

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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**SKULLCANDY, INC.,**

**Petitioner**

**v.**

**EARIN AB,**

**Patent Owner**

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***Inter Partes* Review No. IPR2025-00690**

**U.S. Patent No. 9,402,120**

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**PETITION FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. § 312**

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**Petitioner's Exhibit List**

<b>Exhibit</b>	<b>Description</b>
1001	U.S. Patent No. 9,402,120, applied for on September 5, 2014, to Lindén et al. (the “’120 Patent”)
1002	U.S. Patent Application Publication No. 2011/0286615 published November 24, 2011, to Olodort et al. (“Olodort”)
1003	U.S. Patent Application Publication No. 2009/0073950 published March 19, 2009, to Guccione et al. (“Guccione”)
1004	Japanese Patent Application Publication No. 2004/236163 published August 19, 2004, to Yamashita et al. (“Original Yamashita”)
1005A	Certified Translation of the text of Original Yamashita into English (collectively with Ex. 1005B, “Yamashita”)
1005B	Certified Translation of the drawings of Original Yamashita into English (collectively with Ex. 1005B, “Yamashita”)
1005C	Signed Certification from the Translator of Yamashita
1006	Selected Excerpts of Specification of the Bluetooth® System, Covered Core Package Version 4.1, published December 3, 2013 (“Bluetooth® Spec. 4.1”)
1007	Declaration of Jeremy Cooperstock, Ph.D
1008	Office Action dated November 30, 2015
1009	Notice of Allowance dated May 10, 2016
1010	First Amended Complaint dated May 13, 2024
1011	Scheduling Order dated December 18, 2024

Pursuant to 35 U.S.C. § 312 and 37 C.F.R. § 42.100 *et seq.*, Skullcandy, Inc.

(“Petitioner”) requests *inter partes* review of claims 20 and 21 of U.S. Patent No. 9,402,120, filed on September 5, 2014, to Lindén et al. (“the ’120 Patent” – Ex. 1001), which issued July 26, 2016. The Board is authorized to deduct any required fees from TraskBritt Deposit Account 20-1469.

## **I. INTRODUCTION**

The ’120 Patent claims wireless earbuds and a wireless audio streaming host device for use with such wireless earbuds. Of particular relevance to this Petition are claims 20 and 21 of the ’120 Patent, which claim a “wireless earbud having an idle mode and an operational mode.”

Claim 20 of the ’120 Patent recites both hardware and “circuitry ... configured for automatic power preservation by” performing claimed actions. The hardware required by claim 20 includes: (1) an earbud housing; (2) a loudspeaker element; (3) a rechargeable battery; and (4) at least one main printed circuit board having disposed thereon circuitry for wireless radio communication, audio codec, and earbud operation control.

Claim 20 recites that wireless earbuds enter the idle mode and the operational mode responsive to claimed triggers involving connection to and disconnection from a charger. Specifically, claim 20 requires that the circuitry of the earbuds be configured for (1) detecting connection of said [earbud] battery to a

charger and in response entering the idle mode, wherein existing connections to a second wireless earbud and to a wireless audio streaming host device will be disconnected; and (2) detecting disconnection of said battery from said charger and in response entering the operational mode.

Entry into the operational mode causes the claimed wireless earbud to exhibit two general behaviors: (A) attempting reconnection with a companion earbud and (B) attempting reconnection with the wireless audio streaming host device(s). When it comes to reconnection with a companion earbud, claim 20 recites (1) attempting a true wireless stereo (TWS) reconnection with the second wireless earbud; (2) if the attempt is successful, operating the wireless earbud as a TWS audio receiver, and otherwise operating the wireless earbud as a mono wireless audio receiver; and (3) if operated as a TWS audio receiver, determining whether the wireless earbud is a master device or a slave device with respect to the second wireless earbud.

As for reconnection with the wireless audio streaming host device(s), claim 20 requires, (1) if the wireless earbud is determined to be a master device, attempting to reconnect with the wireless audio streaming host device and other known wireless audio streaming host devices if applicable; and (2) if reconnection with the wireless audio streaming host device fails, initiat[ing] a pairing procedure

with the wireless audio streaming host device and other known wireless audio streaming host devices if applicable.

FIG. 12 of the '120 Patent depicts a flowchart illustrating the process claimed in claim 20, and is reproduced below:

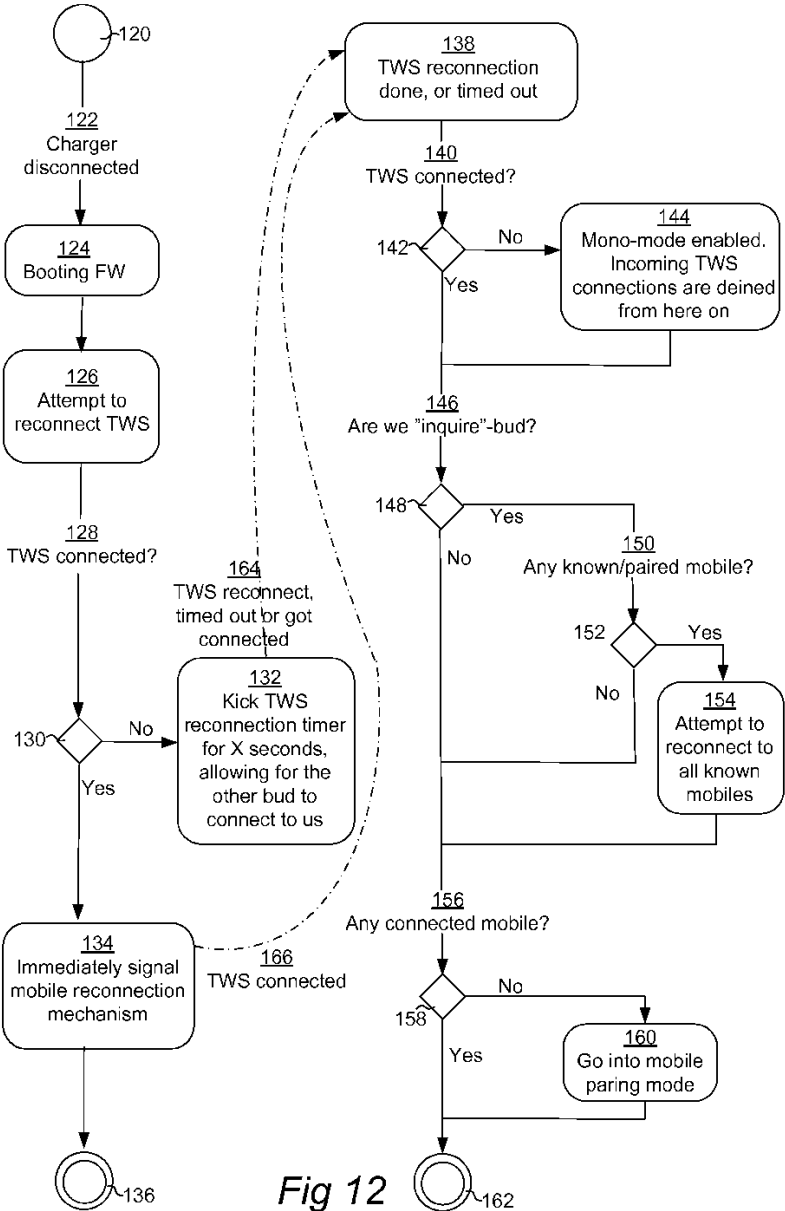


Fig 12

*'120 Patent*, FIG. 12

Claim 21 further specifies that the circuitry for wireless radio communication of the wireless earbud is compliant with one or more listed standards: “Bluetooth, AirPlay, PlayFi, Miracast, WiDi, DLNA or Wi-Fi Direct.”

However, such hardware and circuitry were known long before September 5, 2014, which is the earliest possible priority date of the '120 Patent. For example, U.S. Patent Application Publication No. 2011/0286615, published November 24, 2011, to Olodort et al. (“Olodort”), attached hereto as Exhibit 1002, discloses wireless earbuds having the hardware and at least some of the circuitry recited in claims 20 and 21.<sup>1</sup> Olodort was not cited to the U.S. Patent Office, or uncovered by the Examiner, during prosecution of the '120 Patent.

The circuitry disclosed in Olodort causes the earbuds to enter a low power state, such as a standby mode, when the earbuds have been coupled to a power source to charge battery.<sup>2</sup> Olodort’s circuitry causes each earbud to enter a mono mode after being removed from a charging housing while the other earbud remains in the charging housing and to switch automatically to a stereo mode after the other earbud is also removed from the charging housing.<sup>3</sup>

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<sup>1</sup> *E.g.*, Ex. 1002, FIGS. 2, 7A, 11A, 12.

<sup>2</sup> *Id.* at ¶ [0055], claim 38.

<sup>3</sup> *Id.* at claims 50, 52.

The circuitry disclosed in Olodort also attempts reconnection between earbuds, enables operation as true wireless stereo if a reconnection is made, enables operation as a mono receiver if not, and determines which earbud is the master or slave.<sup>4</sup> If the wireless earbud of Olodort is identified as the master, it will connect with a wireless streaming host device.<sup>5</sup> Olodort states that its wireless earbuds may operate according to a Bluetooth® standard.<sup>6</sup>

The remaining actions that the circuitry of the '120 Patent is configured to perform, relating to reconnection to wireless audio streaming host devices and initiation of pairing procedures if reconnection fails, were also known in the prior art. For example, U.S. Patent App. Pub. No. 2009/0073950 published March 19, 2009, to Guccione et al., attached hereto as Exhibit 1003, states that the wireless audio gateway headset 10 disclosed therein “will first attempt to reconnect to the last phone used (if any)” when “the headset is powered on.”<sup>7</sup> “If the phone is out of range or not available, the headset 10 will automatically enter a discoverable state.”<sup>8</sup> Guccione was not cited to the U.S. Patent Office, or uncovered by the Examiner, during prosecution of the '120 Patent.

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<sup>4</sup> *Id.* at ¶¶ [0014], [0055], claims 50, 52, 56.

<sup>5</sup> *Id.* at ¶¶ [0014], [0065], claim 39.

<sup>6</sup> *Id.* at ¶¶ [0049], [0055], [0069], claim 59.

<sup>7</sup> Ex. 1003, ¶ [0060].

<sup>8</sup> *Id.*

Likewise, Japanese Patent Application Publication No. 2004/236163 published August 19, 2004, to Yamashita et al., the original of which is attached as Exhibit 1004 and a certified English translation as Exhibits 1005A and 1005B, states that the processing unit 64 of the wireless headphones 20 disclosed therein reconnects to the audio player 10.<sup>9</sup> “[I]f ... the reconnection processing unit 64 determines that the reconnection has succeeded or failed ... the reconnection processing unit 64 reconnects to the audio player 10 again. At this time, ... the reconnection process is repeated ... until the reconnection is successful.”<sup>10</sup> Notably, Yamashita teaches that its techniques for attempting reconnection “reduce battery consumption” by avoiding “unnecessary reconnection attempts,” which is the same benefit that claim 20 of the ’120 Patent purports to provide: “automatic power preservation.”<sup>11</sup> Yamashita was not cited to the U.S. Patent Office, or uncovered by the Examiner, during prosecution of the ’120 Patent.

In short, all the hardware and circuitry claimed in the ’120 Patent was known in the prior art well before the ’120 Patent’s priority date. The claimed combination of such hardware and circuitry would have required nothing more than the application of ordinary skill according to known techniques in a manner

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<sup>9</sup> Ex. 1005A, ¶ [0042].

<sup>10</sup> *Id.* at ¶ [0043].

<sup>11</sup> *Compare* Ex. 1005A, ¶ [0043], *with* Ex. 1001, col. 14, lines 58, 59.

that yields predictable results, as disclosed in Olodort and Guccione, and optionally further in view of Yamashita.

The claims of the '120 Patent should be found unpatentable because they are an impermissible attempt to obtain patent protection for subject matter that would have been obvious to a person of ordinary skill in the art in view of the prior art.

## **II. MANDATORY NOTICES**

### **A. Real Party in Interest (37 C.F.R. § 42.8(b)(1))**

Skullcandy Inc. is a privately held corporation, wholly owned by MRSK Hold Co. Skullcandy Inc. and MRSK Hold Co. are the real parties-in-interest.

### **B. Related Matters (37 C.F.R. § 42.8(b)(2))**

Petitioner and Patent Owner are currently engaged in district court litigation in the U.S. District Court for the District of Delaware in which the Patent Owner has asserted the subject patent against Petitioner, which litigation is identified as Civil Action No. 24-cv-275-RGA-SRF (the "Lawsuit"). The Lawsuit would be affected by a decision in this proceeding. After a reasonable investigation, Petitioner is not aware of any other judicial or administrative matter that would affect, or be affected by, a decision in this proceeding.

### **C. Lead and Back-Up Counsel (37 C.F.R. § 42.8(b)(3))**

Lead Counsel: James C. Watson (Reg. No. 64,746)

Back-up Counsel: J. Jeffrey Gunn (Reg. No. 56,957)

**D. Service Information (37 C.F.R. § 42.8(b)(4))**

Email: JCWatson@traskbritt.com; JGunn@TraskBritt.com

Post/Hand Delivery Address: James C. Watson, TraskBritt, 230 South 500  
East, Ste. 300, Salt Lake City, UT 84102

Phone: 801-532-1922 Fax: 801-531-9168

Petitioner consents to electronic service.

**III. GROUNDS FOR STANDING**

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies that the '120 Patent is available for *inter partes* review, and that Petitioner is not barred or estopped from requesting an *inter partes* review challenging the claims of the '120 Patent on the grounds identified in this Petition. The '120 Patent has not been subject to a previous estoppel-based proceeding of the AIA. Petitioner was served with a complaint alleging infringement of the '120 Patent on March 7, 2024, which date is one year or less before the filing of this Petition, as required by 35 C.F.R. § 315(b).

**IV. STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED**

**A. Claims for which Review is Requested (37 C.F.R. § 42.104(b)(1))**

By this Petition, Petitioner requests the review and cancellation of claims 20 and 21 of the '120 Patent, which includes only some of the claims of the '120 Patent. The claims of the '120 Patent, as originally issued, are provided in Exhibit 1001, which is a copy of the '120 Patent.

**B. Statutory Grounds of Challenge (37 C.F.R. § 42.104(b)(2))**

The Challenged Claims should be canceled for the following reasons:

**Ground 1:** Claims 20 and 21 are invalid under 35 U.S.C. § 103 based on Olodort (Ex. 1002) in view of Guccione (Ex. 1003). Olodort is prior art to the '120 Patent under at least 35 U.S.C. § 102(a)(1) because Olodort was published on November 24, 2011, well before the September 5, 2014, effective filing date of the '120 Patent. Guccione is prior art under at least § 102(a)(1) because Guccione was published on March 19, 2009.

**Ground 2:** Claims 20 and 21 are invalid under 35 U.S.C. § 103 based on Olodort (Ex. 1002) and Guccione (Ex. 1003) in view of Yamashita (Exs. 1004, 1005A, 1005B). Yamashita is prior art to the '120 Patent under at least § 102(a)(1) because Yamashita was published on August 19, 2004.

**Ground 3:** Claims 20 and 21 are invalid under § 103 based on Olodort (Ex. 1002) and Guccione (Ex. 1003) in view of the Specification of the Bluetooth® System, Covered Core Package Version 4.1 (“Bluetooth® Spec. 4.1”), selected excerpts of which are attached hereto as Exhibit 1006, optionally further in view of Yamashita (Exs. 1004, 1005A, 1005B). The Bluetooth® Spec. 4.1 is prior art to the '120 Patent under at least § 102(a)(1) because the Bluetooth® Spec. 4.1 was published on December 3, 2013, which is before the September 5, 2014, effective filing date of the '120 Patent.

## V. FIELD OF TECHNOLOGY

The '120 Patent relates to wireless earbuds and methods for switching wireless earbuds between idle and operational modes. *See* Ex. 1001 at Abstract; 9:48–10:48; FIG. 12.

Wireless earbuds are a popular way for users to receive audio outputs from connected devices. Ex. 1001, 1:11–19. The '120 Patent acknowledges that wireless earbuds were known before its filing and that “[i]mportant characteristics of wireless earbuds are physical size, convenience and user-friendliness, duration between battery chargings, operational reliability and, of course, the perceived acoustic quality of the streamed audio.” Ex. 1001, 1:19–23. The subject matter disclosed in the '120 Patent and claimed in claims 20 and 21 purports to improve power preservation by entering idle and operational modes having specified characteristics under specified conditions. Ex. 1001, 1:40–2:2.

However, the hardware for wireless earbuds, circuitry, and operational modes implemented by such circuitry recited in claims 20 and 21 of the '120 Patent were already known in the prior art, or would have been obvious to a person of ordinary skill in the art in view of the prior art, as discussed in greater detail hereinbelow.

## VI. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) relevant to the ’120 Patent as of September 5, 2014—the earliest priority date claimed in connection with the ’120 Patent—would have had at least a Bachelor of Science degree in electrical or computer engineering and one or two years of experience in designing wireless audio products. *See* Ex. 1007 at ¶ 53.

Such a person would have been familiar with the hardware necessary for providing wireless audio products, including headphones, earphones, and earbuds. *Id.* at ¶ 55. Such a person would have further understood that circuitry is required to control the various operations of wireless audio products, including wireless communication, audio processing, and control of device operations. *Id.* Such a person would have known that wireless earbuds were increasingly popular and that important characteristics for wireless earbuds include physical size, convenience and user-friendliness, duration between battery chargings, operational reliability and, of course, the perceived acoustic quality of the streamed audio. *Id.*

A person of ordinary skill in the art would have usually worked in a team environment and, in addition to his or her own skills and experiences and those of other team members, would have had access to (and would have been trained and encouraged to seek out) other technical experts, libraries of tools and systems, descriptions, catalogs, and technical information relating to wireless audio

products. *Id.* at ¶ 56. Such a person would have routinely accessed, understood, and applied such information in a variety of projects and applications, each with its own unique characteristics and challenges, and would have routinely consulted with team members (and others outside the team) with diverse educational backgrounds and technical experiences to address these unique characteristics and challenges. *Id.*

Such a person would have been a person of ordinary creativity as well as skill and would have innovated, and interchangeably used systems, tools, mechanisms, and assemblies, based on the technology developed for different but related applications. *Id.* at ¶ 57.

The modifications and combinations of the teachings of the prior art references discussed below were also within the ability of a person of ordinary skill in the art. *Id.* at ¶ 111. A person of ordinary skill in the art would have been able to predict the results yielded by the modifications and combinations of the teachings of the prior art references. *Id.* at ¶ 112. For example, such modifications and combinations required no more than reprogramming the firmware controlling electrical and electromechanical components and/or adapting them to known applications. *Id.* at ¶ 113. A person of ordinary skill in the art would have understood how such rearranged components would have functioned in their new configurations. *Id.*

## **VII. THE '120 PATENT**

The '120 Patent is titled “Wireless Earbuds,” and states that one “aspect of the present invention is a wireless earbud having an idle mode and an operational mode,” which has the hardware and circuitry recited in claim 20. Ex. 1001 at Title, 1:40–2:2.

### **A. Admitted Prior Art**

As the Background section of the '120 Patent reflects, wireless earbuds were so well-known in the prior art that they were characterized as “increasingly popular” and expected to have further “growing popularity.” Ex. 1001 at 1:11–19. Patent Owner acknowledges it was known that “[i]mportant characteristics of wireless earbuds are physical size, convenience and user-friendliness, duration between battery chargings, operational reliability and, of course, the perceived acoustic quality of the streamed audio.” *Id.* at 1:19–23.

### **B. The '120 Patent's Asserted Improvement and Prosecution History**

Claims 20 and 21 of the '120 Patent claims recite wireless earbuds having an idle mode and an operational mode. Ex. 1001, 14:50–15:19; claims 20, 21. Claims 20 and 21 issued from original claims 18 and 19 of the as-filed application that ultimately issued as the '120 Patent. The application that ultimately issued as the '120 Patent was filed on September 5, 2014, and does not claim priority to any

earlier date. Thus, the earliest claimed priority date for the '120 Patent is September 5, 2014. The application was assigned Serial No. 14/478,698.

In the lone Office Action dated November 30, 2015, a copy of which is attached as Exhibit 1008, the Examiner stated that, "Claims 18–20 are allowed." Ex. 1008, p. 3. A Notice of Allowance issued on May 10, 2016, a copy of which is attached as Exhibit 1009.

The Notice of Allowance states that the following "features, in combination with the other features of Claim[] ... 18 ... are not anticipated by, nor made obvious over, the prior art of record." Ex. 1009, p. 2.

Wherein the earbud housing comprises a front housing portion and an essentially cylindrical or frusto-conical rear housing portion, the rear housing portion comprising a first end proximate to the front housing portion and a second distal end, the rear housing portion together with the front housing portion accommodating the main printed circuit board inside the rear housing portion nearest its second distal end, then the rechargeable battery and the loudspeaker element in successive order towards the front housing portion along the longitudinal main axis of the earbud housing

*Id.* Notably, the foregoing language did not appear in claim 18 of the then-pending application and does not appear in claim 20 of the '120 Patent. Patent Owner has never provided clarification or correction of the foregoing apparent misunderstanding on the part of the Examiner.

The issue fee was paid on June 21, 2016, and the '120 Patent issued on July 26, 2016. Issued claims 20 and 21 in the '120 Patent are unchanged from corresponding claims 18 and 19 in the as-filed application.

**C. Claim Construction (37 C.F.R. § 42.104(b)(3))**

In an *inter partes* review, a claim in an unexpired patent is construed “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). Petitioner therefore requests that the claim terms be given their plain and ordinary meaning, as understood by one of ordinary skill in the art and consistent with the disclosure.

In addition, Patent Owner has taken positions in the Lawsuit regarding the meaning of at least the last two clauses of claim 20. These positions were taken in the First Amended Complaint, submitted May 13, 2024, a copy of which is attached as Exhibit 1010. The First Amended Complaint is the operative pleading from Patent Owner in the Lawsuit.

In paragraphs 33 through 43 of the First Amended Complaint, Patent Owner accuses products of infringing claim 20 because they (1) pair with a device, (2) reconnect with that device after being placed into and then removed from a charging case, and (3) broadcast availability for pairing if that device is no longer available for reconnection when again placed into and removed from a charging

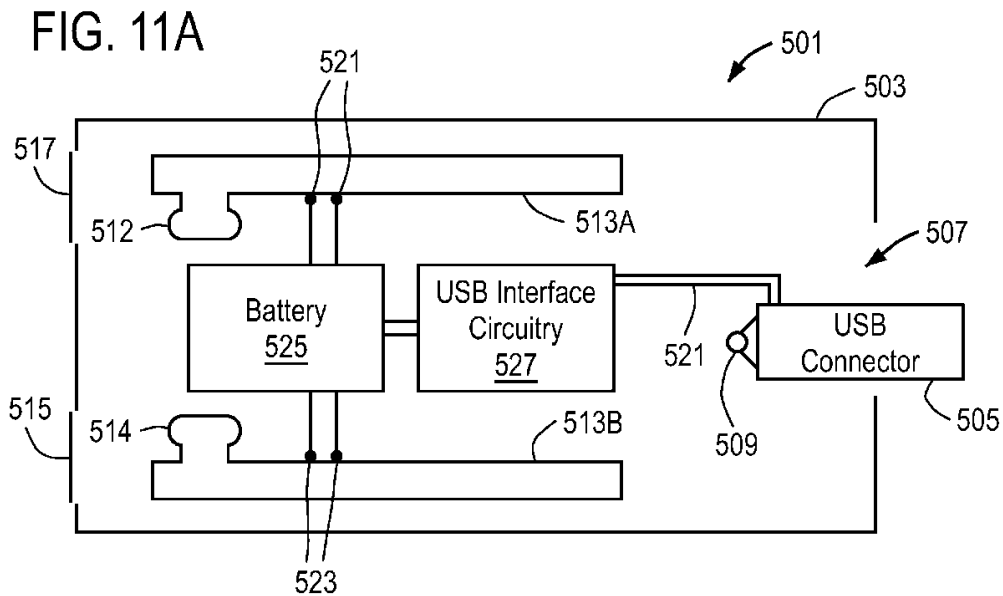
case. Ex. 1010, pp. 10–15. Petitioner has disputed that this functionality is within the scope of claim 20 and reserves its right to continue advancing that position in the Lawsuit. However, Patent Owner should be estopped from taking a position in response to this Petition that would be inconsistent with the position taken in the First Amended Complaint.

**VIII. REASONS FOR THE RELIEF REQUESTED UNDER 37 C.F.R. §§ 42.22(a)(2) AND 42.104(b)(4)**

**A. Ground 1 — Obviousness in view of Olodort and Guccione**

Claims 20 and 21 are invalid under 35 U.S.C. § 103 based on Olodort (Ex. 1002) in view of Guccione (Ex. 1003).

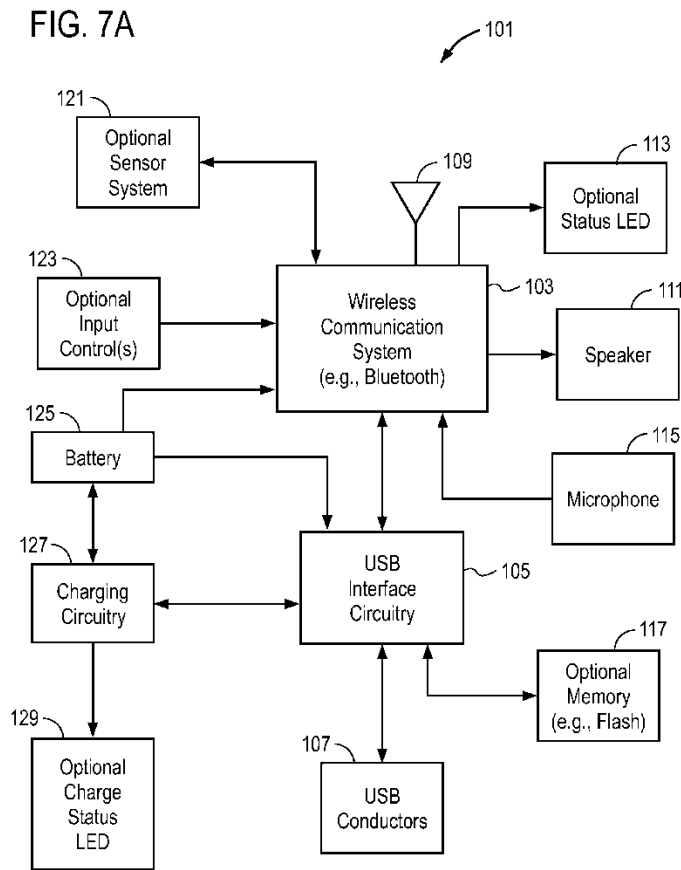
Olodort discloses wireless earpieces, which Olodort depicts as earbuds, having a low power state, a stereo mode, and a mono mode. Ex. 1002, ¶¶ [0016], [0055]. The wireless earpieces of Olodort include a body, a speaker configured to create sound, and a chargeable battery. *Id.* at ¶¶ [0007], [0017]. An illustrative schematic of the wireless earpieces 513A and 513B within an associated housing 503 for charging is shown in FIG. 11A of Olodort, which is reproduced below:



Ex. 1002, FIG. 11A

Additional depictions of the wireless earpieces and associated charging housing are shown in FIGS. 1 through 6, 8A through 8L, 11B, and 13A through 13E of Olodort.

Olodort further teaches or suggests that the wireless earpieces taught therein include circuitry for wireless communication and for handling input and output, including audio input and output and controlling operation of the wireless earpieces responsive to user input. *Id.* at ¶¶ [0007], [0052], [0055], [0058]. An illustrative schematic of a system 101 implemented within the wireless earpieces, having circuitry, and for implementing operations of the wireless earpieces is shown in FIG. 7A of Olodort, which is reproduced below:



Ex. 1002, FIG. 7A.

Additional depictions of systems and circuitry implemented within the wireless earpieces are shown in FIGS. 7B and 12 of Olodort.

Under control of the circuitry, Olodort discloses that the wireless earpieces enter and exit a low power state, which can be a standby mode. *Id.* at ¶ [0055], claim 38. The wireless earpieces of Olodort enter the low power state when they have been coupled to a power source to charge battery. *Id.* at ¶ [0055]. When

removed from a charging housing, the wireless earpieces of Olodort enter various modes. *Id.* at claims 50, 52.

After removal of both earpieces from the charging housing, the wireless earpieces of Olodort automatically switch to stereo mode. *Id.* at claim 52. When only one wireless earpiece is powered on, after that earpiece is removed from the charging housing and while the other earpiece remains in the charging case, the active wireless earpiece of Olodort is configured to be used in a mono mode. *Id.* at claims 50, 52. When in stereo mode, Olodort states that “each of the first earpiece and the second earpiece can be configured to act as master device and when one becomes the master device, the other earpiece will in response act as the slave device.” *Id.* at Abstract; *see also* ¶¶ [0014], [0055], claims 42, 56, 59.

The master earpiece disclosed in Olodort “receive[s] wirelessly communication signals from a host device ... and ... transmit[s] wirelessly signals to the other earpiece which is configured to act as a slave device.” *Id.* at ¶¶ [0014], [0065].

Like Olodort, Guccione discloses a wireless audio reproduction device including an ear bud, a housing, a speaker, a rechargeable battery, and circuitry for performing a variety of functions. Ex. 1003, ¶¶ [0007], [0035], [0036], [0047], [0048]. The device of Guccione “will first attempt to reconnect to the last phone used (if any)” when “the headset is powered on.” Ex. 1003, ¶ [0060]. “If the phone

is out of range or not available, the headset 10 will automatically enter a discoverable state.” *Id.*

**1. Independent claim 20 would have been obvious to a POSITA in view of Olodort and Guccione.**

Olodort discloses nearly all the limitations required by independent claim 20 of the '120 Patent. Olodort discloses a “wireless earbud having an idle mode and an operational mode.” *Compare* Ex. 1001, claim 20, preamble, *with* Ex. 1002, ¶¶ [0016], [0055], claim 38 (the first and second “earpiece[s],” “low power state,” “standby mode,” “stereo mode,” and “mono mode”). Each earpiece of Olodort includes “an earbud housing; a loudspeaker element; [and] a rechargeable battery.” *Compare* Ex. 1001, claim 20, clauses 1–3, *with* Ex. 1002, ¶¶ [0007], [0017] (the “body,” “speaker,” and “battery ... configured to receive power to recharge”).

Olodort discloses that each earpiece “can include a wireless communication system 103,” which “can be a Bluetooth chipset” and which a person of ordinary skill in the art would understand to be “circuitry for wireless radio communication.” *Compare* Ex. 1001, claim 20, clause 4, *with* Ex. 1002, ¶¶ [0055], [0057], [0058] *and* Ex. 1007, ¶¶ 75, 76.

Olodort further discloses that the wireless communication system 103 “is also coupled to a speaker 111 to provide an audio output to a user.” Ex. 1002, ¶ [0057]. To transform a received wireless signal, such as a Bluetooth signal, into a

signal usable by the speaker 111 to reproduce audio output, the wireless communication system 103 must inherently employ and control one or more audio codecs<sup>12</sup>. Ex. 1007, ¶¶ 78–80. A person of ordinary skill in the art would therefore understand the wireless communication system 103 to be “circuitry for ... audio codec ... control.” *Compare* Ex. 1001, claim 20, clause 4, *with* Ex. 1002, ¶¶ [0055], [0057], [0058] *and* Ex. 1007, ¶¶ 78–80. Alternatively, a person of ordinary skill in the art would have found it obvious to modify the wireless communication system 103 of Olodort to include audio codecs for providing audio output to a user because audio codecs were known and implementing them would have involved nothing more than the routine application of ordinary skill to achieve predictable results. Ex. 1007, ¶¶ 78–80.

The wireless communication system 103 of Olodort is coupled to “one or more input controls such as an on/off button or volume buttons or an answer button, or a touchpad(s) etc.” Ex. 1002, ¶¶ [0052], [0056]. A person of ordinary skill in the art would understand functions of turning on and off, volume control, and answering to be earbud operations. Ex. 1007, ¶ 81. Accordingly, a person of ordinary skill in the art would understand the wireless communication system 103

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<sup>12</sup> “Codec” is a portmanteau of coder/decoder and refers to hardware or software that encodes or decodes a signal or data.

to be “circuitry for ... earbud operation control.” *Compare* Ex. 1001, claim 20, clause 4, *with* Ex. 1002, ¶¶ [0052], [0056] *and* Ex. 1007, ¶ 81.

Olodort does not explicitly state whether the wireless communication system 103 taught therein is disposed on “at least one main printed circuit board.” *See* Ex. 1001, claim 20, clause 4. However, printed circuit boards were a well-known, conventional means for supporting circuitry and routing signals among such circuitry as of the priority date of the ’120 Patent, and had been for decades. Ex. 1007, ¶¶ 82, 83.

Disposing the wireless communication system 103 of Olodort on “at least one main printed circuit board” would have involved nothing more than combining prior art elements according to known methods to yield predictable results. *Id.* at ¶¶ 82, 83. At a minimum, disposing the wireless communication system 103 of Olodort on “at least one main printed circuit board” would have been one of a finite number of identified, predictable solutions for implementing the wireless communication system 103 within the earpieces of Olodort. *Id.* at ¶¶ 82, 83. Therefore, doing so would have been obvious to a person of ordinary skill in the art under 35 U.S.C. § 103, or a person of ordinary skill in the art would have found it obvious to try doing so.

Petitioner maintains that the phrase “configured for automatic power preservation” in claim 20, clause 5, of the ’120 Patent is intended use language that

is not limiting on the scope of the claim. To whatever extent the Board may find such language to be limiting, the circuitry of the earpieces disclosed in Olodort is configured to perform many of the operations recited in claim 20, clauses 6 through 12, for at least the reasons discussed in greater detail below. Accordingly, the circuitry of the earpieces disclosed in Olodort must inherently be “configured for automatic power preservation” (*see* Ex. 1001, claim 20, clause 5) because the only operations recited for accomplishing that intended result are those in clauses 6 through 12 of claim 20.<sup>13</sup>

The circuitry of Olodort is configured for “detecting connection of said battery to a charger and in response entering the idle mode.” *Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1002, ¶ [0055] (“The connection between USB interface circuitry 105 and the system 103 can be used by system 103 to cause it to enter a low power state when it determines that the USB interface, through conductors 107, has been coupled to a power source to charge battery 125.”). A person of ordinary skill in the art would understand that the low power state of Olodort is one in which “existing connections to a second wireless earbud and to a

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<sup>13</sup> Petitioner acknowledges that some of the operations recited in claim 20, clauses 6 through 12, consume power. However, claim 20 states that the circuitry be “configured for automatic power preservation by” performing those operations as well as others. Accordingly, those operations must be how the circuitry is configured to achieve the stated result within the meaning of claim 20.

wireless audio streaming host device will be disconnected” because Olodort characterizes its low power state as “a standby mode.” *Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1002, claim 38 *and* Ex. 1007, ¶¶ 84–87.

Olodort’s circuitry is also configured for “detecting disconnection of said battery from said charger and in response entering the operational mode.” *Compare* Ex. 1001, claim 20, clause 7, *with* Ex. 1002, claims 43, 50, 52 (reciting that the earpieces enter mono or stereo modes after removal from a charging housing). Responsive to disconnection from a charger, the circuitry of the earpieces taught in Olodort is configured for “attempting a true wireless stereo, TWS, reconnection with the second wireless earbud.” *Compare* Ex. 1001, claim 20, clause 8, *with* Ex. 1002, claim 52. “[I]f the attempt is successful,” the circuitry of the earpieces taught in Olodort is configured for “operating the wireless earbud as a TWS audio receiver and otherwise operating the wireless earbud as a mono wireless audio receiver.” *Compare* Ex. 1001, claim 20, clause 9, *with* Ex. 1002, claims 43, 50, 52.

To whatever extent the Patent Owner may argue that the transition from the low power mode to the mono and stereo modes disclosed in Olodort is not accomplished responsive to “detecting disconnection of [the] battery from [the] charger,” a person of ordinary skill in the art would have found it obvious to do so. Olodort explicitly states that that an earbud’s circuitry “cause[s] it to enter a low

power state when it determines that the USB interface, through conductors 107, has been coupled to a power source to charge battery 125.” Ex. 1002, ¶ [0055]. Olodort also discloses that the earbuds include “charging circuitry” for charging the battery which is capable of “indicat[ing] charge status.” *Id.*

A person of ordinary skill in the art would have recognized that disconnection from a charger was among the triggers that could be used to cause the earbuds to exit the low power state and enter the stereo or mono modes, given that connection to the charger is explicitly disclosed as a trigger for making the opposite change. Ex. 1007, ¶¶ 88–92. Detecting the connection to a charger would have required no modification to the hardware, as the circuitry is explicitly disclosed as being capable of determining charging conditions like connection and charge status. *See* Ex. 1002, ¶ [0055]. Therefore, detecting disconnection from a charger and using the detected disconnection as a trigger for changing from a low power state to a stereo or mono mode would have been obvious to a person of ordinary skill in the art in view of Olodort.

“[I]f operated as a TWS audio receiver,” the circuitry of the earpieces taught in Olodort is configured for “determining whether the wireless earbud is a master device or a slave device with respect to the second wireless earbud.” *Compare* Ex. 1001, claim 20, clause 10, *with* Ex. 1002, Abstract, ¶¶ [0014], [0055], claims 42, 56, 59 (“[E]ach of the first earpiece and the second earpiece can be

configured to act as master device and when one becomes the master device, the other earpiece will in response act as the slave device.”).

“[I]f the wireless earbud is determined to be a master device,” the circuitry of the earpieces taught in Olodort is configured for “attempting to reconnect with the wireless audio streaming host device and other known wireless audio streaming host devices if applicable.” *Compare* Ex. 1001, claim 20, clause 11, *with* Ex. 1002, Abstract, ¶¶ [0014], [0055], claims 42, 56, 59 (“[E]ach of the earpieces ... can be configured to act as a master device to receive wirelessly communication signals from a host device, ... and to transmit wirelessly signals to the other earpiece which is configured to act as a slave device relative to the master device.”). The successful transmission of signals between the master earpiece device and a host device (to which the master earpiece has previously been connected and remains paired), as taught in Olodort (Ex. 1002, ¶¶ [0014], [0055]), must inherently be preceded by an attempt at reconnection because successful reconnection cannot take place without first making an attempt to do so.

Olodort does not explicitly disclose what happens “if reconnection with the wireless audio streaming host device fails,” as recited in claim 20, clause 12, of the ’120 Patent. However, Guccione discloses earbuds having circuitry configured for performing the limitations of claim 20, clause 12. Specifically, Guccione teaches that its circuitry is configured for “initiat[ing] a pairing procedure with the

wireless audio streaming host device and other known wireless audio streaming host devices if applicable” “if reconnection with the wireless audio streaming host device fails.” *Compare* Ex. 1001, claim 20, clause 12, *with* Ex. 1003, ¶ [0060] (“If the phone is out of range or not available, the headset 10 will automatically enter a discoverable state.”).

Incorporating circuitry having the functionality for initiating a pairing procedure when reconnection fails disclosed in Guccione into the circuitry of Olodort would have involved nothing more than combining known components from systems for performing the same or comparable functions. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007); Ex. 1003, ¶¶ [0004], [0007], [0060]. Such a combination could have been made in accordance with known techniques to yield the predictable result of enabling interfacing between the earbud and multiple audio gateway devices. *KSR*, 550 U.S. at 416; Ex. 1003, ¶ [0004], [0007], [0060].

In addition, it would have been obvious to make such a combination because doing so merely involves applying a known technique to improve a similar, known device in the same way to produce the foregoing predictable results. *See KSR*, 550 U.S. at 416. Adding the circuitry and corresponding operations disclosed in Guccione would have better enabled interfacing between an earbud and multiple audio gateway devices, as explicitly taught in Guccione. Ex. 1003, ¶¶ [0004],

[0007], [0060]. Furthermore, the circuitry and functionality disclosed in Guccione would have made reconnection and pairing with multiple host devices more “convenient and user-friendly,” which the ’120 Patent admits were “[i]mportant characteristics of wireless earbuds.” *See* Ex. 1001; 1:19–23. Therefore, a POSITA would have been motivated to combine the circuitry of Guccione with the circuitry of Olodort in a manner resulting in the subject matter of claim 20, clause 12, of the ’120 Patent. *See KSR*, 550 U.S. at 416.

Should Patent Owner argue that Olodort’s disclosure of actual connection and reconnection is insufficient to teach “attempting to reconnect,” as claimed, Guccione discloses such subject matter. Guccione states that the headset disclosed therein, once powered on, “will first attempt to reconnect to the last phone used (if any).” Ex. 1003 ¶¶ [0060], [0065].

Implementing circuitry for attempting reconnection, as disclosed in Guccione, in the earpieces of Olodort would have involved nothing more than combining known components for accomplishing the same objectives. *See KSR*, 550 U.S. at 416; Ex. 1002, ¶¶ [0055], [0057], [0058]; Ex. 1003, ¶¶ [0060], [0065]. This modification would have been accomplished in accordance with known techniques to yield the predictable result of facilitating reconnection and pairing with multiple host devices “for a seamless transition between devices.” *See KSR*, 550 U.S. at 416; Ex. 1003, ¶¶ [0032], [0051], [0060], [0065]. This modification

would also have made reconnection and pairing with multiple host devices more “convenient and user-friendly,” which a POSITA would have known were “[i]mportant characteristics of wireless earbuds.” *See* Ex. 1001; 1:19–23.

The correspondence between what is claimed in claim 20 of the ’120 Patent, and what is disclosed in the prior art, is summarized in the following chart:

Limitation of Claim 20 of the ’120 Patent	Corresponding Disclosure in the Prior Art
20. A wireless earbud having an idle mode and an operational mode, the wireless earbud comprising:	Ex. 1002, ¶¶ [0016], [0055] (disclosing “automatically set[ting] the first earpiece to act as a mono headset while the second earpiece is placed in a low power state ,” “automatically setting the first and second earpieces to operate in a stereo mode,” and “enter[ing] a low power state”).
an earbud housing;	Ex. 1002, ¶ [0007] (“The first earpiece can include a body ...”).
a loudspeaker element;	Ex. 1002, ¶ [0007] (“The first earpiece can include ... a speaker ... configured to create sound from an electrical output such as an output from a host device (e.g. a cellular telephone, computer, or an entertainment device or other consumer electronic devices).”).

Limitation of Claim 20 of the '120 Patent	Corresponding Disclosure in the Prior Art
a rechargeable battery; and	Ex. 1002, ¶ [0017] (“[A] first earpiece ... includes a first battery and a first set of connectors configured to receive power to recharge the first battery ....”).
at least one main printed circuit board having disposed thereon circuitry for wireless radio communication, audio codec and earbud operation control;	Ex. 1002, ¶¶ [0052], [0055]–[0058] (disclosing that “each earpiece may also include ... user controls;” “wireless communication system 103 can be a Bluetooth chipset;” “wireless communication system 103 is also coupled to a speaker 111 to provide an audio output to a user”).
wherein the circuitry is configured for automatic power preservation by:	Ex. 1001, 1:19–23 (admitting that “duration between battery chargings” was known to be an “[i]mportant characteristic[] of wireless earbuds”).
detecting connection of said battery to a charger and in response entering the idle mode, wherein existing connections to a second wireless earbud and to a wireless audio streaming host device will be disconnected; and	Ex. 1002, ¶ [0055] (“The connection between USB interface circuitry 105 and the system 103 can be used by system 103 to cause it to enter a low power state when it determines that the USB interface, through conductors

<b>Limitation of Claim 20 of the '120 Patent</b>	<b>Corresponding Disclosure in the Prior Art</b>
	107, has been coupled to a power source to charge battery 125.”).
detecting disconnection of said battery from said charger and in response entering the operational mode by:	Ex. 1002, claims 43, 50, 52 (reciting that the earpieces enter mono or stereo modes after removal from a charging housing).
attempting a true wireless stereo, TWS, reconnection with the second wireless earbud;	Ex. 1002, claim 52 (“[A]fter the other of the first and the second earpieces is removed from its chamber then the first and the second earpieces are automatically switched to stereo mode.”).
if the attempt is successful, operating the wireless earbud as a TWS audio receiver and otherwise operating the wireless earbud as a mono wireless audio receiver;	Ex. 1002, claims 43, 50, 52 (“[E]ach of the first earpiece and the second earpiece is configured to be used in a mono mode after being removed from one of the first and the second chambers while the other of the first and the second earpieces remains in a low power mode within the other of the first and the second chambers.” “[A]fter the other of the first and the second earpieces is removed from its chamber then the first and the second

<b>Limitation of Claim 20 of the '120 Patent</b>	<b>Corresponding Disclosure in the Prior Art</b>
	earpieces are automatically switched to stereo mode.”).
if operated as a TWS audio receiver, determining whether the wireless earbud is a master device or a slave device with respect to the second wireless earbud;	Ex. 1002, Abstract, ¶¶ [0014], [0055], claims 42, 56, 59 (“[E]ach of the first earpiece and the second earpiece can be configured to act as master device and when one becomes the master device, the other earpiece will in response act as the slave device.”).
if the wireless earbud is determined to be a master device, attempting to reconnect with the wireless audio streaming host device and other known wireless audio streaming host devices if applicable; and	Ex. 1002, Abstract, ¶¶ [0014], [0055], claims 42, 56, 59 (“[E]ach of the earpieces ... can be configured to act as a master device to receive wirelessly communication signals from a host device, ... and to transmit wirelessly signals to the other earpiece which is configured to act as a slave device relative to the master device.”). Ex. 1003 ¶¶ [0060], [0065] (“[T]he headset is powered on and will first attempt to reconnect to the last phone used (if any).”).
if reconnection with the wireless audio streaming host device	Ex. 1003, ¶ [0060] (“If the phone is out of range or not available, the headset

<b>Limitation of Claim 20 of the '120 Patent</b>	<b>Corresponding Disclosure in the Prior Art</b>
fails, initiate a pairing procedure with the wireless audio streaming host device and other known wireless audio streaming host devices if applicable.	10 will automatically enter a discoverable state.”).

In brief, each of the limitations required by claim 20 of the '120 Patent was disclosed in the prior art and combining them with one another to produce the subject matter of claim 20 would have involved nothing more than the routine, predictable application of ordinary skill. Accordingly, claim 20 of the '120 Patent would have been obvious to a POSITA under 35 U.S.C. § 103 in view of Olodort and Guccione, and cancellation of claim 20 is respectfully requested.

**2. *Dependent claim 21 likewise would have been obvious in view of Olodort and Guccione.***

Claim 21 of the '120 Patent depends from claim 20, and requires all the limitations recited therein. Claim 21 further recites that the circuitry for wireless radio communication of the wireless earbud “is compliant with one or more of Bluetooth, AirPlay, PlayFi, Miracast, WiDi, DLNA or Wi-Fi Direct.”

Olodort discloses that its “wireless communication system 103 can be a Bluetooth chipset or can be a Bluetooth chipset and other components to provide

other types of wireless communication such as WiFi, etc.” *Compare* Ex. 1001, claim 21, *with* Ex. 1002 ¶¶ [0055], [0058]. Thus, no modification of the wireless communication system 103 of Olodort is required to arrive at the subject matter of claim 21.

Therefore, the limitations of claim 21 of the ’120 Patent were known in the prior art, and combining them with one another to produce the subject matter of claim 21 would have involved nothing more than the routine, predictable application of ordinary skill. Accordingly, Olodort and Guccione render dependent claim 21 obvious to a POSITA under 35 U.S.C. § 103, and claim 21 should be canceled.

**B. Ground 2 – Obviousness Based on Olodort and Guccione in View of Yamashita**

Claims 20 and 21 are invalid under 35 U.S.C. § 103 based on Olodort (Ex. 1002) and Guccione (Ex. 1003) in view of Yamashita (Exs. 1004, 1005A, 1005B). The disclosures of Olodort and Guccione were summarized previously in connection with Ground 1, and that summary is not repeated here.

Yamashita discloses devices “capable of automatically resuming playback of music and other content data interrupted by the disconnection of a wireless connection.” Ex. 1005A, Abstract, ¶ [0007]. Yamashita discloses that such devices may be wireless headphones 20, which may include a system control unit 51

having a processing unit 64 for reconnecting to the audio player 10. *Id.* at ¶¶ [0011], [0030]–[0032], [0041], [0042]. “[I]f ... the reconnection processing unit 64 determines that the reconnection has succeeded or failed, ... the reconnection processing unit 64 reconnects to the audio player 10 again. ... and the reconnection process is repeated ... until the reconnection is successful.” *Id.* at ¶ [0042]. Yamashita teaches that its techniques for attempting reconnection “reduc[e] battery consumption” by avoiding “unnecessary reconnection attempts,” among other benefits. *Id.* at ¶ [0043].

**1. *Independent claim 20 would have been obvious to a POSITA based on Olodort and Guccione in view of Yamashita.***

Should Patent Owner argue that the disclosures of Olodort and Guccione are insufficient to teach the “automatic power preservation” and “attempting to reconnect” limitations of claim 20, this subject matter was known from Yamashita. Circuitry of the wireless headphones of Yamashita is configured for “attempting to reconnect with the wireless audio streaming host device and other known wireless audio streaming host devices if applicable.” *Compare* Ex. 1001, claim 20, clause 11, *with* Ex. 1005A, ¶¶ [0041], [0042] (“[I]f ... the reconnection processing unit 64 determines that the reconnection has succeeded or failed, ... the reconnection processing unit 64 reconnects to the audio player 10 again. ... and the reconnection process is repeated ... until the reconnection is successful.”). Yamashita discloses

that “automatic power preservation” was known as a desirable and achievable outcome for operations of a wireless headphone. *Compare* Ex. 1001, claim 20, clause 5, *with* Ex. 1005A, ¶ [0043] (teaching that the reconnection techniques disclosed “reduce battery consumption” by avoiding “unnecessary reconnection attempts”).

It would have required only combining known circuitry for performing the same function (reconnection) from comparable systems utilizing known techniques to incorporate the circuitry disclosed in Yamashita into the circuitry and/or earpieces of Olodort. *See KSR*, 550 U.S. at 416; Ex. 1005A, ¶¶ [0042], [0043]. The foregoing combination would have yielded the predictable result of automatically preserving power in the manner recited in, and within the meaning of, claim 20, clause 5, of the ’120 Patent. *See KSR*, 550 U.S. at 416; Ex. 1005A, ¶¶ [0042], [0043].

Making such a change would further have been obvious because doing so merely involves applying a known technique to improve a similar, known device in the same way to produce predictable results. *See KSR*, 550 U.S. at 416. Adding the circuitry disclosed in Yamashita to the circuitry and/or earpieces of Olodort would have involved nothing more than the application of ordinary skill to implement the known reconnection techniques from Yamashita on the known device of Olodort to reduce battery consumption when attempting reconnection, as taught in Yamashita.

See Ex. 1005A, ¶¶ [0042], [0043]. In addition, a POSITA would have recognized that combining the circuitry disclosed in Yamashita with the circuitry and/or earpieces of Olodort would have increased “convenience and user-friendliness,” which the ’120 Patent admits were known as “[i]mportant characteristics of wireless earbuds.” See Ex. 1001, 1:19–23. Therefore, a POSITA would have been motivated to combine the circuitry of Yamashita with that of Olodort in a manner resulting in the subject matter of claim 20, clauses 5 and 11, of the ’120 Patent. See *KSR*, 550 U.S. at 416.

***1. Dependent claim 21 likewise would have been obvious in view of Olodort and Guccione in view of Yamashita.***

Claim 21 of the ’120 Patent depends from claim 20, and requires all the limitations recited therein. Claim 21 further recites that the circuitry for wireless radio communication of the wireless earbud “is compliant with one or more of Bluetooth, AirPlay, PlayFi, Miracast, WiDi, DLNA or Wi-Fi Direct.”

Olodort discloses that its “wireless communication system 103 can be a Bluetooth chipset or can be a Bluetooth chipset and other components to provide other types of wireless communication such as WiFi, etc.” Compare Ex. 1001, claim 21, with Ex. 1002 ¶¶ [0055], [0058]. Thus, no modification of the wireless communication system 103 of Olodort is required to arrive at the subject matter of claim 21.

Therefore, the limitations of claim 21 of the '120 Patent were known in the prior art, and combining them with one another to produce the subject matter of claim 21 would have involved nothing more than the routine, predictable application of ordinary skill. Accordingly, Olodort, Guccione, and Yamashita render dependent claim 21 obvious to a POSITA under 35 U.S.C. § 103, and claim 21 should be canceled.

**C. Ground 3 – Obviousness Based on Olodort and Guccione in View of the Bluetooth® Spec. 4.1, Optionally Further in View of Yamashita**

Claims 20 and 21 are invalid under 35 U.S.C. § 103 based on Olodort (Ex. 1002), Guccione (Ex. 1003), and Yamashita (Exs. 1004, 1005A, 1005B) in view of the Bluetooth® Spec. 4.1 (Ex. 1006). The disclosures of Olodort, Guccione, and Yamashita were summarized previously in connection with Grounds 1 and 2, and that summary is not repeated here.

The Bluetooth® Spec. 4.1 teaches how devices can wirelessly connect, disconnect, and reconnect to one another using a “link controller.” Ex. 1006, pp. 159–175. The Bluetooth® Spec. 4.1 was not cited to the U.S. Patent Office, or uncovered by the Examiner, during prosecution of the '120 Patent. The link controller disclosed in the Bluetooth® Spec. 4.1 is capable of implementing different operational states, of which three are described as “major states: STANDBY, CONNECTION, and PARK.” *Id.* at p. 159. “The STANDBY state is

the default state in the device,” and may be “a low-power mode.” *Id.* “In the STANDBY state, no connection has been established.” *Id.* at pp. 161, 163, 172. The Bluetooth® Spec. 4.1 teaches that the absence of connection in the standby state is desirable to provide “capacity to carry out” various inquiry scans and page scans for establishing connections. *Id.*

**1. *Independent claim 20 would have been obvious to a POSITA based on Olodort, Guccione, and Yamashita in view of the Bluetooth® Spec. 4.1.***

The limitations of claim 20 are disclosed in Olodort, Guccione, and Yamashita for at least the reasons discussed previously in connection with Ground 1. The reasoning, arguments, and evidence presented in Ground 1 will not be repeated here for the sake of brevity and are incorporated by reference into Ground 2.

Regarding this Ground 2, the circuitry of Olodort is configured for “detecting connection of said battery to a charger and in response entering the idle mode.” *Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1002, ¶ [0055] (“The connection between USB interface circuitry 105 and the system 103 can be used by system 103 to cause it to enter a low power state when it determines that the USB interface, through conductors 107, has been coupled to a power source to charge battery 125.”). Petitioner maintains that a person of ordinary skill in the art would understand the low power state of Olodort is one in which “existing connections to

a second wireless earbud and to a wireless audio streaming host device will be disconnected” because Olodort characterizes its low power state as “a standby mode.” *Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1002, claim 38 *and* Ex. 1007, ¶¶ 84–86.

To whatever extent Patent Owner may contend that Olodort does not disclose the claimed “idle mode” or the claimed disconnection of existing connections, these limitations are further disclosed in the Bluetooth® Spec. 4.1. The circuitry of the Bluetooth® Spec. 4.1 is configured for “entering [an] idle mode” within the meaning of claim 20, clause 6, of the ’120 Patent, which the Bluetooth® Spec. 4.1 characterizes as a STANDBY state. *Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1006, pp. 159, 161, 163, 172. When the circuitry of the Bluetooth® Spec. 4.1 is in the STANDBY state, “existing connections to a second wireless earbud and to a wireless audio streaming host device will be disconnected.” *Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1006, pp. 161, 163, 172 (“In the STANDBY state, no connection has been established.”).

Therefore, the Bluetooth® Spec. 4.1 confirms a person of ordinary skill in the art would understand the “low power state” and “standby mode” taught in Olodort to be “idle mode[s]” in which “existing connections to a second wireless earbud and to a wireless audio streaming host device will be disconnected.”

*Compare* Ex. 1001, claim 20, clause 6, *with* Ex. 1002, ¶ [0055], claim 38 *and* Ex. 1006, pp. 159, 161, 163, 172.

Alternatively, a person of ordinary skill in the art would have been motivated by the Bluetooth® Spec. 4.1 to modify the “low power state” and “standby mode” taught in Olodort to be “idle mode[s]” in which “existing connections to a second wireless earbud and to a wireless audio streaming host device will be disconnected.” Both Olodort and the Bluetooth® Spec. 4.1 characterize their relevant states as “standby,” and the Bluetooth® Spec. 4.1 explicitly states, “In the STANDBY state, no connection has been established.” Ex. 1002, ¶ [0055], claim 38; Ex. 1006 at pp. 161, 163, 172.

Implementing the standby state disclosed in the Bluetooth® Spec. 4.1, including its absence of connection, in the earpieces of Olodort would have involved nothing more than combining known components for accomplishing the same objectives. *See KSR*, 550 U.S. at 416; Ex. 1002, ¶ [0055], claim 38; Ex. 1006 at pp. 161, 163, 172. This modification could have been accomplished in accordance with known techniques to yield the predictable result of providing wireless audio, which the ’120 Patent explicitly acknowledges as “increasingly popular.” *See KSR*, 550 U.S. at 416; Ex. 1001, 1:10–19. This modification would also have provided the predictable benefit of increasing “duration between battery chargings,” which the Background section of the ’120 Patent acknowledges was

known as an “[i]mportant characteristic[] of wireless earbuds.” *See KSR*, 550 U.S. at 416; Ex. 1001, 1:19–23.

Should Patent Owner argue that the wireless communication system 103 of Olodort lacks circuitry for audio codec control, it would have been obvious to a person of ordinary skill in the art to include such circuitry in view of the Bluetooth® Spec. 4.1. The Bluetooth® Spec. 4.1 discloses multiple examples of known audio codecs. Ex. 1006, pp. 210–13. Implementing the circuitry for audio codec control disclosed in the Bluetooth® Spec. 4.1 in the earpieces of Olodort would have involved nothing more than combining known components for accomplishing the same objectives. *See KSR*, 550 U.S. at 416; Ex. 1002, ¶¶ [0055], [0057], [0058]; Ex. 1006 at pp. 210–13. This modification would have been accomplished in accordance with known techniques to yield the predictable result of providing wireless audio, which the ’120 Patent explicitly acknowledges as “increasingly popular.” *See KSR*, 550 U.S. at 416; Ex. 1001, 1:10–19. This modification would also have provided the predictable benefit of increasing “perceived audio quality of the streamed audio,” which the Background section of the ’120 Patent acknowledges was known as an “[i]mportant characteristic[] of wireless earbuds.” *See KSR*, 550 U.S. at 416; Ex. 1001, 1:19–23.

Should Patent Owner argue that the disclosure of connection and reconnection in Olodort and Guccione is insufficient to teach “attempting to

reconnect,” as claimed, the Bluetooth® Spec. 4.1 discloses such subject matter. The Bluetooth® Spec. 4.1 discloses that the “STANDBY state” is one in which “no connection has been established.” Ex. 1006, pp. 161, 163, 172. A person of ordinary skill in the art would have understood from this disclosure that wireless devices do not remain permanently connected to their paired host, but require reconnection at some point. Implementing circuitry for attempting reconnection, as disclosed in the Bluetooth® Spec. 4.1, in the earpieces of Olodort would have involved nothing more than combining known components for accomplishing the same objectives. *See KSR*, 550 U.S. at 416; Ex. 1002, ¶¶ [0055], [0057], [0058]; Ex. 1006 at pp. 161, 163, 172. This modification would have been accomplished in accordance with known techniques to yield the predictable result of providing wireless audio, which the ’120 Patent explicitly acknowledges as “increasingly popular.” *See KSR*, 550 U.S. at 416; Ex. 1001, 1:10–19. This modification would also have provided the predictable benefit of increasing “convenience and user-friendliness,” which the Background section of the ’120 Patent acknowledges was known as an “[i]mportant characteristic[] of wireless earbuds.” *See KSR*, 550 U.S. at 416; Ex. 1001, 1:19–23.

Therefore, the limitations of claim 20 of the ’120 Patent were known in the prior art and combining them with one another to produce the subject matter of claim 20 would have involved nothing more than the routine, predictable

application of ordinary skill. Accordingly, Olodort, Guccione, and the Bluetooth® Spec. 4.1, optionally in further combination with Yamashita, render independent claim 20 obvious to a POSITA under 35 U.S.C. § 103, and claim 20 should be canceled.

**2. *Dependent claim 21 likewise would have been obvious in view of Olodort, Guccione, and Bluetooth® Spec. 4.1, optionally further in view of Yamashita.***

Claim 21 of the '120 Patent depends from claim 20, and requires all the limitations recited therein. Claim 21 further recites that the circuitry for wireless radio communication of the wireless earbud “is compliant with one or more of Bluetooth, AirPlay, PlayFi, Miracast, WiDi, DLNA or Wi-Fi Direct.”

Olodort discloses that its “wireless communication system 103 can be a Bluetooth chipset or can be a Bluetooth chipset and other components to provide other types of wireless communication such as WiFi, etc.” *Compare* Ex. 1001, claim 21, *with* Ex. 1002 ¶¶ [0055], [0058]. Thus, no modification of the wireless communication system 103 of Olodort is required to arrive at the subject matter of claim 21. The Bluetooth® Spec. 4.1 also discloses a link processor compliant with Bluetooth®, given that the Bluetooth® Spec. 4.1 defines Bluetooth® compliance. *Compare* Ex. 1001, claim 21, *with* Ex. 1006, p. 159.

Therefore, the limitations of claim 21 of the '120 Patent were known in the prior art, and combining them with one another to produce the subject matter of

claim 21 would have involved nothing more than the routine, predictable application of ordinary skill. Accordingly, Olodort, Guccione, and the Bluetooth® Spec. 4.1, optionally further in combination with Yamashita, render dependent claim 21 obvious to a POSITA under 35 U.S.C. § 103, and claim 21 should be canceled.

**IX. THERE IS NO BASIS FOR DISCRETIONARY DENIAL.**

The Lawsuit in which Patent Owner asserts at least claim 20 of the '120 Patent against Petitioner is in its infancy. Petitioner was originally served with the Complaint in the Lawsuit on March 7, 2024. However, much of the intervening time has been dedicated to multiple motions to dismiss, resulting in an amended Complaint from Patent Owner. Petitioner presented its Answer and Counterclaims only recently, on December 3, 2024. A Scheduling Order was entered on December 18, 2024, a true and correct copy of which is attached as Exhibit 1011.

Fact discovery has only just opened, no discovery requests of any kind have been sent, and no major events in the case have occurred. Patent Owner has not yet served initial claim charts showing its infringement contentions, and Petitioner's initial invalidity contentions are not due for about two months. Claim construction briefing has not yet begun, expert reports have not been exchanged, expert discovery has not yet begun, and no dispositive motions have been filed. In other

words, no progress specific to the issue of invalidity has been made in the parallel Lawsuit, and no substantive orders relating to the '120 Patent have issued.

Though a trial date is nominally set for August 31, 2026, it falls near, and potentially before, the date when the IPR proceedings, if instituted, would likely be complete. See 35 U.S.C. §§ 314(b), 316(a)(11) (requiring that the USPTO rule on a petition within three months after receiving a patent owner preliminary response (or the last date for filing one) and issue a final written decision no later than 1 year after the date of institution (except for good cause)). Whether the August 2026 date will hold is speculative, given the unpredictability of litigation. *See Precision Planting v. Deere*, IPR2019-01048, Paper 17, 15-19 (Dec. 4, 2019) (instituting IPR despite district court trial scheduled two months before likely final written decision; noting that courts modify deadlines “for myriad reasons”).

Thus, the parties in the Lawsuit are the same as the Patent Owner and Petitioner on this Petition. The trial date is close to, and most likely would fall after, the statutory deadline for a final written decision. In addition, any investment in the Lawsuit by the court and the parties to date has been minimal. Accordingly, the relationship of the parties to the Lawsuit and this Petition, stage of the Lawsuit, timing of this Petition, and lack of investment in the parallel proceeding weigh against a discretionary denial.

Absent “specific evidence” regarding whether the district court will grant a stay, the question of whether a stay will be granted if IPR proceedings are instituted is neutral. *Sand Revolution II v. Continental Intermodal Group–Trucking*, IPR2019-01393, Paper 24, 7 (June 16, 2020) (informative).

Should the Board grant this Petition and institute IPR proceedings, Skullcandy stipulates that Skullcandy will not pursue in the Lawsuit the specific grounds asserted in this Petition, nor any other ground that reasonably could have been raised by Skullcandy in a petition for IPR<sup>14</sup>. Thus, there is no risk of overlap between the issues raised in this Petition and the issues that will be at play in the Lawsuit on grant of this Petition.

Finally, this Petition’s “strong showing on the merits” weighs against discretionary denial. *Apple Inc. v. Seven Networks, LLC*, IPR2020-00235, Paper 10, 17 (July 28, 2020). As discussed previously, none of the references relied on in this Petition were cited to the U.S. Patent Office, or uncovered by the Examiner, during prosecution of the ’120 Patent. The Office erred materially in its evaluation of at least claim 20 of the ’120 Patent, as the subject matter identified in the Notice of Allowance as allegedly “not anticipated by, nor made obvious over, the prior art of record” was not actually in the claim at the time. *See Ex. 1009, p.2.*

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<sup>14</sup> Skullcandy has not filed, and is not aware of, any petitions for *inter partes* review of the ’120 Patent other than this Petition.

The presentation of new evidence to correct an error made during the initial evaluation of a patent weighs heavily against denying institution. *Adobe Inc. v. RAH Color Techs. LLC*, IPR2019-00627, Paper 41, 20 (Sept. 10, 2019).

Accordingly, the balance of factors does not support discretionarily denying this Petition.

**X. CONCLUSION**

For at least the reasons above, *inter partes* review should be instituted.

Dated: March 7, 2025

Respectfully submitted,



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James C. Watson  
Reg. No. 64,746  
Tel: 801-532-1922 Fax: 801-531-9168  
JCWatson@TraskBritt.com

TRASKBRITT, P.C.  
230 South 500 East, Suite 300  
Salt Lake City, UT 84102

*Counsel for Petitioner*

### CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105(a), the undersigned certifies that on March 7, 2025, a complete copy of this Petition for *Inter Partes* Review, Petitioner's power of attorney, and all exhibits were served on Patent Owner at the correspondence address of record listed below via Overnight FedEx:

Jonathan P. Soifer  
1688 – Sandberg Pheonix & von Gontard, PC  
120 S. Central Ave., Suite 1600  
St. Louis, Missouri 63105  
jsoifer@sandbergphoenix.com

It appears that the foregoing address may be out of date. For the sake of completeness, the undersigned certifies that on March 7, 2025, a complete copy of this Petition for *Inter Partes* Review, Petitioner's power of attorney, and all exhibits were additionally served on Patent Owner at the following address via Overnight FedEx:

Jonathan P. Soifer  
Sandberg Pheonix & von Gontard, PC  
701 Market St., 6th Floor  
St. Louis, Missouri 63101  
jsoifer@sandbergphoenix.com

  
James C. Watson (Reg. No. 64,746)

### **CERTIFICATION OF WORD COUNT**

Pursuant to 37 C.F.R. § 42.24, the undersigned certifies that the foregoing Petition for IPR contains 11,002 words, even including sections which can be excluded, such as table of contents, Mandatory Notices under § 42.8, certificate of service, certification of word count, and appendix of exhibits (but including the signature block). Petitioner has relied on the word count feature of the word processing system used to create this Petition in making this Certification

Date: March 7, 2025

  
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James C. Watson (Reg. No. 64,746)