them to communicate wirelessly"**
"wirelessly paired"	**"a trusted relationship is established between two devices that allows them to communicate wirelessly"**

B. "smartphone" (Terms 2, 7, 13)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
No construction necessary. Alternatively: A mobile phone that performs many of the functions of a computer, typically having a touchscreen interface, Internet access, and an operating system capable of running downloaded applications.	handheld mobile phone that performs many of the functions of a computer[8]

(JCCC at 7, 18 & 27; Pl. CC Opening at 4–5; Defs. CC Opening at 16; Defs. CC Response at 14.) The parties submit that this term appears in Claim 1 of the '491 Patent, Claims 1, 10, 30, and 34 of the '066 Patent, and Claims 1, 3, 9, 15, 17, and 19 of the '198 Patent. (JCCC at 7, 18 & 27; Pl. CC Opening at 4.)

(1) The Parties' Positions

Plaintiff argues that Defendants' proposal of "handheld" is "a new limitation that appears nowhere in the intrinsic record and contradicts the specification." (Pl. CC Opening at 5.) Plaintiff also argues that Plaintiff's proposed construction "includes exemplary functions that more clearly, and appropriately, distinguish a smartphone from

[8] Plaintiff's Opening Claim Construction Brief (Pl. CC Opening at 4 n.1) notes that Defendants, in the parties' March 23, 2020 Joint Identification of Claim Terms and Proposed Constructions (Dkt. 75-1 at 6), proposed a construction ("handheld mobile phone") that has been superseded by the parties' April 10, 2020 Amended Joint Claim Construction Chart (Dkt. 88-1 at 7) and the parties' April 17, 2020 Second Amended Joint Claim Construction Chart (Dkt. 97-1 ("JCCC") at 7).

early mobile phone technology." (*Id.* at 6.)

Defendants argue that "[t]he inclusion of 'handheld,' as proposed by the Defendants, is a necessary clarification because Pinn seeks to expand the plain meaning of 'smartphone' to include a 'smart watch'—a device that the specification clearly states is different from a 'smartphone.'" (Defs. CC Opening at 16.) Defendants also note that "although smartwatches are mentioned as alternative wearable devices to Pinn's disclosed embodiments of a product that clips to a user's clothing, there is no disclosure anywhere of any Pinn device pairing with a smartwatch." (*Id.* at 17.)

Plaintiff responds that "[w]hether strapped to the wrist, held in the hand, or placed in a pocket or purse, the accused smart watches are simply a type of smartphone having a smaller form factor." (Pl. CC Response at 5.) Plaintiff argues that disclosure in the specification of a smart watch used in conjunction with a phone is "different from the accused system, which includes a smart watch being used and functioning as a smartphone." (*Id.*) Plaintiff further submits:

> By adding a "wearable" limitation in the dependent claims to narrow the invention, the applicant intended the *absence* of any such limitation in the independent claims to signal either wearable or not wearable. This would apply to the term "smartphone," which has no limitation on how it is held or worn.

(*Id.* at 6.)

Defendants respond that "the patent not only refers to grabbing the smartphone by hand (as one normally would), but also distinguishes it specifically from a smart watch."

(Defs. CC Response at 14.) Defendants submit that "[m]erely because such devices may be placed into a pocket or purse doesn't change the nature of the device from being handheld." (*Id.*)

At the June 9, 2020 hearing, the parties agreed that the term "smartphone" connotes some degree of independence. Plaintiff urged that a device that can connect to a cellular network and that can be held in a hand is a "smartphone." Plaintiff argued that the distinction in the specification between a smartphone and a "smart watch" is that the disclosed smart watch is an *accessory* for accessing data on a smartphone. As to the dispute regarding "handheld," Plaintiff proposed referring to a mobile phone that is *capable* of being *held* in the hand. Defendants proposed referring to a mobile phone that is *intended* to be held in the hand *for use* (or, stated another way, *intended* for handheld *use*).

(2) Analysis

Defendants essentially agree with Plaintiff's alternative proposed construction except that Defendants propose that a "smartphone" must be "handheld." (*See* Defs. CC Opening at 16 ("As reflected by Defendants' construction and Pinn's alternative construction, both parties agree that a smartphone performs many of the functions of a computer, has an operating system, and is capable of running applications, including those downloaded from the Internet.").) Neither side's expert presents any opinion on this dispute regarding "handheld."

Claim 1 of the '066 Patent, for example, recites (emphasis added):

> 1. A mobile system comprising:
>
> a base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry; and
>
> a wireless earbud configured for plugging into the connection hole of the base station to form an integrated body with the base station,
>
> wherein the system is capable of wirelessly pairing with a *smartphone* for the wireless earbud to receive audio data originated from the *smartphone*,
>
> wherein, in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the *smartphone* such that the wireless earbud receives audio data originated from the *smartphone* and plays audio using the audio data from the *smartphone*,
>
> wherein, in response to plugging the wireless earbud into the connection hole, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,
>
> wherein, when the wireless earbud is plugged into the connection hole of the base station, the wireless earbud is configured to electrically connect with the circuitry of the base station and further configured to performing [*sic*] wired data communication with the base station.

Plaintiff points to dependent claims reciting that the "main body" of a mobile apparatus is "wearable" (Pl. CC Response at 6), such as Claim 33 of the '066 Patent:

> 33. The system of claim 30 wherein the main body further comprises a communication module configured to interface data communication with the wireless earbud *wherein the main body is a wearable device*.

'066 Patent, Cl. 33 (emphasis added); *see* '198 Patent, Cl. 24 (same). These affirmative recitals of "wearable" as to the "main body" are consistent with Plaintiff's argument that any distinction between "wearable" and not "wearable" is not a limitation as to the term "smartphone."

Defendants cite statements in the prosecution history regarding "control[ling] . . . functionalities of a smartphone . . . from a wearable device simply by docking or undocking a wireless earbud." (*See* Pl. CC Response, Ex. P, PCT/US2016/025936, Response at 7 (PINNPatents-000238).) Such statements in the prosecution history, however, do not give rise to any necessary distinction between a "smartphone" and a "wearable." *See Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003) ("As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on *definitive* statements made during prosecution.") (emphasis added).

Admittedly, the specification distinguishes between a "smart phone" and a "smart watch":

> The present disclosure relates to mobile consumer electronic devices and, more particularly, to devices connected to smart phones and tablets for delivering sound and visual information to users. Today, *mobile devices such as smart phones and tablet computers are often used in conjunction with mobile accessories that facilitate user access to the inputs and outputs (e.g., display, speaker, microphone, etc.) of the mobile devices*. For example, if a user wishes to listen to music from his smart phone without disturbing those around him, he may plug a set of earphones into the smart phone and listen through the earphones. If the user wishes to type faster on his smart phone, he may connect a Bluetooth keyboard to the smart phone and type on the Bluetooth keyboard. Thus, using such mobile accessories can improve how users communicate with the mobile devices.
>
> * * *
>
> Today, many mobile electronic accessories are available for use in conjunction with *mobile electronic devices such as smart phones, tablet computers, and other primary devices*. Some of these accessories allow the

> user to switch between the different ways of accessing the content provided on the primary device. For example, if a user wishes to listen to music without disturbing others around him, rather than using the speaker on his phone, he can use a set of headphones that wirelessly connects to his phone and listen to the music stored on his phone through the headphones. Other accessories allow the user to access the content provided on the primary device in a more convenient manner. For example, a user may keep her *smart phone* in her purse (e.g., her smart phone may be too big to fit in her pocket). If she does not wish to constantly reach into her purse and take out her *phone* to check the messages received on her *phone*, she can use a *smart watch* that wirelessly connects to her phone and read and respond to the messages using the touch screen on the *smart watch*.

'066 Patent at 1:6–20 & 4:41–59 (emphasis added). Figures 1–3 of the '066 Patent illustrate a "primary device 200," such as a smartphone or tablet, being carried in a pocket or a purse. *See id.* at 4:60–66.

These disclosures are consistent with Defendants' argument that a "smartphone" cannot simply be *any* device that is mobile, that can be used as a phone, and that can perform many of the functions of a computer. Indeed, adopting Plaintiff's proposal of a "mobile phone that performs many of the functions of a computer" would encompass a wide range of devices, regardless of size. Such a broad interpretation cannot be squared with the above-reproduced disclosure, particularly in light of the apparent distinction between "smart phones" and "tablet computers." *Id.* at 4:42–43.

Plaintiff cites disclosure in the patents-in-suit that a user "may connect a Bluetooth keyboard to the smart phone and type on the Bluetooth keyboard" ('066 at Abstract), and Plaintiff argues that this "would be physically improbable if the smartphone must be 'handheld.'" (Pl. CC Opening at 5.) Plaintiff fails to explain why this is "improbable"

or otherwise not feasible, such as if the smartphone is placed on a surface while the user types. Similarly, Plaintiff fails to show any inconsistency arising from disclosures that a smartphone may be too big to fit in a pocket (or that a user may prefer to keep the smartphone in a pocket or a purse rather than hold it by hand). *See* '066 Patent at 4:41–59 (reproduced above); *see also id.* at Figs. 1–3; '491 Patent at 1:20–21 ("a user may want to keep his smart phone in his pocket while he is having a phone call or listening to music"); '198 Patent at 1:21–22 (same).

At the June 9, 2020 hearing, Plaintiff submitted it is willing to stipulate that a tablet computer is not a "smartphone." The parties manifested agreement at the hearing that a "smartphone" is *no larger* than appropriate for being *held* by hand.

The parties disputed at the hearing whether a "smartphone" can be *no smaller* than is intended for being *used* by hand.[9] On balance, Defendants fail to justify any such limitation. No such distinction is apparent in the specification. Instead, the above-discussed intrinsic evidence demonstrates that the specification distinguishes between a

[9] At the June 9, 2020 hearing, the Technical Special Master questioned counsel for both sides in an effort to determine whether the parties have a mutual understanding of the meaning of Defendants' proposal of "handheld." Defendants clarified that Defendants' proposal of "handheld" means that a "smartphone" is "intended for handheld use." Plaintiff's counsel agreed that a smartphone must be *capable* of being *held* by hand, but Plaintiff disputed Defendants' contention that a smartphone must be *intended* to be *used* by hand. Plaintiff argued that referring to "intent" is vague and therefore should not be included in the construction of "smartphone." Plaintiff urged that if a "smart watch" can be held by hand, has cellular communication capability, and can perform many of the functions of a computer, such a "smart watch" would be within the scope of the term "smartphone."

smartphone and a "smart watch" based on the ability of a smartphone to function as a mobile phone (by communicating on a cellular network)[10] and, relatedly, based on the "smart watch" merely providing access to features of the smartphone. *See* '066 Patent at 4:41−59.

Finally, Plaintiff submits that some Apple Watch products have the same cellular communication capability as iPhone products (*see* Pl. CC Response, Ex. O at 13 & 15), but "[a]lthough it is appropriate for a court to consider the accused device when determining what aspect of the claim should be construed," "[a] claim is construed in the light of the claim language . . . not in light of the accused device." *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1367 (Fed. Cir. 2008). Plaintiff fails to show how Defendant Apple's use of the product name "Apple Watch," to refer to products with particular capabilities, is probative as to claim construction. Likewise, at the June 9, 2020 hearing, Defendants presented extensive argument regarding the capabilities of Defendant's Apple Watch products. For example, Defendants urged that an Apple Watch is merely an accessory because it must be used in conjunction with another device, such as an iPhone. Any such dispute pertains to questions of infringement and

[10] At the June 9, 2020 hearing, the Technical Special Master asked whether Plaintiff understands a "mobile phone" (in the parties' proposed constructions) as being a device that can connect to a cellular network. Plaintiff agreed. Defendants, by referring to cellular capabilities and functionality in their oral arguments, appeared to also agree.

thus is not directly relevant to claim construction. *See id.*[11]

Thus, a "smartphone" must be no larger than capable of being held by hand, a "smartphone" must be capable of communicating on a cellular network (and must be able to do so without needing to communicate through another device), and the remaining arguments presented by the parties relate to factual issues of infringement rather than any legal question for claim construction. *See PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1355 (Fed. Cir. 1998) ("after the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact"); *see also Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 806 (Fed. Cir. 2007) ("[t]he resolution of some line-drawing problems . . . is properly left to the trier of fact") (citing *PPG*, 156 F.3d at

[11] At the June 9, 2020 hearing, Plaintiff argued that the "smart watch" described in the specification is a much more primitive device than the smartwatches of today. Defendants argued that the distinction in the specification between "smart phone" and "smart watch" supports finding that the claim term "smartphone" cannot encompass a watch product such as the Apple Watch, regardless of whether the Apple Watch includes cellular communication capabilities. As evidence that the patentee thereby distinguished all "smart watch" products, including those that might include cellular communication capabilities, Defendants referred to a Wikipedia article showing that smart watches with cellular capability were known at least as early as 1999 (prior to the priority date of the patents-in-suit). Defendants suggested that the Technical Special Master could take judicial notice of this Wikipedia article. The Technical Special Master hereby expressly declines to take judicial notice of this Wikipedia article. Moreover, even if extrinsic evidence of this fact were presented, such evidence would be of limited weight as compared to the manner in which the specification distinguishes between smartphones and smart watches, as discussed above. *See Phillips*, 415 F.3d at 1317.

1355); *Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1318–19 (Fed. Cir. 2016) (citing *PPG*, 156 F.3d at 1355; citing *Acumed*, 483 F.3d at 806).[12]

The Technical Special Master therefore hereby construes **"smartphone"** to mean **"mobile device that can communicate on a cellular network (and can do so without needing to communicate through another device), that can perform many of the functions of a computer, and that can be held by hand."**

C. "mobile application" (Terms 3, 9, 14)

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
No construction necessary. Alternatively: a software application installed on a mobile computing device	A software application installed on a mobile computing device separate from its operating system.

(JCCC at 10, 21 & 27; Pl. CC Opening at 6; Defs. CC Opening at 17; Defs. CC Response at 15.) The parties submit that this term appears in Claim 9 of the '491 Patent, Claims 9, 10, 30, and 34 of the '066 Patent, and Claims 1, 21, and 25 of the '198 Patent. (JCCC at 10, 21 & 27; Pl. CC Opening at 6.)

[12] The Technical Special Master cites these authorities as support for distinguishing between infringement issues and claim construction issues. Nothing in the present Technical Special Master Report and Recommendation on Claim Construction is intended to express any recommendation regarding summary judgment arguments that might be presented at a later stage in this litigation.

(1) The Parties' Positions

Plaintiff argues that "[t]he intrinsic record does not support Defendants' proposed negative limitation, which itself would require further construction to distinguish between intertwined operating system and application software." (Pl. CC Opening at 7.) Further, Plaintiff argues, "[t]he specifications describe functionality of the mobile application that typically is part of a mobile operating system such as iOS or Android." (*Id.*) Plaintiff urges that "Apple and Google are the primary developers of the iOS and Android operating systems," and "[t]hey should not be allowed to escape infringement by manipulating the functionality they incorporate in (and exclude from) their mobile operating systems based upon a construction untethered to the intrinsic record." (*Id.*)

Defendants argue that "a 'mobile application' that the patents describe and claim separately from the 'smartphone'—and indeed state is 'installed on' the smartphone—must be separate from the operating system that is a key characteristic of a smartphone." (Defs. CC Opening at 18.) Defendants also argue that "although the patents do not use the term 'operating system' to describe actions undertaken directly by the smartphone versus those undertaken by a mobile application installed on the smartphone, there is no other way to understand the claims or these specification disclosures." (*Id.* at 19.)

Plaintiff responds that "whether functionality may be considered 'separate from' a mobile 'operating system' is not only unworkable and legally wrong, it is also irrelevant to any issues in this case." (Pl. CC Response at 7.) Plaintiff argues that the intrinsic

evidence contains no "express disclaimer or independent lexicography in the written description that would justify adding that negative limitation." (*Id.* at 6 (quoting *Omega Eng'g*, 334 F.3d at 1323).)

Defendants respond that "Defendants' construction, which provides that the two types of code are separate, stays true to the claim language and the specification, and is consistent with Pinn's own dictionary definitions." (Defs. CC Response at 15.) Defendants submit that "nowhere do the Pinn patents describe or even mention an operating system. Instead the patents assume that the smartphone includes an operating system . . . ." (*Id.* at 17.) Defendants argue their proposal "is a clean division between the operating system and the mobile application, which is exactly what the patents contemplate." (*Id.* at 18.)

At the June 9, 2020 hearing, Defendants argued that the software code for a mobile application is separate from the software code for an operating system. Plaintiff responded that the specification makes no distinction between a mobile application and an operating system. Indeed, Plaintiff emphasized, the specification does not refer to an "operating system" at all. Plaintiff concluded that if "mobile application" were construed to be "separate from" an "operating system," then Defendants might later be able to manipulate the meaning of "operating system" and, in turn, manipulate the meaning of "mobile application."

(2) Analysis

As a threshold matter, Plaintiff argues that this term should not be construed because "there is no relevant controversy." (Pl. CC Response at 7.) Defendants respond that Plaintiff's infringement contentions are inconsistent with the proper separation between mobile applications and operating systems. (Defs. CC Response at 15.) On balance, construction is appropriate to resolve the apparent dispute between the parties regarding the meaning of "mobile application."

Claim 1 of the '198 Patent, for example, recites (emphasis added):

> 1. A mobile system comprising:
> a mobile base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry; and
> a wireless earbud configured for plugging into the connection hole of the mobile base station to form an integrated body with the mobile base station,
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the wireless earbud is configured to electrically connect with the circuitry of the mobile base station and further configured to perform wired data communication with the mobile base station,
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the circuitry of the mobile base station is configured to obtain characteristics of the wireless earbud and send the characteristics to the at least one processor,
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,
> wherein the wireless earbud has wireless communication capability for wireless pairing with a smartphone to perform data communication with the smartphone,
> wherein the mobile system is configured to generate sound when a *mobile application installed on the smartphone* is searching for the mobile system while the wireless earbud is paired with the smartphone,

> wherein, in response to pressing of the user input button of the mobile base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing,
>
> wherein the wireless earbud is not capable of wirelessly sending data to the mobile base station.

Defendants argue that because the claims separately recite a "smartphone," and because a smartphone necessarily includes an operating system, the recital of "a mobile application installed on the smartphone" implies that the mobile application is separate from the operating system. The other claims in which "mobile application" appears also recite a "smartphone." *See* '491 Patent, Cl. 9; *see also* '066 Patent, Cls. 9 ("a mobile application installed on the smartphone"), 10 (same) & 34 (same); '198 Patent, Cls. 1 (same) & 25 (same); *id.*, Cl. 21 ("a smartphone comprising at least one mobile application installed thereon"); '066 Patent, Cl. 30 (same). At the June 9, 2020 hearing, Defendants emphasized that Plaintiff's alternative proposal for "smartphone" includes an "operating system" and that Plaintiff's alternative proposal for "mobile application" refers to an application "installed on" a mobile device.

Although different terms are presumed to have different meanings, Defendants do not propose construing "mobile application" to be distinct from a smartphone. Rather, Defendants propose that a "mobile application" must be separate from a *portion* of a smartphone. These claims recite that the mobile application is for either: (1) generating sound when searching for a system/apparatus ('066 Patent, Cls. 9, 10, 30 & 34; '198 Patent, Claims 1, 21 & 25); or (2) displaying battery status ('491 Patent, Cls. 9 & 17).

Defendants argue that these functions are optional (that is, are not essential for the smartphone to operate) and therefore are not part of the operating system. (*See* Defs. CC Opening at 18.) Defendants also note that "other claims recite that it is the smartphone *itself*—not a mobile application installed on the smartphone—that displays battery status" (*id.* (citing '066 Patent, Cls. 17 & 32; citing '198 Patent, Cls. 8 & 23) "or that wirelessly communicates with the base station or main body" (*id.* at 18–19 (citing '066 Patent, Cls. 4, 12, 25, 27–28, 30, 36 & 37; citing '198 Patent, Cls. 3, 16, 18–19, 21 & 27–28)).

Nothing in the intrinsic evidence, however, explains (let alone disclaims) that a mobile application must be separate from an operating system. Defendants fail to show how the recital of a mobile application "installed on" a smartphone necessarily requires separation between the mobile application and the operating system.

On the contrary, the specification discloses, for example, "[t]he mobile application may also receive audio data and image data captured by the personal wireless media station 100 and *store the data in a memory of the mobile device 206*." '491 Patent at 8:51–54 (emphasis added). Plaintiff submits evidence that an "operating system" controls "input and output functions." (Pl. CC Opening, Ex. I, *Merriam-Webster* ("operating system").)

Defendants do not contest that an operating system typically controls input and output functions. At the June 9, 2020 hearing, Defendants argued that a mobile

application can merely *utilize* such functions of an operating system. Defendants thus argued that disclosures in the specification, such as the above-cited disclosure of a mobile application "stor[ing] the data in a memory of the mobile device 206" ('491 Patent at 8:51–54), are not inconsistent with a mobile application being separate from an operating system.

On balance, this disclosure regarding a mobile application storing data in a memory weighs against Defendants' proposal of requiring separation between a mobile application and an operating system. Plaintiff's expert opines on this point. (*See* Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶¶ 19–20.) Defendant's expert presents no contrary opinion. At the June 9, 2020 hearing, Defendants argued that the opinion of Plaintiff's expert is conclusory and lacks credible evidentiary support. The unrebutted opinion of Plaintiff's expert on this point, however, carries at least some persuasive weight and is consistent with the absence of any distinction as to an "operating system" in the specifications.

Other disclosures cited by Defendants, such as that "[t]he user device . . . may have a mobile application installed thereon" (*see, e.g.,* '491 Patent at 8:33–54), do not adequately support Defendants' suggestion that the user device must already have a separate operating system prior to installation of the mobile application. Further, Defendants fail to show that a mobile application could not supplement, or be combined with, an operating system. Disclosures regarding a mobile application "running on" a

device (*id.* at 11:21–24; '066 Patent at 29:41–44) similarly do not compel a narrow construction. Indeed, the phrase "operating system" appears nowhere in the patents-in-suit.

Finally, Defendants cite extrinsic technical dictionary definitions of "application program" that note a "contrast" between such a program and an operating system. (Defs. CC Opening, Ex. 9, *A Dictionary of Computing* 20 (6th ed. 2008) (APL-PINN_00000025); *see id.*, *A Dictionary of Computer Science* 21 (7th ed. 2016) (APL-PINN_00000019).) This extrinsic dictionary evidence, however, is of limited weight. *See Phillips*, 415 F.3d at 1322 ("[a] claim should not rise or fall based upon the preferences of a particular dictionary editor").[13]

Thus, although the parties agree that a "mobile application" is "a software

[13] At the June 9, 2020 hearing, counsel for Defendant Google further submitted that on a device with the "Android" operating system, a user can use Google's accused Pixel Buds product, can view a list of installed mobile applications, and can install and uninstall various mobile applications without affecting the operating system. Defendant Google noted that, when an Android user views a list of installed applications, there is no application associated with the Google Pixel Buds. Defendant Google explained that sometimes functionality is built into an operating system so as to ensure consistent operation across different types of products. This discussion by Defendant Google perhaps provides context for why Defendants propose that a "mobile application" must be "separate" from an operating system, but this context does not justify imposing a limitation that lacks a basis in the intrinsic evidence. *See Cohesive Techs.*, 543 F.3d at 1367 ("[a] claim is construed in the light of the claim language . . . not in light of the accused device") (citation and internal quotation marks omitted); *see also id.* ("Although it is appropriate for a court to consider the accused device when determining what aspect of the claim should be construed, it is not appropriate for the court to construe a claim solely to exclude the accused device.") (citation and internal quotation marks omitted).

application installed on a mobile computing device," the Technical Special Master rejects Defendants' proposal that a mobile application must be "separate from its [(the mobile computing device's)] operating system." This resolves the parties' dispute. *See, e.g., O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("[C]laim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement.") (citation and internal quotation marks omitted).

The Technical Special Master accordingly hereby construes **"mobile application"** to mean **"a software application installed on a mobile computing device."**

D. "A method of operating the apparatus of claim 1, the method comprising: initiating wireless pairing . . . in response to pressing of the user input button . . . and turning off the wireless pairing . . ." (Term 4)

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Claim is not directed to a hybrid claim and is not indefinite as an improper mixed method and apparatus.	Entire claim is indefinite as directed to improper mixed method and apparatus.

(JCCC at 13; Pl. CC Opening at 8; Defs. CC Opening at 24; Defs. CC Response at 23.) The parties submit that this term appears in Claim 10 of the '491 Patent. (JCCC at 13; Pl. CC Opening at 8.)

(1) The Parties' Positions

Plaintiff argues: "Claim 1 recites an apparatus, and, separately, claim 10 recites a method for using it. Neither claim recites both." (Pl. CC Opening at 8.) Plaintiff further submits that "Claim 10 expressly defines in the preamble a claim scope covering the method of using a particular apparatus." (*Id.*)

Defendants respond that this is an improper mixed method-apparatus claim because "[t]here is no way for a person of ordinary skill in the art to know whether infringement occurs when the accused products are made by defendants with these accused operations or only when the operations are actually performed." (Defs. CC Opening at 25.)

Plaintiff responds that "it is abundantly clear that the only time direct infringement of claim 10 occurs is when the method is performed," and "[d]irect infringement of claim 10 is clearly limited to practicing the claimed method in an apparatus possessing the structure recited in claim 1." (Pl. CC Response at 9.)

Defendants respond that "mixing claims within different statutory classes results in an indefinite claim." (Defs. CC Response at 23.)

At the June 9, 2020 hearing, Defendants cited one of Plaintiff's pleadings, which refers to "making" accused products. (*See* Dkt. No. 132-1 at 68.) Plaintiff responded that the allegation cited by Defendants uses the conjunction "and/or." Plaintiff also reiterated that there is no uncertainty because, on its face, the claim here at issue is

infringed only when all of the recited method steps are performed.

(2) Analysis

Claim 10 of the '491 Patent recites (emphasis added):

> 10. *A method of operating the apparatus of claim 1*, the method comprising:
>
> initiating wireless pairing with the smartphone in response to pressing of the user input button provided on the main body; and
>
> turning off the wireless pairing with the smartphone when the wireless earbud gets charged from the main body.

The body of Claim 10 is in ordinary method claim format, and the parties agree that the preamble is limiting. The parties dispute only whether the recital of "[a] method of operating the apparatus of claim 1" in the preamble gives rise to an improper mixed method-apparatus claim.

> A single patent may include claims directed to one or more of the classes of patentable subject matter, but no single claim may cover more than one subject matter class. *IPXL Holdings*[*, LLC v. Amazon.com, Inc.*], 430 F.3d [1377,] 1384 [(Fed. Cir. 2005)] (holding indefinite a claim covering both an apparatus and a method of using that apparatus).

Microprocessor Enhancement Corp. v. Tex. Instruments Inc., 520 F.3d 1367, 1374 (Fed. Cir. 2008); *see H-W Tech, L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1335 (Fed. Cir. 2014) (finding claim indefinite because "it is unclear when infringement occurs").

Defendants discuss *IPXL* (cited above) as well as *In re Katz Interactive Call Processing Litig.*, which found indefiniteness because the claims "create confusion as to when direct infringement occurs because they are directed both to systems and to actions performed by 'individual callers.'" 639 F.3d 1303, 1318 (Fed. Cir. 2011).

The claim at issue in *IPXL* recited: "The *system* of claim 2 [including an input means] wherein the predicted transaction information *comprises* both a transaction type and transaction parameters associated with that transaction type, *and the user uses* the input means to either change the predicted transaction information or accept the displayed transaction type and transaction parameters." 430 F.3d at 1384 (emphasis added; alteration in *IPXL*). The Federal Circuit found that because the claim "recites both a system and the method of using that system, it does not apprise a person of ordinary skill in the art of its scope, and it is invalid under [35 U.S.C.] section 112, paragraph 2." 430 F.3d at 1384.

The claim at issue in *IPXL*, however, recited an additional structural limitation ("wherein the predicted transaction information comprises both a transaction type and transaction parameters associated with that transaction type") and then recited a method step ("the user uses the input means to . . ."). *Id.* Claim 10 of the '491 Patent, by contrast, recites no additional structural limitations but rather recites "a method of operating the apparatus." Thus, whereas the claim at issue in *IPXL* was a system claim that included a method step, Claim 10 of the '491 Patent is merely a method of using a particular structure.

The claims at issue in *Katz* recited an "interface control system" with limitations including "*interface means* for providing automated voice messages . . . to certain of said individual callers, wherein said certain of said individual *callers digitally enter data*."

639 F.3d at 1384 (emphasis added). Defendants' reliance on *Katz* therefore fails for the same reason as Defendants' above-discussed reliance on *IPXL*; Claim 10 of the '491 Patent is not a system or apparatus claim but rather is merely a method of using a particular structure.[14]

Defendants argue that "dependent claim 10 incorporates apparatus claim 1 in its entirety, and, as such, recites both a method and apparatus." (Defs. CC Response at 23.) But although Claim 10 of the '491 Patent refers to Claim 1, Defendants fail to demonstrate that Claim 10 of the '491 Patent is a dependent claim. This finding also comports with the general principle that a method claim can recite structural limitations. Indeed, the above-cited *Microprocessor Enhancement* case notes that "[m]ethod claim preambles often recite the physical structures of a system in which the claimed method is practiced . . . ." 520 F.3d at 1374.

The Technical Special Master therefore hereby rejects Defendants' indefiniteness argument. Defendants present no alternative proposed construction, so no further construction is necessary.

The Technical Special Master accordingly hereby construes **"A method of operating the apparatus of claim 1, the method comprising: initiating wireless**

[14] Defendants' reliance on a portion of the Manual of Patent Examining Procedure that cites *Katz* is likewise unpersuasive. *See Manual of Patent Examining Procedure* § 2173.05(p)(II) (9th ed., rev. Jan. 2018) ("A single claim which claims both an apparatus and the method steps of using that apparatus is indefinite under 35 U.S.C. 112, second paragraph.").

pairing . . . in response to pressing of the user input button . . . turning off the wireless pairing . . .” to have its **plain meaning** (apart from any constructions of constituent terms).

E. “in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone” (Term 6)

Plaintiff’s Proposed Construction	**Defendants’ Proposed Construction**
Plain and ordinary meaning, no construction necessary.	In response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate “wireless pairing” with the smartphone causing the earbud to receive and play audio based on audio data originated from the smartphone

(JCCC at 17; Pl. CC Opening at 9; Defs. CC Opening at 6; Defs. CC Response at 5.) The parties submit that this term appears in Claim 1 of the ’066 Patent. (JCCC at 17; Pl. CC Opening at 9.)

(1) The Parties’ Positions

Plaintiff argues: “The plain language recites a configuration wherein pressing the button initiates execution of software instructions for pairing so audio data from the

smartphone can be played through the earbuds. No construction is necessary because the claim language clearly describes these functional capabilities of the system." (Pl. CC Opening at 9.) Plaintiff also argues that "[i]n context of the disclosed embodiments, the 'such that' language indicates that this claim is directed to the embodiment that pairs the smartphone and earbuds and audio data does not pass through the base station." (*Id.* at 10.) Plaintiff concludes that "Claim 1 does not require audio playback when the user button is pressed; it recites pressing the button to initiate processing to pair the system components in a particular communication architecture with audio data conveyed from the smartphone to the earbuds without communicating through the base station." (*Id.*)

Defendants argue: "First, the processor 'initiates wireless pairing with the smartphone.' Second, pairing occurs 'such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone.'" (Defs. CC Opening at 6.) Defendants argue that the Court should reject Plaintiff's proposal of providing for the mere capability of playing audio after pairing because "a first act that occurs 'such that' a second act occurs is understood to mean that the first act caused the second act." (*Id.* at 6–7.) Further, Defendants submit that the only relevant disclosure in the specification, regarding Figure 10, is consistent with Defendants' interpretation. (*Id.* at 7 (citing '066 Patent at 17:24–31 & 17:40–42).) Finally, Defendants cite prosecution history in which an "amendment expressly joined the pairing of the phone and the receiving and playing of the audio, both done in

response to pressing the user input button as described by Figure 10." (Defs. CC Opening at 8 (citing *id.*, Ex. 7, Jan. 18, 2019 Amendment and Response to Office Action at 3 (PINNPatents-000855)).)

Plaintiff responds that "[t]he claim is properly drafted to describe broadly the capability of the system to receive audio from the smartphone and then, more narrowly, the structure for initiating pairing (the user button) and the resulting specific structure of a wireless connection between the earbud and the smartphone, so audio playback from the smartphone is directed to the earbud." (Pl. CC Response at 10.) Plaintiff argues that "nothing in the claims or specification describes or requires automatic playback of sound upon pairing initiated by pressing the button." (*Id.* at 9.) Plaintiff submits that "one of ordinary skill in the art would understand from the extensive disclosure that playback is controlled automatically by docking or undocking or by control via smartphone or a playback button." (*Id.* at 11.) Finally, Plaintiff argues that "[t]he prosecution history cited by Defendants does not evidence a clear and unmistakable disclaimer of claim scope." (*Id.*)

Defendants respond: "The plain reading of this language requires that the button initiate pairing to play audio from the cell phone. The functions are linked and both responsive to the button press." (Defs. CC Response at 6.) In other words, Defendants argue, "[t]he configuration recited by the claim is that the pressing of the button initiates pairing and 'receives' and 'plays' audio data, not that it becomes capable of receiving

and playing." (*Id.*) Finally, Defendants urge: "Although Pinn accurately states that this claim does not cover the embodiment where audio is 'relayed' through the 'primary device,' the claim as written covers more than the mere configuration where audio may be played from the smartphone. As shown, the claim language requires the button to initiate the pairing and the playing of audio (as the claim actively states 'receives' and 'plays' audio), not provide mere capability as Pinn urges." (Defs. CC Response at 8.)

(2) Analysis

As a threshold matter, Defendants cite district court decisions regarding the phrase "such that" appearing in disputed terms in different, unrelated patents. (*See* Defs. CC Opening at 6 (citing *3M Innovative Props. Co. v. GDC, Inc.*, 109 F. Supp. 3d 1115, 1132–33 (D. Minn. 2015) (construing "such that" to mean "causing the result that" because intrinsic evidence "demonstrates that 'such that' requires a causal relationship"); citing *Taltech Ltd. v. Esquel Enters. Ltd.*, 410 F. Supp. 2d 977, 1002–03 (W.D. Wash. 2006) (construing "folding . . . such that" to mean "folding, which creates or results in the relationship described following 'such that'"; finding that "[a] causal requirement for 'such that' is supported by other claim language that demonstrates a clear connection between an action (other than folding) and the relationship described following 'such that'")).)

At the June 9, 2020 hearing, Defendants clarified that they are not arguing that "such that" has a special meaning in the art of patent claim drafting, but Defendants

submitted that the above-cited *3M* and *Taltech* cases are examples of courts applying the common usage meaning of "such that." On balance, however, these constructions of different terms in unrelated patents are unpersuasive. *See e.Digital Corp. v. Futurewei Techs., Inc.*, 772 F.3d 723, 727 (Fed. Cir. 2014) ("claims of unrelated patents must be construed separately").

As to the patent here at issue, the '066 Patent, Defendants cite disclosure in the specification regarding Figure 10:

> At block 1002, the primary device 200 receives a user request to initiate sound playback. For example, the user request may be received in response to the *user pressing a button* (either mechanical or digital) on the personal wireless media station 100 or the primary device 200 to accept an incoming call, to play a song, to play a voice message or voicemail, or to perform any other action that may involve providing sound playback.
>
> At block 1004, *in response* to receiving the request to initiate sound playback, *the primary device 200 wirelessly sends sound data to the wireless earbud 104*. If needed, the primary device 200 established a wireless link with the earbud 104. In embodiments, in or before sending the sound data to the earbud 104, the primary device 200 does not make determination as to whether the earbud 104 is docked to or undocked from the base station 104.
>
> At block 1006, in response to receiving the sound data, the earbud plays sound using the sound data from the primary device 200.

'066 Patent at 17:24–42 (emphasis added). This disclosure regarding what happens in response to the user pressing the button, however, appears as part of disclosure regarding Figure 10, which illustrates "method 1000" having "steps" and which "is a flowchart for initiating sound playback." *Id.* at 17:15–23; *see id.* at 3:59–61 ("FIG. 10 illustrates a

flowchart depicting an example method of initiating sound playback via the earbud speaker in accordance with an embodiment.").

Claim 1 of the '066 Patent is not a method claim but rather recites "[a] mobile system" having a particular configuration (emphasis added):

> 1. A mobile system comprising:
>
> a base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry; and
>
> a wireless earbud configured for plugging into the connection hole of the base station to form an integrated body with the base station,
>
> wherein the system is capable of wirelessly pairing with a smartphone for the wireless earbud to receive audio data originated from the smartphone,
>
> wherein, *in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone*,
>
> wherein, in response to plugging the wireless earbud into the connection hole, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,
>
> wherein, when the wireless earbud is plugged into the connection hole of the base station, the wireless earbud is configured to electrically connect with the circuitry of the base station and further configured to performing [*sic*] wired data communication with the base station.

The "such that" language thus provides a configuration detail that relates to the recited processing for wireless pairing configured to be initiated in response to pressing of the user input button. Defendants propose "causing the earbud to receive and play audio based on audio data originated from the smartphone," which would require actually receiving audio data and using the audio data to play audio. But this claim

limitation recites only to "initiate processing for the wireless pairing" to enable receiving and playing audio. Defendants' proposal should be rejected.

This understanding is also consistent with disclosures cited by Plaintiff, such as disclosure of an earbud having a communications module that communicates with a primary device (such as a smartphone). *See* '066 Patent at 25:31–35 ("the communications module 514 receives data from the primary device 200 as well as transmits data to the primary device 200") (referring to Fig. 7). This contrasts with disclosure in which "base station 102 is solely paired with the primary device 200 . . . and *relays* the data received from the primary device 200 to the wireless earbud 104." '066 Patent at 20:7–12 (emphasis added).

The "such that" language thus directs the claim to a configuration in which audio data will not be relayed through the base station. The extrinsic dictionary definition of "such that" submitted with Defendants' responsive brief does not compel otherwise. (*See* Defs. CC Response, Ex. 20, *Collins Dictionary* ("so that, used to express purpose or result") (APL-PINN_00070036) (https://www.collinsdictionary.com/us/dictionary/english/such-that).

Although the specification discloses that, in one embodiment, "the circuitry is *configured such that* the sound playback is *automatically* provided via the base station speaker if the wireless earbud 104 is docked and via the earbud speaker if the wireless earbud 104 is undocked" ('066 Patent at 17:6–10 (emphasis added); *see id.* at 18:35–42),

this can be fairly read as disclosing automatically switching which speaker will be used for playback, not automatically playing audio. Further, even if this disclosure were interpreted as referring to automatically playing audio, the claims here at issue do not recite "automatically" playing audio.

Finally, Defendants cite the prosecution history of the '066 Patent, wherein application claim 23 (which Defendants submit issued as Claim 1), included a limitation that "the personal media system is capable of wirelessly pairing with a smartphone such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone." (Defs. CC Opening, Ex. 7, Apr. 30, 2018 Preliminary Amendment at 2 (PINNPatents-000790).) In response to a rejection (*see id.*, July 26, 2018 Office Action at 6–7 (PINNPatents-000829–30)), Pinn amended the claim by moving the audio limitation to the limitation that requires initiating wireless pairing in response to pressing of the user input button (amendment shown with additions underlined and deletions in strikeout, as in original):

> wherein the ~~personal media~~ system is capable of wirelessly pairing with a smartphone <u>for</u> ~~such that~~ the wireless earbud <u>to receive</u> ~~receives~~ audio data originated from the smartphone ~~and plays audio using the audio data from the smartphone~~,
>
> wherein, in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone <u>such that the wireless earbud receives audio data originated from the smartphone and plays audio using the audio data from the smartphone</u>,

(*Id.*, Jan. 18, 2019 Amendment and Response to Office Action, at 3 (PINNPatents-

000855).)

This prosecution history does not undercut the reading of the issued claim language set forth above. That is, Defendants fail to show that this amendment compels requiring automatically playing audio in response to pressing of the user input button, and Defendants do not cite any remarks by Plaintiff in this prosecution history that would warrant Defendants' proposed interpretation. (*See id.*; *see also id.* at 13–16 (PINNPatents-000865–68).)

Defendants argue that "[a] pair cannot occur at some indefinite and uncertain time in the future, because at least the capability of playing audio must result." (Defs. CC Response at 7.) Defendants reiterated this argument at the June 9, 2020 hearing. Defendants' premise that "at least the capability of playing audio must result," however, is based on Defendants' position that pairing must actually occur. Again, the claim language here at issue recites "initiat[ing] processing for the wireless pairing" to enable receiving and playing audio. This does not necessarily require completion of wireless pairing (or actual playing of audio).

The Technical Special Master therefore hereby construes **"in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone such that the wireless earbud receives audio data originated from the smartphone and plays audio using**

the audio data from the smartphone" to mean **"in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone to enable the wireless earbud to receive and play audio data originated from the smartphone."**

F. "information display" (Term 8)

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Plain and ordinary meaning, no construction necessary. Alternatively, a device or part of a device that provides or delivers information in visual form.	Digital screen

(JCCC at 18; Pl. CC Opening at 11; Defs. CC Opening at 20; Defs. CC Response at 18.) The parties submit that this term appears in Claim 8 of the '066 Patent. (JCCC at 18.)

(1) The Parties' Positions

Plaintiff argues that no construction is necessary because this term "is not a term of art and does not include any technical language." (Pl. CC Opening at 11.) Alternatively, Plaintiff proposes that "[t]he form or structure of the display is not critical, so long as it can deliver in visual form one or more types of information contemplated by the patent . . . ." (*Id.* at 12.) Plaintiff argues that Defendants' proposal should be rejected because "[t]he term *display screen* appears only in one short passage – at the top

of Column 14 – where it is described as but one embodiment in which the display 'may' include one or more display screens." (*Id.* at 14 (citing '066 Patent at 14:3–8).)

Defendants argue that "[t]he specification of the '066 patent contrasts 'displays' from alternative visible 'outputs', e.g., lights/LED indicators." (Defs. CC Opening at 20 (citations omitted); *see id.* at 20–21.)

Plaintiff responds that "[r]ewriting the claim as Defendants propose threatens to confuse the jurors who may believe (incorrectly) that a 'digital screen' – much like a digital watch – must be capable of displaying numbers or letters." (Pl. CC Response at 12.) Plaintiff also argues that the specification discloses that a display is not necessarily a "screen" but rather may be a "surface." (*Id.*)

Defendants respond that "[a]s reflected in the intrinsic and extrinsic record, including Plaintiff's own evidence, a 'display' on an electronic device is a screen—not merely a blinking light." (Defs. CC Response at 19.) Defendants also argue that "Defendants' proposed construction preserves the plain and ordinary meaning of 'display' with the modifier 'digital' to clarify the fact that the 'display' is recited by the claim as part of an electronic device (and not a static image painted or engraved on the device)." (*Id.*)

At the June 9, 2020 hearing, Plaintiff maintained its opposition to Defendants proposal of "digital," but Plaintiff suggested it would not be opposed to "electronic." Plaintiff therefore proposed that "information display" could be construed to mean "an

electronic device or part of an electronic device that provides or delivers information in visual form." Defendants were amenable to "electronic" but maintained that "information display" refers to a screen and does not encompass an LED indicator.[15]

(2) Analysis

Claim 8 of the '066 Patent recites:

> 8. The system of claim 1 wherein the base station further comprises an information display.

The term "information display" appears nowhere else in the '066 Patent, aside from the Summary section of the specification, which essentially merely repeats the claim language at issue. *See* '066 Patent at 1:28–29 & 2:12–19.

The specification discloses that the display may utilize any display technology that was available at the time of the invention:

> Display Surface
>
> In embodiments, a *display panel* is provided under the display surface 106.

[15] At the June 9, 2020 hearing, Defendants presented a portion of Plaintiff's website that illustrates a device labeled as having both an "LED *Indicator*" and an "OLED *Display*." (Dkt. No. 132 at 90 (emphasis added).) The Technical Special Master permitted Defendants to file this document as an exhibit after the June 9, 2020 hearing. (Dkt. 137, Ex. 21.) The Technical Special Master also permitted a response by Plaintiff, a reply by Defendants, and a sur-reply by Plaintiff. (Dkts. 144, 150 & 156.) The Technical Special Master having thus given Plaintiff ample opportunity to address this new exhibit, the Technical Special Master hereby rejects Plaintiff's argument that this exhibit should be disregarded as untimely. Upon review of this exhibit, which is extrinsic evidence, and upon consideration of the arguments presented by both sides, the Technical Special Master finds that this new exhibit does not significantly affect the claim construction analysis.

> The display panel may incorporate an available display technology such as LCD and OLED technologies. In embodiments, the display surface 106 is capable of *displaying information* including incoming call information, song information, text information, email information, and photographic information and the like.
>
> * * *
>
> The display may include one or more *display screens* that display, e.g., under the control of the processor 506, the data processed by the processor 506. That data may include text, images, or other visual content. For example, the display may be provided on a side surface of the base station 102 as shown in FIG 4. The one or more *display screens* can be any of various conventional displays such as a liquid crystal display (LCD), a light-emitting diode (LED) display, an organic light-emitting diode (OLED) display, etc., or any other display means to be developed in the future. In certain embodiments, the display is a color display. In other embodiments, the display is not a color display but is grayscale.

'066 Patent at 6:25–32 & 14:2–14 (emphasis added); *see id.* at 5:7–8 ("display *surface* for providing visual data") (emphasis added).

Plaintiff emphasizes that these passages disclose merely that the "display *may* include one or more display screens." (*Id.* at 14:2–3 (emphasis added).) The specification also discloses "LED indicators" as well as "screens" and "displays":

> [T]he base station 102 may include one or more additional wireless earbuds, clips, speakers, *LED indicators*, microphones, LCD *screens*, and/or base station connectors.
>
> * * *
>
> The output(s) 512 may include one or more speakers, display surfaces, light *indicators*, etc. As shown in FIG. 7, the base station 102 communicates with the primary device 200 including a mobile application 202 and the wireless earbud 104 including a communications module 514 and output(s) 516.

> * * *
>
> Output(s)
>
> The base station 102 may include one or more outputs for providing visual or audible information to the user. Such outputs may include one or more speakers, *displays*, *LED indicators*, and the like.
>
> * * *
>
> The personal wireless media station 100 may further include an alarm function that plays an alarm indication at a specified time via a speaker, an *LED indicator, and/or the display surface* 106. . . . In response to receiving the alarm indication, the personal wireless media station 100 causes the alarm indication to be output to the user via the speaker, the *LED indicator, and/or the display surface* 106.

'066 Patent at 12:13–16, 12:37–39, 13:62–66 & 29:5–14 (emphasis added).

These disclosures, however, refer to both "displays" and "indicators," which is consistent with Defendants' proposal that an LED indicator is not a "display." The specification reinforces this distinction by disclosing "blinking" indicators, such as "LED light indicators":

> LED Light Indicator
>
> The base station 102 and/or the wireless earbud 104 may include LED light indicators for indicating information to the user by blinking or flashing light therefrom. For example, such LED light indicators may indicate that the battery level is low (e.g., by blinking in red) or that there is an unread message or a missed call (e.g., by lighting up).

'066 Patent at 11:58–64; *see id.* at 27:57–62 ("provide an indication that a call is incoming . . . [such as] via the LED indicator by providing a blinking signal") & 29:59–

61 ("When the finder function is activated, the personal wireless media station 100 may beep and the LED light indicator may blink.").

Defendants' proposal is also consistent with disclosures regarding using a "display" to read text, e-mails, or other data. *See id.* at 5:26–34 ("For example, when a new message arrives on the primary device 200, the user can check the content of the message by simply gripping and turning the base station 102 with fingers such that the display surface faces upward for him to read the message displayed on the display surface."), 5:48–56 (access "text email and other data"), 5:59–67 ("the user can read incoming messages via the display surface"), 6:50–56 ("increase or decrease the size of the text displayed on the display surface 106"), 20:59–61 ("while content is being displayed on the display surface 106 in scrolling display mode"), 21:54–58 ("the personal wireless media station 100 causes the next unread text or email to be displayed on the display surface 106"), 22:34–37 ("the display surface 106 displays the caller/receiver data"), 26:57–59 ("allow the user to read texts and emails via the display surface 106") & 26:65–27:3 ("For example, the display surface 106 may initially display a notification that a new text or email has arrived, and upon detecting a user input indicating that the user wishes to view the content of the text or email, display the beginning portion of the text or email.").

Further, although "patent coverage is not necessarily limited to inventions that look like the ones in the figures," *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d

1323, 1333 (Fed. Cir. 2007), it is nonetheless noteworthy that Defendants' proposal is consistent with the illustrations of a "display" in Figures 1–3 of the '066 Patent. *See* '066 Patent at 5:24–67 (describing Figs. 1–3).

Plaintiff cites disclosures that use the word "display" without explicitly referring to a screen, such as:

> The mobile application 202 may be configured to *display* (or cause the personal wireless media station 100 to *display*) a low battery warning based on the battery status of the personal wireless media station 100.

'066 Patent at 14:27–30 (emphasis added). When viewed together with the above-cited disclosures that refer to a "display" in the context of displaying text, e-mails, or other data, however, Plaintiff fails to demonstrate that its cited disclosures support encompassing a mere indicator light. As another example, Plaintiff's reliance on disclosure of a "display surface" "display[ing] a notification" does not warrant a broader construction of "information display" because this disclosure refers to the same "display surface" "display[ing] the beginning portion of [a] text or email." *Id.* at 26:65–27:3.

Plaintiff also cites authority for rejecting an "attempt to import a feature from a preferred embodiment into the claims." *Acumed*, 483 F.3d at 804. On balance, the more applicable principle here is that the disputed term should be construed in accordance with the consistent manner in which the patentee used the term in the specification. *See Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1144–45 (Fed. Cir. 2005) (construing "board" to mean "wood cut from a log," noting that in the intrinsic record the patentee

"consistently used the term 'board' to refer to wood cut from a log," and stating that the patentee "is not entitled to a claim construction divorced from the context of the written description and prosecution history").

Finally, as to the extrinsic evidence submitted by the parties, Defendants submit a definition of "display" as meaning a device comprising or containing a "screen." (Defs. CC Opening, Ex. 10 (APL-PINN_00000017) at 21; *id.*, Ex. 11 (APL-PINN_00000009) at 61.) This extrinsic evidence does not significantly affect the claim construction analysis here. *See Phillips*, 415 F.3d at 1321 ("heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification").

Likewise, extrinsic definitions cited by Plaintiff do not compel a broader construction. (*See* Pl. CC Opening, Ex. M, *Merriam-Webster's Collegiate Dictionary* (11th ed. 2014) (PINN-001281) (including a definition of "display" as meaning "an electronic device (as a cathode-ray tube) that presents information in visual form").) Plaintiff's reliance on disclosure of an unrelated Apple patent (*id.*, Ex. C, U.S. Pat. No. 10,553,002 at 25:38–53 (PINN-001739) ("one or more LEDs . . . [that] display various types of information . . . .") is similarly unavailing because "claims of unrelated patents must be construed separately." *e.Digital*, 772 F.3d at 727. The opinion of Plaintiff's expert in this regard is likewise unpersuasive. (*See* Pl. CC Opening, Ex. A, Apr. 28,

2020 Rhyne Decl. at ¶ 22.)

Plaintiff also cites a Sony reference (cited in a January 18, 2019 Information Disclosure Statement during prosecution of the '066 Patent) that refers to display LEDs providing various information, such as that a headset is "powered on" or that a battery is fully charged. (*See* Pl. CC Opening, Dkt. 103-12, Ex. L at PINNPatents−000890, −001113, −001116 & −001136.) Also, this reference refers to "charging state *indicator* LED 33" and to "charging state *display* LED 33" when referring to the same structure (identified by reference numeral 33), which Plaintiff argues demonstrates that "display" and "indicator" can be used interchangeably. (*Id.* at −001110 & −001115–16 (emphasis added).) Further, Plaintiff cites a "SEECODE" reference, cited in a July 23, 2019 Information Disclosure Statement (PINNPatents−001302–03), that refers to a display unit for providing information such as operational state, connection state, or charge state. (*See id.*, Ex. L, Dkt. 103-13, PINNPatents−001302–03, −001321–24, −001334, −001340.)

These references are intrinsic evidence, having been submitted by the patentee during prosecution, but again, any broader usage of the term "display" in those references does not outweigh the above-cited disclosures set forth in the specification. *Phillips*, 415 F.3d at 1317 ("[B]ecause the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim

construction purposes.").

Defendants' proposal of "digital," however, is unclear and lacks sufficient support in the intrinsic record. Although the specification uses the term "digital," these disclosures merely contrast a "digital" button with a "mechanical" button or a "physical" button. *See* '066 Patent at 13:54–57, 16:20–27 & 17:24–31. This distinction between digital and mechanical is not relevant to the present dispute regarding "information display." Defendants argue that they propose "digital" "to clarify the fact that the 'display' is recited by the claim as part of an electronic device (and not a static image painted or engraved on the device)." (Defs. CC Response at 19.) Plaintiff does not contend that an "information display" can be a static image painted or engraved on the device. The parties' mutual understanding in this regard, as further made apparent during the June 9, 2020 hearing, can be conveyed appropriately by including in the construction that the information display is "electronic." *See also* '066 Patent at 1:6–12 ("The present disclosure relates to mobile consumer *electronic* devices and, more particularly, to devices connected to smart phones and tablets for delivering sound and visual information to users.") (emphasis added).

The Technical Special Master therefore hereby construes **"information display"** to mean **"electronic screen that shows information in visual form."**

G. "circuitry . . . configured to obtain characteristics of the wireless earbud and send the characteristics to the at least one processor" (Terms 10, 15)

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
No construction necessary and not subject to 112(f). Alternatively, if determined to be subject to 112(f), not indefinite: Function: obtain characteristics of the wireless earbud and send the characteristics to the at least one processor Corresponding structure: base station connector(s) (e.g., item 504 in Fig. 7) or switch, and wiring (or other circuitry) to place such connector(s) or switch in electrical communication with the processor. *See also* '066 Patent at: Figs. 5A–12; 1:28–3:19; 5:5–16; 6:16–24; 7:16–38; 8:15–40; 8:50–9:12; 11:25–35; 11:58–64; 12:29–42; 12:60–13:9; 13:19–29; 14:65–20:3; 22:27–23:26; 26:9–55; 28:29–38; 30:6–10; 31:26–32:57; claims 1, 9, 10, 17, 30, 32, 34, 36	Subject to 112(f). Function: obtain characteristics of the wireless earbud and send the characteristics to the at least one processor Structure: none – indefinite.

(JCCC at 22–24 & 27–28; Pl. CC Opening at 15; Defs. CC Opening at 9; Defs. CC Response at 8–9.) The parties submit that this term appears in Claims 9, 10, 30, and 36 of the '066 Patent and Claims 1, 21, and 27 of the '198 Patent. (JCCC at 22 & 27.)

(1) The Parties' Positions

Plaintiff argues that Defendants cannot rebut the presumption against means-plus-function treatment for this non-means term. (*See* Pl. CC Opening at 15–16.) Plaintiff urges that this disputed term, "particularly when considered in its proper context, is readily understood by a person of skill in the art and, importantly, connotes definite structure [to] an ordinary artisan who has read the entirety of the patent." (*Id.* at 17.) As to Claim 9 of the '066 Patent, for example, Plaintiff argues that "claim 1, from which claim 9 depends, recites additional structural detail about the circuity of the base station . . . ." (*Id.*) Plaintiff submits that "[a] person of ordinary skill in the art, after reading the entire '066 Patent, including the claims (e.g., claims, 1, 9, 10, 30, and 36) would understand that while electrically connected, and configured to perform wired data communication between them, the circuitry of the base station can obtain characteristics of the earbud and send those characteristics to the processor." (*Id.* at 18.) Further, Plaintiff submits that the specification "explicitly details the use of the connectors and related circuitry within the base station to provide the processor with the characteristics of the wireless earbud . . . ." (*Id.* at 18–19 (citing '066 Patent at 8:16–40).)

Defendants argue that "the term 'circuitry' is used only in a generic sense," and "the claims do not recite specific structure as to *how* the circuitry is configured to perform the claimed function and, therefore, the term is governed by 35 U.S.C. § 112(f)." (Defs. CC Opening at 9.) Defendants cite the Court's analysis of a "circuit"

term in *Limestone Memory Systems, LLC v. Micron Technology, Inc.*, No. 8:15-CV-278-DOC, 2019 WL 6655273, at *18 (C.D. Cal. Sept. 11, 2019) (Carter, J.). (Defs. CC Opening at 10.) Defendants also cite dictionaries that define "circuitry" in terms of a "design," "plan," "scheme," or "system." (*Id.*, Ex. 1, Apr. 28, 2020 Wells Decl., at p. 30 n.4.) As to corresponding structure, Defendants submit that the specifications "merely state[] that the 'circuitry' performs the claimed function," which Defendants argue is insufficient. (Defs. CC Opening at 11.) Defendants argue that the disclosed structures cited by Plaintiff do not perform the claimed function. (*Id.* at 11–12.)

Plaintiff responds that "[c]ontrary to the complicated machine the Defendants would have the Court envisage for this term, this term merely describes a simple electrical circuit that, in one embodiment, measures ('obtains') a value ('characteristic') from the wireless earbud to provide ('send') to the processor." (Pl. CC Response at 14.) Further, Plaintiff submits that "the patents describe that when the wireless earbud is plugged into the connection hole, the connector on the base station creates an electrical circuit with the connector on the wireless earbud such that the base station can measure (obtain) characteristics of the wireless earbud (such as impedance) and provide (send) that data to the processor." (*Id.*) Plaintiff urges that "a person of ordinary skill in the art, having read the relevant patent disclosure here, would understand that the measured impedance of the earbud connector, an integral part of the earbud itself, is a characteristic of the wireless earbud." (*Id.* at 15.)

Defendants respond that "the 'circuitry' required by this element of the recited claims is not generic circuitry, but rather circuitry designed to accomplish a specific function," and "[n]owhere do the claims provide any structure for the specific 'circuitry' that performs this recited function." (Defs. CC Response at 9.) Defendants argue that "[n]o support exists in the '198 specification for Pinn's position," and "Pinn's identified structures from the '066 patent are not circuitry and do not perform the recited functions . . . ." (*Id.* at 9–10.) Defendants urge that the "connectors" identified by Plaintiff "are merely connectors for electrically connecting, and do not perform the recited function of *obtaining* and *sending* characteristics—something much more than merely connecting." (*Id.* at 10.) Defendants likewise argue that bare references to "circuitry" in the specification are insufficient. (*Id.* at 10–11.)

At the June 9, 2020 hearing, Defendants argued that although "circuitry" can, in some cases, connote structure, "circuitry" does not connote sufficient structure in this case because of the lack of any details or explanation in the claims or in the specification. Defendants conclude that this amounts to purely functional claiming, thereby rebutting the presumption against means-plus-function treatment. Plaintiff responded that the claims and the specification provide context for understanding that the term "circuitry" connotes structure in the context of wired communications. Defendants replied that there is such a wide variety of possible circuitry that the term "circuitry" here fails to connote any particular class of structures.

(2) Analysis

Title 35 U.S.C. § 112(f) provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." "In exchange for using this form of claiming, the patent specification must disclose with sufficient particularity the corresponding structure for performing the claimed function and clearly link that structure to the function." *Triton Tech of Tex., LLC v. Nintendo of Am., Inc.*, 753 F.3d 1375, 1378 (Fed. Cir. 2014).

Title 35 U.S.C. § 112(f) does not apply if "the words of the claim are understood by persons of ordinary skill in the art to have sufficiently definite meaning as the name for structure." *Williamson v. Citrix Online LLC*, 792 F.3d at 1349 (Fed. Cir. 2015). "[T]he failure to use the word 'means' . . . creates a rebuttable presumption . . . that § 112[(f)] does not apply." *Id.* at 1348 (citations and internal quotation marks omitted). "When a claim term lacks the word 'means,' the presumption can be overcome and § 112[(f)] will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Id.* at 1349 (citations and internal quotation marks omitted).

The Federal Circuit in *Williamson v. Citrix Online LLC*, sitting en banc, abrogated

any "strong" presumption against applying 35 U.S.C. § 112(f) to terms that do not use the word "means" and abrogated prior statements that the presumption "is not readily overcome" and cannot be overcome "without a showing that the limitation essentially is devoid of anything that can be construed as structure." 792 F.3d at 1348–49 (citations omitted). "Henceforth, we will apply the presumption as we have done prior to *Lighting World . . . .*" *Id.* (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004)). In a portion of the decision not considered en banc, *Williamson* affirmed the district court's finding that the term "distributed learning control module" was a means-plus-function term that was indefinite because of lack of corresponding structure, and in doing so *Williamson* stated that "'module' is a well-known nonce word." 792 F.3d at 1350.

"In undertaking this analysis we ask if the claim language, read in light of the specification, recites sufficiently definite structure to avoid §112[(f)]." *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (quoting *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014)); *see MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1341–43 (Fed. Cir. 2019). Here, Claim 10 of the '066 Patent, for example, recites (emphasis added):

> 10. A mobile system comprising:
>
> *a mobile base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry*; and
>
> a wireless earbud configured for plugging into the connection hole of the mobile base station to form an integrated body with the mobile base station,

> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the wireless earbud is configured to *electrically connect with the circuitry* of the mobile base station and further configured to *perform wired data communication* with the mobile base station,
>
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, *the circuitry of the mobile base station is configured to obtain characteristics of the wireless earbud and send the characteristics to the at least one processor*,
>
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the mobile base station is configured to charge a battery of the wireless earbud,
>
> wherein the wireless earbud has wireless communication capability for wireless pairing with a smartphone to perform data communication with the smartphone,
>
> wherein the mobile system is configured to generate sound when a mobile application installed on the smartphone is searching for the mobile system while the wireless earbud is paired with the smartphone,
>
> wherein, in response to pressing of the user input button of the mobile base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing.

Plaintiff cites *Linear Technology*, in which the Federal Circuit stated:

> [W]hen the structure-connoting term "circuit" is coupled with a description of the circuit's operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art, and § 112[(f)] presumptively will not apply. *See Apex* [*Inc. v. Raritan Computer, Inc.*], 325 F.3d [1364,] 1373 [(Fed. Cir. 2003)] ("[T]he term 'circuit' with an appropriate identifier such as 'interface,' 'programming' and 'logic,' certainly identifies some structural meaning to one of ordinary skill in the art.").

Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1320 (Fed. Cir. 2004).

On one hand, unlike in the *Apex* case cited in *Linear Technology*, the word "circuitry" in the present case is not coupled with any preceding "identifier" that might "identif[y] some structural meaning to one of ordinary skill in the art." *Apex*, 325 F.3d at

1373; *see id.* at 1373–75 (finding "interface circuit" terms not governed by 35 U.S.C. § 112, ¶ 6 (now known as 35 U.S.C. § 112(f)).

On the other hand, the claim language itself refers to circuitry interacting with a "processor." At the June 9, 2020 hearing, Defendants emphasized that the recited "processor" is not part of the "circuitry," but Defendants did not dispute Plaintiff's position that the term "processor" refers to a known class of structures. Thus, surrounding claim language "describe[s] how the ['circuitry'] interacts with other components . . . in a way that . . . inform[s] the structural character of the limitation-in-question." *Williamson*, 792 F.3d at 1351.

Further, the specification of the '066 Patent discusses "circuitry" in the context of wired communication:

> In some aspects, the wireless earbud is not capable of wirelessly sending data to the personal wireless media station, and the wireless earbud is capable of performing two-way *wired* data communication with the personal wireless media station when the earbud connector is connected to the base station connector.

'066 Patent at 2:58–63 (emphasis added). Plaintiff also cites disclosures in the '066 Patent regarding electrical connectors:

> Contact Connector
>
> In embodiments, the base station 102 includes contact [*sic*] one or more connectors 115 on an inner side of the docking bay 112 for electrically connecting to the earbud 104 when it is docked to the base station 102. When the earbud 104 is docked and secured, the one or more connectors contact one or more counterpart connectors of the earbud 104. When the earbud 104 is pulled away from the base station 102 along the X axis with a

threshold amount of force along the X axis, the earbud 104 becomes undocked (the connectors 115 are no longer electrically connected to the corresponding connectors on the earbud 104, and the earbud 104 physically exits the docking bay 112. In embodiments, the one or more connectors 115 include pogo pins although not limited thereto.

Pogo Connectors on Base Station

In some embodiments, the base station and earbud connectors may be pogo connectors. The base station pogo connectors may be configured to be connected with the counterpart pogo connectors provided on the wireless earbud 104 when the wireless earbud 104 is moved into the docking space along the x-axis to be connected with the base station 102. When the wireless earbud 104 is connected with the base station 102, the counterpart pogo connectors on the wireless earbud 104 are in contact with the pogo connectors on the base station 102.

* * *

Wireless Earbud

With reference to FIGS. 6A and 6B, the wireless earbud 104 includes a head portion 104A, a waist portion 104B, and an ear portion 104C. The waist portion 104B includes one or more earbud connectors for connecting with the base station connectors 115 of the base station 102. The waist portion 104B may include one or more recesses for engaging with the locking devices 114 of the base station 102.

* * *

Connectors

The connectors 504 and 516 may be pogo pins/connectors of opposite gender. *Once electrically connected, the connectors 504 and 516 allow the base station 102 and the wireless earbud 104 to transmit and receive data to and from each other.* The data transmission may be two way (e.g., the wireless earbud 104 transmits data to the base station 102 via the connectors, and the base station 102 transmits data to the wireless earbud 104) or one way (e.g., the wireless earbud 104 transmits data to the base station 102 via the connectors but the base station 102 does not or cannot

> transmit data to the wireless earbud 104, or the base station 102 transmits data to the wireless earbud 104 via the connectors but the wireless earbud 104 does not or cannot transmit data to the base station 102). Although pogo pins/connectors are used as examples, other connectors such as the 3.5 mm jack or other types of connectors [*sic*].

'066 Patent at 8:15–29, 8:49–57 & 12:60–13:9 (emphasis added); *see id.* at Figs. 5A & 5B (illustrating connectors 115).

Finally, Plaintiff cites disclosure regarding "circuitry" involved in detecting whether a wireless earbud has been docked to a base station:

> Detecting Docking and Undocking of Earbud
>
> The base station connector may include a switch that is used for detecting whether the wireless earbud 104 has been docked to the base station 102. For example, such a switch may be switched on when an electrical connection is established between the base station and earbud connectors. Alternatively or additionally, *the base station connector may include circuitry that measures the impedance and/or other characteristics of the connector* (e.g., the earbud connector) that plugs into the base station connector. The base station connector may *provide any measured data to the processor* included in the personal wireless media station 100. Based on the state of the switch and/or the measured data, the processor 506 may provide the sound playback to either the base station speaker or the earbud speaker. For example, if the processor 506 determines that the switch is in a first state (or the measured data exceeds a threshold level), the processor 506 may cause the sound playback to be provided via the base station speaker, and if the processor 506 determines that the switch is in a second state different from the first state (or the measured data does not exceed the threshold level), the processor 506 may cause the sound playback to be provided via the earbud speaker.

'066 Patent at 26:9–31 (emphasis added).

Likewise, as to the '198 Patent, the specification refers to "circuitry" that is part of the "personal media system" and the "base station":

> One aspect of the invention provides a personal media system comprising: a base station or main body comprising a connection hole, a user input button, at least one processor, at least one memory, and *circuitry*; and a wireless earbud capable of wireless pairing with a smartphone and configured for plugging into the connection hole of the base station to form an integrated body with the base station.
>
> In the system, in response to pressing of the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing with the smartphone. When the wireless pairing with the smartphone is made, the wireless earbud is configured to receive audio data from the smartphone and play audio using the audio data from the smartphone. In response to plugging the wireless earbud into the connection hole, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud. When the wireless earbud is plugged into the connection hole of the base station, *the wireless earbud is configured to electrically connect with the circuitry of the base station and further configured to performing* [*sic*] *wired data communication with the base station*. The wireless earbud is not capable of wirelessly sending data to the base station.
>
> * * *
>
> Detecting Connection and Disconnection
>
> The main body connector 116 may include a switch that is used for *plug detection* (e.g., such a switch may be switched on upon insertion of a connector). Alternatively or additionally, the main body connector 116 may include *circuitry* that *measures the impedance and/or other characteristics of the connector* (e.g., the earbud connector 118) that plugs into the main body connector 116. The main body connector 116 may *provide any measured information to the processor* included in the personal wireless media station 100.

'198 Patent at 1:31–55 & 6:10–20 (emphasis added).

By discussing "circuitry" with reference to measuring electrical characteristics

(such as impedance) and with reference to electrical connectors and a "plug," these disclosures reinforce that "circuitry" connotes structure in the patents-in-suit. On balance, in light of the above-discussed context provided by the claims and by disclosures in the specifications, the disputed term recites sufficiently definite structure such that Defendants fail to overcome the presumption against applying 35 U.S.C. § 112(f) to this non-means term. *See Williamson*, 792 F.3d at 1349.

The opinions of Plaintiff's expert are further persuasive. (Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶¶ 23–29.) Also of note, Plaintiff cites *SkyHawke*, in which the Court found "circuitry configured to" was not subject to 35 U.S.C. § 112(f). *SkyHawke Techs., LLC v. DECA Int'l Corp.*, No. CV 18-1234-GW(PLAx), Dkt. 326, slip op. at 32–34 (C.D. Cal. Dec. 23, 2019) (Wu, J.) ("the terms 'circuit' and 'circuitry' themselves are commonly and overwhelmingly understood by courts to connote a class of structures, even if it is a very broad class") (citations and internal quotation marks omitted).

In *Limestone*, the Court found that an "activation control circuit" term was a means-plus-function term governed by 35 U.S.C. § 112(f). *See Limestone*, 2019 WL 6655273, at *18. *Limestone* itself noted, however, that "courts have analyzed 'circuit' claim terms on a *case-by-case basis* to determine whether the term fails to recite sufficiently definite structure that *performs the claimed function*." *Id.* (emphasis added). The claim at issue in *Limestone* was Claim 13 of United States Patent No. 6,697,296,

which recites:

> 13. A semiconductor device comprising:
>
> signal input circuitry including an input buffer for buffering a signal provided externally and generating an internal signal when the signal input circuitry is active;
>
> register circuitry for storing a signal specifying whether control on said signal input circuitry by an operation activation signal is valid, said operation activating signal indicating whether an external signal is a valid signal; and
>
> an *activation control circuit* for selectively activating said signal input circuitry according to said operation activation signal and the signal stored in said register circuitry, said activation control circuit selectively activating said signal input circuitry according to said operation activation signal when the stored signal in said register circuitry indicates that control of activation and deactivation on said signal input circuitry by said operation activation signal is valid, and holding said signal input circuitry in an active state all the times when said stored signal in said register circuitry indicates that the control on said signal input circuitry by said operation activation signal is invalid.

Limestone found that the term "activation control circuit" failed to connote sufficient structure for "selectively activating said signal input circuitry . . ." and "holding said signal input circuitry in an active state all the times . . . ." *Id.*, at *18–*20. In the present case, the limitation of circuitry "configured to . . . obtain characteristics of the wireless earbud and send the characteristics to the at least one processor" sets forth functional language less complex than the "selectively activating said signal input circuitry . . ." and "holding said signal input circuitry in an active state all the times . . ." at issue in *Limestone*. Although *Limestone* noted that "the *Williamson* test does not require an absolute lack of structure to invoke Section 112[(f)]" (*id.*), the above-cited intrinsic evidence demonstrates that, here, the term "circuitry" connotes sufficient

structure for performing the claimed function. Moreover, as noted above, the claim language itself refers to circuitry interacting with a "processor," which thus "describe[s] how the ['circuitry'] interacts with other components . . . in a way that . . . inform[s] the structural character of the limitation-in-question." *Williamson*, 792 F.3d at 1351.[16]

Defendants thus fail to meet their burden to show by a preponderance of the evidence that the presumption against applying 35 U.S.C. § 112(f) has been rebutted. *See Apex*, 325 F.3d at 1372. Defendants present no alternative proposed construction, so no further construction is necessary.

The Technical Special Master hereby construes **"circuitry . . . configured to obtain characteristics of the wireless earbud and send the characteristics to the at least one processor"** to have its **plain meaning**.

[16] At the June 9, 2020 hearing, Plaintiff cited United States Patent No. 9,769,558, which is assigned to Defendant Apple and which includes claim language referring to "circuitry" in relation to a "processor." Although this is extrinsic evidence, this evidence further undercuts Defendants' argument that a person of ordinary skill in the art would not recognize "circuitry" as connoting structure, particularly when recited in relation to a "processor" (and in light of the absence of any challenge by Defendants here as to "processor" referring to structure).

H. "communication module configured to interface data communication with at least one of the smartphone and the wireless earbud" (Terms 11, 16)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
No construction necessary and not subject to 112(f). Alternatively, if determined to be subject to 112(f), not indefinite: Function: interface data communication with at least one of the smartphone and the wireless earbud Corresponding structure: software and/or hardware comprising a wireless communication component (e.g., item 502 in Fig. 7) including, but not limited to, a communication component based on Bluetooth (or other wireless communication standards) technology. *See also* '066 Patent at: Figs. 7–12; 1:24–3:5; 12:18–59; 24:10–26:8; claims 5, 13, 18, 22, 24, 26, 27, 28 and 33	Subject to 112(f). Function: interface data communication with at least one of the smartphone and the wireless earbud Structure ('066 Patent): communication module 502, which is a Bluetooth module Structure ('198 Patent): communication modules 302 or 304, which are Bluetooth modules

(JCCC at 24–25; *see id.* at 28; Pl. CC Opening at 21–22; Defs. CC Opening at 12–13; Defs. CC Response at 12.) The parties submit that this term appears in Claims 26 and 28 of the '066 Patent and Claims 9, 15, 17, and 19 of the '198 Patent. (JCCC at 24 & 28.)

(1) The Parties' Positions

Plaintiff argues that "when considered in the full context of the claim language, this phrase is readily understood by persons of ordinary skill in the art as well as by a lay jury." (Pl. CC Opening at 22.) Plaintiff argues that Defendants cannot rebut the presumption against means-plus-function treatment for this non-means term. (*See id.* at 22–23.) Alternatively, Plaintiff argues that the corresponding structure is not limited to Bluetooth modules because the specification discloses that other wireless communication protocols may be used. (*Id.* at 23–24 (citing '066 Patent at 12:52–59).)

Defendants argue that "[t]he term 'module' is a well-known nonce word that can operate as a substitute for 'means,'" and "[b]ecause 'module' provides no structure and the only disclosed structure capable of performing the claimed function is a Bluetooth module, which is a commercial product well-known in the art, Defendant's proposal should be adopted." (Defs. CC Opening at 13; *see id.* at 13–15.) Defendants also argue that Plaintiff's alternative proposal "is hopelessly vague, overbroad, and unsupported by the specification" and "simply rewrites one 'means' format into another." (*Id.* at 15.) Further, Defendants argue, "[s]oftware alone cannot perform the claimed function, and absent from the '066 and '198 patents is any disclosure that communications modules 502 ('066 patent) or 302 or 304 ('198 patent) may be exclusively software." (*Id.*)

Plaintiff responds that "a person of ordinary skill in the art would read a section entitled 'Communications Module' ('066 at 12:51–59; *see also* '198 at 10:10–49) and

see specific disclosure of a Bluetooth module as well as disclosure of using 'any other wireless protocols' for such a communications module to interface data communications with at least one of the smartphone and the wireless earbud." (Pl. CC Response at 18.)

Defendants respond that "[s]tructure disclosed in the specification cannot replace the lack of structure in a claim—except through the mechanism of § 112(f)." (Defs. CC Response at 12.) Defendants also argue that Plaintiff cannot rely on the opinions of its expert to "supplant the absence of disclosure in the specification of such wireless alternatives." (*Id.* at 13.)

At the June 9, 2020 hearing, Plaintiff argued that disclosures regarding "Bluetooth modules" demonstrate that the word "module" refers to a known class of hardware structures and therefore has structural meaning in the relevant art. Defendants responded that whereas "Bluetooth module" is an off-the-shelf component known to persons of ordinary skill in the art, the term "communication module" has no such meaning.

(2) Analysis

Legal principles regarding 35 U.S.C. § 112(f) are set forth above as to the "circuitry . . ." disputed term. Plaintiff also cites authority explaining that "*Williamson* does not . . . stand for the broad proposition that the term 'module' automatically places it among terms such as 'means' and 'step for,' thus triggering a presumption that § 112(f) applies." *Blast Motion, Inc. v. Zepp Labs, Inc.*, No. 15-CV-700 JLS (NLS), 2017 WL 476428, at *14 (S.D. Cal. Feb. 6, 2017) (Sammartino, J.); *see id.* at *17

(finding "communications module" term not governed by 35 U.S.C. § 112(f)).

Plaintiff argues that Defendants cannot overcome the presumption against applying 35 U.S.C. §112(f) to this non-means term "[b]ecause the specification clearly discloses sufficient structure for performing the functional language of the disputed claim term." (Pl. CC Opening at 22.) This argument, however, conflates the presumption (the presumption that 35 U.S.C. §112(f) does not apply) with one of the inquiries that arises if the presumption is overcome (whether the specification discloses sufficient corresponding structure for performing the claimed function). The proper inquiry regarding the presumption against applying 35 U.S.C. § 112(f) is whether "the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1349 (citations and internal quotation marks omitted). Although disclosures in the specification can be considered as part of this inquiry regarding whether 35 U.S.C. § 112(f) applies, the corresponding structure inquiry (which arises *if* 35 U.S.C. § 112(f) applies) is distinct.[17]

[17] *See MTD*, 933 F.3d at 1344 ("While related, these two inquiries are distinct."); *see also Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1296–97 (Fed. Cir. 2014), *abrogated on other grounds by Williamson*, 792 F.3d 1339 (citations omitted):

> [T]he first step in the means-plus-function analysis requires us to determine whether the entire claim limitation at issue connotes "sufficiently definite structure" to a person of ordinary skill in the art. In so doing, we naturally look to the specification, prosecution history, and relevant external evidence to construe the limitation. While this inquiry may be similar to looking for

Claim 26 of the '066 Patent, for example, recites (emphasis added)

> 26. The system of claim 10, wherein the mobile base station further comprises a *communication module configured to interface data communication with at least one of the smartphone and the wireless earbud*, wherein in response to pressing the user input button, the at least one processor is configured to execute computer program instructions stored in the at least one memory to process the wireless pairing with the smartphone.

Williamson affirmed the district court's finding that the term "distributed learning control *module*" was a means-plus-function term that was indefinite because of lack of corresponding structure, and in doing so *Williamson* stated that "'module' is a well-known nonce word." 792 F.3d at 1350 (emphasis added). Although this portion of the decision was not en banc, this analysis in *Williamson* weighs against Plaintiff's proposal that the term "communication module" connotes sufficient structure to avoid application of 35 U.S.C. §112(f).

Arguing that this "module" term connotes structure, Plaintiff cites disclosure regarding "Bluetooth modules":

> [T]he base station 102 may include a *Bluetooth module* (or other communication module) to connect with a mobile device (e.g., primary device 200) and/or a Bluetooth module (or other communication module) to connect with the wireless earbud 104.

> corresponding structure in the specification, our precedent requires it when deciding whether a claim limitation lacking means connotes sufficiently definite structure to a person of ordinary skill in the art. Because these inquiries are distinct, it is possible to find that a claim limitation does not connote sufficiently definite structure despite the presence of some corresponding structure in the specification.

> * * *
>
> Communications Module
>
> *The communication modules 502 and 514 may be Bluetooth modules configured to establish Bluetooth connections* with each other and/or with the primary device 200. Although Bluetooth is used as an example, any other wireless protocols may be used to establish wireless connections between the base station 102 and the wireless earbud 104 and/or between the personal wireless media station 100 and the primary device 200.

'066 Patent at 12:18–24 & 12:51–59 (emphasis added).

On balance, these disclosures do not demonstrate that "module" connotes structure in the relevant art. *See MTD*, 933 F.3d at 1343 ("a preferred embodiment disclosed in the specification cannot impart structure to a term that otherwise has none"). Disclosures in the '198 Patent are similarly unavailing. *See* '198 Patent at 10:11–49.

In some cases, "the presence of modifiers can change the meaning of 'module.'" *Williamson*, 792 F.3d at 1351. Here, much like the phrase "distributed learning control" in *Williamson*, the word "communication" "does not provide any structural significance to the term 'module' in this case." *Id.* Whereas, in the above-cited disclosures, "Bluetooth" modifies "module" so as to refer to a known class of structures, the word "communication" merely summarizes the recited function and imparts no structural meaning to the nonce word "module." The contrary opinions of Plaintiff's expert do not demonstrate otherwise. (*See* Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶¶ 32–35 & 44.)

Thus, 35 U.S.C. § 112(f) applies. The parties agree that the claimed function is "interface data communication with at least one of the smartphone and the wireless earbud." The remaining inquiry is to determine the proper corresponding structure. *See, e.g.*, *Williamson*, 792 F.3d at 1347.

Plaintiff argues that the corresponding structure should not be limited to Bluetooth because the specification discloses that "Bluetooth is used as an example" and "any other wireless protocols may be used to establish wireless connections between the base station 102 and the wireless earbud 104 and/or between the personal wireless media station 100 and the primary device 200." '066 Patent at 16:51–59.

Yet, a "bare statement that known techniques or methods could be used does not disclose structure." *Biomedino LLC v. Waters Techs. Corp.*, 490 F.3d 946, 953 (Fed. Cir. 2007). Under 35 U.S.C. § 112(f), "[s]tructure disclosed in the specification qualifies as 'corresponding structure' if the intrinsic evidence *clearly links* or associates *that structure* to the function recited in the claim." *Williamson*, 792 F.3d at 1352 (emphasis added).

The structure disclosed in the '066 Patent that is clearly linked to the claimed function of "interface data communication with at least one of the smartphone and the wireless earbud" is "communication module 502," and the disclosed example of communication module 502 is a Bluetooth module. *See* '066 Patent at 16:51–59. Plaintiff argues that this corresponding structure should encompass any communication

technology, based on disclosure that "any other wireless protocols may be used" (*id.*), but the corresponding structure must appear in the specification, not merely in the knowledge of one skilled in the art:

> It is important to determine whether one of skill in the art would understand the specification itself to disclose the structure, not simply whether that person would be capable of implementing that structure. Indeed, the requirement of looking to the disclosure to find the corresponding structure comes from section 112[(f)] itself. It is not proper to look to the knowledge of one skilled in the art apart from and unconnected to the disclosure of the patent.

Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1212 (Fed. Cir. 2003) (citation omitted); *accord Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009) ("The question before us is whether the specification contains a sufficiently precise description of the 'corresponding structure' to satisfy section 112[(f)], not whether a person of skill in the art could devise some means to carry out the recited function.").

The contrary opinions of Plaintiff's expert (*see* Pl. CC Opening, Ex. A, Apr. 28, 2020 Rhyne Decl. at ¶¶ 36–41) do not compel otherwise. *See Williamson*, 792 F.3d at 1354 ("The prohibition against using expert testimony to create structure where none otherwise exists is a direct consequence of the requirement that the specification adequately disclose corresponding structure.").

The specification of the '198 Patent similarly links the claimed function to communications module 302 or communications module 304, the disclosed examples of

which "use Bluetooth technology":

> As shown in FIG. 3, the personal wireless media station 300 includes communications modules 302 and 304, a processor 306, a memory 308, input(s) 310, and output(s) 312.
>
> * * *
>
> Two-Way Wireless Module
>
> In some embodiments, the communications module 302 is a two-way wireless module. In such embodiments, *the communications module 302 receives information from the user device 206 as well as transmits information to the user device 206. The communications module 302 may use Bluetooth technology*. However, the communications module 302 is not limited as such and may be implemented using any wireless communications standards currently available or developed in the future. For example, the information received from the user device 206 may include call information, caller information, sound information, text, voice, or video message information, and any other information that the user can directly (e.g., without the help of the personal wireless media station 100) access from the user device 206. The information transmitted to the user device 206 may include user input information, recorded sound information, captured image information, and any other information that the user can directly (e.g., without the help of the personal wireless media station 100) provide to the user device 206.
>
> One-Way Wireless Module
>
> In some embodiments, the communications module 304 is a one-way wireless module. In such embodiment, *the communications module 304 transmits information to the wireless earbud 104 but does not receive any information from the wireless earbud 104. The communications module 304 may use Bluetooth technology*. However, the communications module 304 is not limited as such and may be implemented using any wireless communications standards currently available or developed in the future. For example, the information transmitted to the wireless earbud 104 may include sound information or any other information that the user can directly (e.g., without the help of the wireless earbud 104) access from the main body 102 of the personal wireless media station 100. *In some*

> *embodiments, the communications module 304 is a two-way wireless module. In other embodiments, the personal wireless media station 300 does not have the communications module 304, and instead, the communications module 302 is used to communicate with both the user device 206 and the wireless earbud 204.*

'198 Patent at 9:57–60 & 10:9–49 (emphasis added).

At the June 9, 2020 hearing, Plaintiff argued claim differentiation as to Claims 5 and 13 of the '066 Patent and Claim 4 of the '198 Patent. In particular, Plaintiff argued that the recitals of "*wireless* communication module" demonstrate that the term "communication module" is broader than wireless. Upon review, Plaintiff fails to demonstrate that the doctrine of claim differentiation applies to these claims. *See Phillips*, 415 F.3d at 1315 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim").

Another general principle that Plaintiff may have been alluding to is that the presence of a modifier may imply that the modified word has a broader meaning. *Phillips* noted that "the claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel." *Id.* at 1314. This general principle, to whatever extent it applies, has not been shown here to override the *Williamson* "nonce" analysis, 792 F.3d at 1350, or the 35 U.S.C. § 112(f) corresponding structure analysis set forth above.

Finally, Plaintiff proposes that the corresponding structure can be "software and/or

hardware," but the disclosures cited by Plaintiff, such as those reproduced above, contain no disclosure of a structure that is only software.

The Technical Special Master therefore hereby construes this disputed term as set forth in the following chart:

Term	Construction
"communication module configured to interface data communication with at least one of the smartphone and the wireless earbud"	**Subject to 35 U.S.C. ¶ 112(f).** Function: **"interface data communication with at least one of the smartphone and the wireless earbud"** Corresponding Structure (**'066 Patent**): **"communications module 502, which is a Bluetooth module; and equivalents thereof"** Corresponding Structure (**'198 Patent**): **"communications modules 302 or 304, which are Bluetooth modules; and equivalents thereof"**

I. "wherein the wireless earbud is not capable of wirelessly sending data to the mobile base station" (Term 17) / "wherein the wireless earbud is not capable of wirelessly sending data to the main body" (Term 18)

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
Plain and ordinary meaning, no construction necessary and not indefinite.	Indefinite

(JCCC at 31 & 32; Pl. CC Opening at 25; Defs. CC Opening at 21; Defs. CC Response at 20.) The parties submit that Term 17 appears in Claims 1 and 25 of the '198 Patent and Term 18 appears in Claim 21 of the '198 Patent. (JCCC at 31 & 32.)

(1) The Parties' Positions

Plaintiff argues: "The *not capable* language is not indefinitely relative; it means that the earbuds cannot send data to the base station. This negative functionality is described in the specification." (Pl. CC Opening at 25 (citing '198 Patent at 1:54–55 & 4:1–11).) Plaintiff further argues that "[o]ne of ordinary skill in the art would recognize the structural limitations of the claimed system define a base station/earbud communication regime where wireless communication is one-way whereas wired communication (when the earbud is plugged into the base station) is two-way." (*Id.* at 25–26.)

Defendants argue that "[b]ecause the claims require the earbud to wirelessly transmit while inexplicably negating its ability to send data to the base station, the 'not capable' limitation introduces unresolvable uncertainty as to how the wireless earbud operates." (Defs. CC Opening at 22.) Defendants also submit that "[t]he specification lacks disclosure of an earbud that is capable of sending data to a smartphone but not capable of sending data to the 'mobile base station'/'base station'/'main body.'" (*Id.*) Further, Defendants argue that "[d]espite notice of the indefiniteness of the '198 patent's claims and acquiescing in the indefiniteness rejection in the '066 prosecution, Pinn never

corrected the same limitation during the '198 prosecution and stuck with the indefinite 'not capable' clause." (*Id.* at 24.)

Plaintiff responds that "[r]eciting a negative limitation is appropriate, and the intrinsic record provides clear support for it contrary to Defendants' argument." (Pl. CC Response at 19.) Plaintiff submits, for example: "Unasserted claim 4 adds a wireless communication module to the base station so it can communicate with the smartphone or wireless earbud. Thus, the mobile system of claim 1, from which claim 4 depends, lacks any wireless communication capability between the base station and wireless earbud." (*Id.* at 20 (citations omitted).) Also, Plaintiff argues that "Defendants err by considering only the functionality of the wireless earbud." (*Id.* at 20.) Plaintiff further explains that "[t]he subject matter claimed in the '198 Patent is system-level, directed to a distributed processing and communication architecture, not to specific protocols, algorithms, or wireless radio configurations as Defendants and their expert suggest." (*Id.* at 21.) "Finally," Plaintiff argues, "with regard to Defendants' prosecution-history arguments, Pinn did not acquiesce to the Examiner's rejection, which arose in a different patent application altogether." (*Id.*)

Defendants respond: "The claims recite that the earbud 'is not capable of wirelessly sending data to the mobile base station,' even though the claims earlier require that the earbud be capable of sending data to the smartphone. Given the confusion this negative limitation introduces, one of ordinary skill could not ascertain the

scope of this claim with reasonable certainty and the claim is indefinite." (Defs. CC Response at 20.) Defendants argue that "[t]he specification lacks disclosure of an earbud that is capable of sending data to a smartphone but not capable of sending data to the 'mobile base station'/'base station'/'main body'." (*Id.* at 21.)

At the June 9, 2020 hearing, Defendants emphasized that Bluetooth communication is necessarily two-way. (*See* Dkt. No. 102, Ex. 1, Apr. 28, 2020 Wells Decl. at ¶ 120.) Plaintiff responded that the specification discloses various embodiments, and Plaintiff urged that if Bluetooth communication is necessarily two-way, then that is simply an additional reason why the claims should not be limited to Bluetooth.

(2) Analysis

"[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). "Indefiniteness must be proven by clear and convincing evidence." *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

Defendants cite prosecution history in which, during prosecution of the '066 Patent, the patent examiner rejected claims that included a limitation that "the wireless earbud is not capable of wirelessly sending data to the mobile base station." (*See* Defs.

CC Opening, Ex. 7, Apr. 30, 2018 Preliminary Amendment at 2–3 (PINNPatents-000790–91).) The examiner rejected this claim language as indefinite:

> The term "not capable" [in claims 24 and 25] is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification only provides different examples about wireless module types in the base station and wireless module types in the earbud but not clearly providing [*sic*] any specific algorithms, software, or any wireless configuration to match with the claimed function of "the wireless earbud is not capable of wirelessly sending data to the base station."

(*Id.*, July 26, 2018 Office Action at 4–5 (PINNPatents-000827–28).) Plaintiff amended the claims so as to remove "not capable" and instead recite in some of the claims that "the system is configured such that there is no data transmission wirelessly between the wireless earbud and the base station." (*Id.*, Jan. 18, 2019 Amendment and Response to Office Action at 3–4 (PINNPatents-000855–56).) Plaintiff stated:

> The Office Action asserted that the term "not capable" is a relative term which renders the claim indefinite. Applicant respectfully disagrees and submits that the term "not capable" is not a relative term or is not indefinite. Nonetheless, solely to facilitate early allowance of the application, Applicant has amended Claims 24, 25 and 28 to adopt the Examiner's suggested language and amended Claims 29 and 30 to delete the relevant limitation.

(*Id.* at 14 (PINNPatents-000866).)

Defendants argue that "Pinn made no effort to dispute the examiner's assertion, nor did it contest the rejection at any later point in the '066 prosecution." (Defs. CC Opening at 23 (citing *Glaxo Wellcome, Inc. v. Impax Labs., Inc.*, 356 F.3d 1348, 1357

(Fed. Cir. 2004) ("If the patentee does not rebut an examiner's comment or acquiesces to an examiner's request, the patentee's unambiguous acts or omissions can create an estoppel.")).)

The above-reproduced remarks, however, reflect that although Plaintiff modified the claim language, Plaintiff disagreed with the examiner's assertion of indefiniteness. (Defs. CC Opening, Ex. 7, Jan. 18, 2019 Amendment and Response to Office Action at 14 (PINNPatents-000866).) The *Glaxo* case cited by Defendants is therefore distinguishable. *See* 356 F.3d at 1357. The opinions of Defendants' expert in this regard are likewise unpersuasive. (*See* Defs. CC Opening, Ex. 1, Apr. 28, 2020 Wells Decl. at ¶¶ 127–128.)

The fact that Plaintiff did not similarly amend during prosecution of the '198 Patent is consistent with Plaintiff's disagreement with the rejection during prosecution of the '066 Patent. Plaintiff submits that the patent examiner who examined the application that led to the '198 Patent considered the language here at issue without making any indefiniteness rejection. (*See* Pl. CC Opening, Ex. K, May 10, 2018 Office Action at 5−6 (PINNPatents-002608–09) (considering the disputed language when making an obviousness rejection).) Defendants argue that the examiner's statements do not make sense (*see* Dkt. No. 111 at 22), but Defendant's argument is unpersuasive.

Turning to the claim language itself, Claim 1 of the '198 Patent recites (emphasis added):

1. A mobile system comprising:

a mobile base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry; and

a *wireless earbud configured for plugging into the connection hole of the mobile base station* to form an integrated body with the mobile base station,

wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, *the wireless earbud is configured* to electrically connect with the circuitry of the mobile base station and further configured *to perform wired data communication with the mobile base station*,

wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the circuitry of the mobile base station is configured to obtain characteristics of the wireless earbud and send the characteristics to the at least one processor,

wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,

wherein the wireless earbud has wireless communication capability for wireless pairing with a smartphone to perform data communication with the smartphone,

wherein the mobile system is configured to generate sound when a mobile application installed on the smartphone is searching for the mobile system while the wireless earbud is paired with the smartphone,

wherein, in response to pressing of the user input button of the mobile base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing,

wherein the wireless earbud is not capable of wirelessly sending data to the mobile base station.

The other claims here at issue, Claims 21 and 25 of the '198 Patent, recite (emphasis added):

21. A mobile system comprising:

a smartphone comprising at least one mobile application installed thereon;

a mobile apparatus comprising a main body and a wireless earbud;

the main body comprising a connection hole, a user input button, at

least one processor, at least one memory, and circuitry; and

the *wireless earbud configured for plugging into the connection hole of the main body* to form an integrated body with the main body,

wherein, while the wireless earbud is plugged in the connection hole of the main body, *the wireless earbud is configured* to electrically connect with the circuitry of the main body and further configured *to perform wired data communication with the main body*,

wherein, while the wireless earbud is plugged in the connection hole of the main body, the circuitry of the main body is configured to obtain characteristics of the wireless earbud and send the characteristics to the at least one processor,

wherein, while the wireless earbud is plugged in the connection hole of the main body, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,

wherein *the wireless earbud and the smartphone are configured to establish wirelessly pairing for wireless data communication therebetween*,

wherein the mobile apparatus is configured to generate sound when the at least one mobile application is searching for the mobile apparatus while the wireless earbud and the smartphone are paired,

wherein, in response to pressing of the user input button on the main body, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the wireless pairing,

wherein, when the wireless earbud is plugged into the connection hole of the main body, the system is configured such that the smartphone wirelessly communicates with at least one of the main body and the wireless earbud,

wherein the wireless earbud is not capable of wirelessly sending data to the main body.

* * *

25. A system comprising:

a mobile base station comprising a connection hole, a user input button, at least one processor, at least one memory, and circuitry; and

a wireless earbud capable of wireless pairing with a smartphone and configured for plugging into the connection hole of the mobile base station to form an integrated body with the mobile base station,

wherein, in response to pressing of the user input button of the mobile

> base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate processing for the *wireless pairing with the smartphone*,
>
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, *the wireless earbud is configured* to electrically connect with the circuitry of the mobile base station and further configured *to perform wired data communication with the mobile base station*,
>
> wherein, while the wireless earbud is plugged in the connection hole of the mobile base station, the at least one processor is configured to execute computer program instructions stored in the at least one memory to initiate charging of a battery of the wireless earbud,
>
> wherein while *the wireless earbud is wirelessly paired with the smartphone*, the wireless earbud is configured to perform *data communication* with the smartphone,
>
> wherein the system is configured to generate sound when a mobile application installed on the smartphone is searching for the system while the wireless earbud is paired with the smartphone,
>
> *wherein the wireless earbud is not capable of wirelessly sending data to the mobile base station.*

Thus, whereas the claims recite wireless communication between the earbud and the smartphone, these claims recite *wired* communication between the earbud and the mobile base station (Claims 1 and 25) or the main body (Claim 21). *See* '198 Patent at 10:1–49 (discussing communications modules).

In some cases, internal inconsistency can give rise to indefiniteness. *See Competitive Techs., Inc. v. Fujitsu Ltd.*, 185 F. App'x 958, 965–66 (Fed. Cir. 2006) ("Because the 'address means' limitation of claim 5 requires ISA structures, and the 'sustain means' limitation of that same claim excludes ISA structures, a person of ordinary skill in the art would be unable to determine the scope of the claims. They are internally inconsistent. We therefore conclude that the court did not err in holding that

claims 5–11 are invalid because of indefiniteness.").

Here, Defendants fail to demonstrate any internal inconsistency. That is, Defendants fail to show that an ability to wirelessly communicate with a smartphone is necessarily inconsistent with an inability to wirelessly communicate with the mobile base station (Claims 1 and 25) or the main body (Claim 21). Defendants' expert opines that "Bluetooth devices are agnostic as to what other devices they connect with, as long as the Bluetooth protocols that dictate the pairing and connection between the devices (as described above) are met." (*See* Defs. CC Opening, Ex. 1, Apr. 28, 2020 Wells Decl. at ¶ 118.) This opinion fails to demonstrate that the claim limitations cannot be met. Likewise, the opinion of Defendants' expert that "[t]his limitation requires that the recited 'wireless earbud' be both capable and incapable of wirelessly sending data to another wireless device within its range" is unpersuasive. (*Id.* at ¶ 119.) Additional opinions of Defendants' expert are similarly unpersuasive. (*See id.* at ¶¶ 118–23; *see also* Defs. CC Response, Ex. 19, May 15, 2020 Wells Decl. at ¶¶ 36–42.)

Defendants urge that Plaintiff's interpretation amounts to an impermissible rewriting of the claim language. Defendants submit that the claim does not "simply place[] a prohibition on sending data" but rather "presumes that no circuitry, software, and/or functionality exist in the earbud itself to allow it to provide such wireless communication." (Defs. CC Response at 21.) Defendants' argument is unpersuasive because the claim language at issue relates to capability of a wireless earbud in the

context of a claimed system rather than what "circuitry, software, and/or functionality exist in the earbud itself." (*Id.*)

The parties have also discussed dependent Claim 4 of the '198 Patent, which recites (emphasis added):

> 4. The system of claim 1, wherein the *mobile base station* further comprises a wireless communication module configured to *wirelessly communicate with* at least one of the smartphone and *the wireless earbud*.

Because Claim 4 depends from Claim 1, Claim 4 includes all of the limitations of Claim 1, including the limitation that "the wireless earbud is not capable of wirelessly sending data to the mobile base station." Because Plaintiff does not assert Claim 4 of the '198 Patent (*see* Pl. CC Opening at 1 (listing asserted claims)), the definiteness or indefiniteness of this claim is not presented. To whatever extent Defendants maintain that Plaintiff's above-noted reliance on Claim 4 is unavailing because Claim 4 is internally inconsistent, Defendants do not show that the recital of the mobile base station being "configured to wirelessly communicate with at least one" is necessarily inconsistent with the wireless earbud being "not capable of wirelessly sending data to the mobile base station." Alternatively, to whatever extent Claim 4 of the '198 is internally inconsistent, this could result in indefiniteness as to Claim 4 rather than as to Claim 1. *See Multilayer Stretch Cling Film Holdings, Inc. v. Berry Plastics Corp.*, 831 F.3d 1350, 1360 (Fed. Cir. 2016) ("a dependent claim cannot change the scope of an independent claim whose meaning is clear on its face"); *see N. Am. Vaccine, Inc. v. Am. Cyanamid*

Co., 7 F.3d 1571, 1577 (Fed. Cir. 1993) ("The dependent claim tail cannot wag the independent claim dog."). The opinions of Defendants' expert are unpersuasive in this regard. (*See* Defs. CC Opening, Ex. 1, Apr. 28, 2020 Wells Decl. at ¶¶ 124–26.) Regardless, however, the parties' arguments as to dependent Claim 4 of the '198 Patent do not significantly affect the definiteness analysis as to the claims here at issue, such as Claim 1 of the '198 Patent.

Finally, Defendants state:

> The specification discloses an earbud that is capable of wireless communication, including embodiments in which the earbud wirelessly sends data to the "base station." '198 patent at 10:2–8, 10:45–49. The specification lacks disclosure of an earbud that is capable of sending data to a smartphone but not capable of sending data to the "mobile base station"/"base station"/"main body".

(Defs. CC Response at 21.) These statements by Defendants perhaps are directed to arguments on enablement or written description, but these statements do not support Defendants' indefiniteness argument. Defendants fail to show how such disclosures in the written description give rise to any inconsistency within the claim. Further, as Plaintiff argued at the June 9, 2020 hearing, these statements by Defendants, regarding purported lack of *support* in the specification, tend to reinforce that the *meaning* of the claim language is reasonably clear.

The Technical Special Master therefore hereby rejects Defendants' indefiniteness argument. Defendants present no alternative proposed construction, so no further construction is necessary.

The Technical Special Master accordingly hereby construes **"wherein the wireless earbud is not capable of wirelessly sending data to the mobile base station"** and **"wherein the wireless earbud is not capable of wirelessly sending data to the main body"** to have their **plain meaning**.

V. CONCLUSION

The Technical Special Master hereby construes the disputed terms as set forth above.

Date: June 29, 2020

DAVID KEYZER