PUBLIC VERSION

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of **CERTAIN SMART WEARABLE DEVICES, SYSTEMS, AND COMPONENTS THEREOF**	**Inv. No. 337-TA-1398**

INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND RECOMMENDED DETERMINATION ON REMEDY AND BOND

Administrative Law Judge Doris Johnson Hines

(April 18, 2025)

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This is the final initial determination in *Certain Smart Wearable Devices, Systems, and Components Thereof*, Inv. No. 337-TA-1398. 89 Fed. Reg. 27452 (Apr. 17, 2024) and 19 C.F.R. §§ 210.10(b) and 210.42(a)(1)(i).

I. INTRODUCTION

A. Procedural History

Ouraring, Inc. and Oura Health Oy filed a complaint alleging a violation of section 337 based on the importation into the United States, the sale for importation, and the sale within the United States after importation of certain smart wearable devices, systems, and components thereof. 89 Fed. Reg. 27452 and Second Amended Complaint (EDIS Doc. ID 820794).

The Commission instituted this investigation to determine:

> whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain products identified in paragraph (2) by reason of infringement of one or more of claims 1, 2, 6–10, 12–14, 17, and 18 of [U.S. Patent No. 11,868,178]; claims 1, 3–5, 9, 10, and 13–16 of [U.S. Patent No. 11,868,179]; and claims 1, 3–6, and 8–11 of [U.S. Patent No. 10,842,429], and whether an industry in the United States exists or is in the process of being established as required by subsection (a)(2) of section 337.

89 Fed. Reg. 27452.

The plain language description of the accused products or category of accused products defines the scope of the investigation and is "smart ring wearable devices, systems, and components thereof." *Id.* and 19 C.F.R. § 210.10(b)(1).

The notice of investigation named Ultrahuman Healthcare Pvt. Ltd., Ultrahuman Healthcare SP LLC, Ultrahuman Healthcare Ltd., Guangdong Jiu Zhi Technology, Co. Ltd., RingConn LLC, and Circular SAS as respondents. 89 Fed. Reg. 27452. The Office of Unfair Import Investigations is also a party. *Id.*

[redacted]

The target date for this investigation was set at sixteen months, making this final initial determination due no later than April 18, 2025. Order No. 7 (EDIS Doc. ID 819961).

An initial determination granted Oura leave to amend the complaint and notice of investigation to change the name of respondent Guangdong Jiu Zhi Technology, Co. Ltd. to Shenzhen Ninenovo Technology Limited and to update the address for respondent RingConn LLC. Order No. 8 (EDIS Doc. ID 820403), *unreviewed by*, Comm'n Notice (EDIS Doc. ID 822919).

An initial determination terminated respondent Circular SAS from the investigation based on a settlement. Order No. 12 (EDIS Doc. ID 825502), *unreviewed by*, Comm'n Notice (EDIS Doc. ID 828475).

Following briefing and a hearing, a claim construction order issued. Order No. 17 (EDIS Doc. ID 835448).

Oura's complaint asserted infringement of 31 claims across three patents. *See* Second Amended Complaint. Oura moved several times for partial termination of the investigation by withdrawing various asserted patents and claims. *See* Order No. 13 (EDIS Doc. ID 827636), *unreviewed by* Comm'n Notice (EDIS Doc. ID 830309); Order No. 15 (EDIS Doc. ID 832351), *unreviewed by* Comm'n Notice (EDIS Doc. ID 834223); and Order No. 21 (EDIS Doc. ID 838805), *unreviewed by* Comm'n Notice (EDIS Doc. ID 839952). Oura continues to assert claims 1, 2, and 12–14 of the '178 patent. Order No. 21 at 1.

The parties filed pre-hearing briefs. Oura Pre-hearing Br. (EDIS Doc. ID 837027); Respondents Pre-hearing Br. (EDIS Doc. ID 837040); and Staff Pre-hearing Br. (EDIS Doc. ID 837906). I held a prehearing conference, and the evidentiary hearing was held from

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December 11–17, 2024.[1] The parties filed post-hearing briefs, Oura Br. (EDIS Doc. ID 840640); Resp. Br. (EDIS Doc. ID 840646); Staff Br. (EDIS Doc. ID 840965); Oura Reply (EDIS Doc. ID 841338); Resp. Reply (EDIS Doc. ID 841353); and Staff Reply (EDIS Doc. ID 841750).

B. The Parties

1. Oura

Ouraring, Inc. is a Delaware corporation with its principal place of business in San Francisco, California. Second Amended Complaint at ¶ 6. Oura Health Oy is a Finnish company with its principal place of business in Oulu, Finland. *Id.* at ¶ 7. Ouraring, Inc. is a wholly owned subsidiary of Oura Health Oy. *Id.* at ¶ 8.

2. RingConn

RingConn LLC is a Delaware corporation with its principal place of business in Wilmington, Delaware. RingConn Answer to Second Amended Complaint at ¶ 18 (EDIS Doc. ID 821685). Shenzhen Ninenovo Technology Limited is a Chinese corporation with its principal place of business in Shenzhen, China. *Id.* at ¶ 17. Shenzhen Ninenovo Technology Limited is the parent corporation of RingConn LLC. *Id.* at ¶ 19.

3. Ultrahuman

Ultrahuman Healthcare Pvt. Ltd. is an Indian Non-Government Corporation incorporated in India with its principal place of business in Bengaluru, India. Ultrahuman Answer to Second Amended Complaint at ¶ 12 (EDIS Doc. ID 821756). Ultrahuman Healthcare SP LLC is incorporated under the laws of the United Arab Emirates with its principal place of business in

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[1] The public transcript of the evidentiary hearing is available at EDIS Doc. IDs 839191 (day 1), 839343 (day 2), 839362 (day 3), 839541 (day 4), and 840531 (day 5). The confidential transcript is available as EDIS Doc. IDs 839193 (day 1), 839345 (day 2), 839363 (day 3), and 840529 (day 5). Day 4 did not include any confidential sessions.

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Abu Dhabi, UAE. *Id.* at ¶ 13. Ultrahuman Healthcare Ltd. is incorporated under the laws of the United Kingdom with its principal place of business in London, UK. *Id.* at ¶ 14. Ultrahuman Healthcare SP LLC and Ultrahuman Healthcare Ltd. are both wholly owned subsidiaries of Ultrahuman Healthcare Pvt. Ltd. *Id.* at ¶¶ 13–14.

C. The Asserted Patent

The '178 patent, JX-0001, is titled "Wearable Computing Device"[2] and relates generally to "a wearable computing device (WCD)" that is said to enable "a wearable fitness monitor(s)/computer(s) which is suitable for prolonged usage with accurate results." '178 patent at 8:61–64. The patent states that the "invention overcomes the disadvantages of the prior art by providing a wearable computing device (WCD) in the shape of a ring. The wearable computing device can be worn for extended periods of time and can take many measurements and perform various functions because of its form factor and position on the finger of a user." *Id.* at 1:50–55. The WCD may include "an interior wall; an exterior wall; a flexible printed circuit board disposed between the interior wall and the exterior wall; at least one component disposed on the flexible printed circuit board; and wherein at least one of the interior wall and the exterior wall defines a window that facilitates at least one of data transmission, battery recharge, and status indication." *Id.* at 1:56–63. One embodiment includes an internal housing 1512 and an external housing 1514, as shown below:

[2] The '178 patent claims priority to U.S. Patent App. Nos. 62/006,835 and 61/910,201, which were filed after September 16, 2012, and is thus subject to the AIA version of the statute. Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4(c), 125 Stat. 284, 296 (2011).

[redacted]

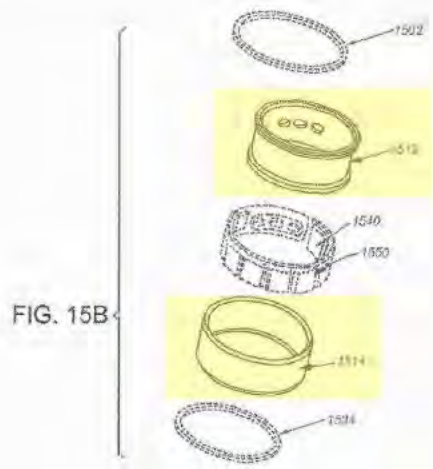
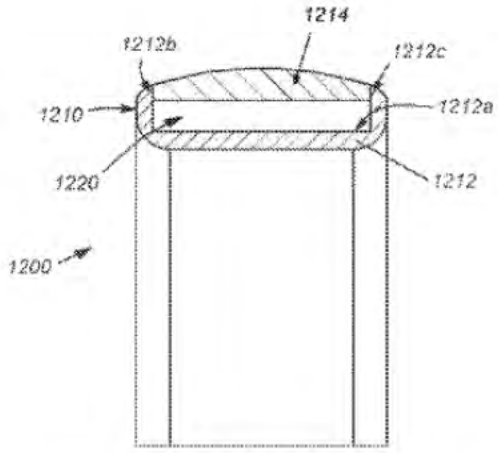


FIG. 15B

Id. at Fig. 15B (annotated).

Figure 12D shows a cross section of another embodiment of a wearable computing device 1200 including an internal housing 1212 and an external potting or encapsulant 1214.



Id. at Fig. 12D and 18:12–15. A battery and printed circuit board are positioned within internal space 1220. *Id.* at 18:35–38. The internal housing 1212 is shown as having an internal surface 1212*a* and a pair of flanges 1212*b* and *c*. Potting 1214 extends between the flanges to provide an internal space 1220 to accommodate one or more components. *Id.* at 18:15–18. The patent states:

> the internal space 1220 defined by the internal surface 1212*a* and the external potting 1214 can be hermetically sealed, thereby preventing debris, dust, moisture, or any other unwanted fluids or materials from interacting with the internal

[redacted]

components of the WCD 1200. Although not depicted, the internal components can reside within the internal space 1220, and the external potting 1214 can be disposed immediately atop the components to provide the seal.

Id. at 18:18–27. The patent describes similar embodiments in Figures 13 and 14. *See id.* at 18:63–19:15, 19:25–36. The patent also explains that the ring may be coupled to a mobile application that displays fitness monitoring readings. *Id.* at 5:46–53 and Figs. 10 and 11.

Oura asserts claims 1, 2, and 12–14 of the '178 patent, which recite:

1. [pre] A finger-worn wearable ring device, comprising:

[a] an external housing component defining an outer circumferential surface of the finger-worn wearable ring device;

[b-i] an internal housing component defining an inner circumferential surface of the finger-worn wearable ring device,

[b-ii] the internal housing component coupled with the external housing component,

[b-iii] wherein at least a portion of the inner circumferential surface of the internal housing component is configured to contact a tissue of a user when the finger-worn wearable ring device is being worn by the user;

[c-i] a battery positioned within a cavity formed between the internal housing component and the external housing component,

[c-ii] wherein the battery comprises a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component, and

[c-iii] wherein the battery extends through at least a first portion of the cavity of the finger-worn wearable ring device;

[d] a printed circuit board disposed between the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity of the finger-worn wearable ring device different from the first portion; and

[e] one or more sensors electrically coupled with the printed circuit board and the battery and configured to acquire data from the user through the internal housing component.

2. The finger-worn wearable ring device of claim 1, wherein the first portion of the cavity of the finger-worn wearable ring device is

[redacted]

non-overlapping with the second portion of the cavity of the finger-worn wearable ring device.

12. The finger-worn wearable ring device of claim 1, wherein the battery comprises a curved battery, wherein an arc of the curved battery approximates a corresponding arc of the external housing component.

13. The finger-worn wearable ring device of claim 1, wherein the one or more sensors comprise a first light-emitting component configured to emit light associated with a first wavelength, and a second light-emitting component configured to emit light associated with a second wavelength different from the first wavelength.

14. The finger-worn wearable ring device of claim 13, wherein the first wavelength is associated with visible light, and wherein the second wavelength is associated with infrared light.

'178 patent at claims 1, 2, and 12–14 and Oura Br. at 2.

D. The Accused Products

The accused products are smart ring wearable devices, systems, and components thereof. RingConn's accused products are its RingConn Smart Ring (Gen. 1 and Gen. 2) and their associated applications. Oura Br. at 14–15 and Staff Br. at 8. Ultrahuman's accused product is its Ultrahuman Ring AIR and its associated application. Oura Br. at 15–16 and Staff Br. at 8.

1. RingConn Smart Ring

The RingConn Smart Ring is a wearable smart device. *See* CX-0567 (advertising). Oura accuses both the Gen. 1 and Gen. 2 versions of infringement. Oura Br. at 14. Because Oura and RingConn stipulated that Gen. 1 is representative, JX-0008C.0002 (Stipulation Regarding Representative RingConn Products), it will be addressed. It is shown below:

[redacted]



CX-0405. The RingConn ring operates with the RingConn app, allowing users to access collected data. CX-0859.0006–0007 ("The RingConn syncs with your Android phone or iPhone via Bluetooth. . . . The app is clearly laid out and easy to read.").

2. Ultrahuman Ring AIR

Oura accuses the Ultrahuman Ring AIR of infringement. Oura Br. at 14. It is shown below:



CX-0375.

The Ultrahuman Ring AIR pairs with the Ultrahuman app so users can access collected data. Kumar Tr. at 633:5–11, 675:16–24, and 723:2–18.

3. The Domestic Industry Products

Oura relies on the Gen. 3 and Gen. 4 versions of its Oura Ring, as well as the associated Oura app, in asserting a domestic industry. Oura Br. at 12.

a. Oura Gen. 3

There are two styles of the Gen. 3, Horizon and Heritage. Sarrafzadeh Tr. at 254:13–24. They differ only in their aesthetic appearance; the Heritage has a less curvy exterior surface. *Id.* at 254:25–255:9. They are shown below:

[redacted]





CX-0701 (Oura Heritage) CX-0702 (Oura Horizon)

b. Oura Gen. 4

The Gen. 4 is similar to Gen. 3, but has a metal inner ring structure, while the Gen. 3 has a polymer inner ring structure. Chapp Tr. at 112:15–113:18, 114:3–12, and 117:4–22. The Oura Ring Gen. 4 is shown below:



CX-1146.0003.

Gen. 3 and Gen. 4 may be paired with the Oura app, which allows users to access collected data. Sarrafzadeh Tr. at 254:9–24 and Chapp Tr. at 93:22–94:4, 94:5–95:2.

II. STATUTORY AUTHORITY

Congress has directed that "[t]he Commission shall investigate any alleged violation of this section on complaint under oath or upon its initiative." 19 U.S.C. § 1337(b)(1). Section 337(a)(1)(A) declares unlawful "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that – (i) infringe a valid and enforceable United States patent . . ." 19 U.S.C. § 1337(a)(1)(B).

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The Commission has "statutory authority to investigate an alleged violation by the named respondents pursuant to section 337 [when] such respondents have allegedly imported, sold for importation, or sold after importation articles that are alleged to infringe a U.S. patent." *Certain Liquid Transfer Devices with an Integral Vial Adapter*, Inv. No. 337-TA-1362, Comm'n Op. at 7 (Jul. 26, 2024) (EDIS Doc. ID 827305). The Commission has authority over "accused products based on their alleged importation, sale for importation, or sale after importation into the United States." *Id*. at 8. "Thus, for purposes of establishing the Commission's authority to investigate an alleged violation under section 337(a)(1)(B), a complainant must allege that a violation of section 337 has occurred, *i.e.*, that a respondent imported, sold for importation, or sold after importation an article that infringes a claim of a U.S. patent and that a domestic industry exists or is in the process of being established, among other statutory requirements." *Id*. at 9.

Oura alleges a violation of section 337 by the importation, sale for importation, or sale after importation of infringing smart rings by RingConn and Ultrahuman. In particular, Oura contends that the RingConn Smart Ring (Gen. 1 and Gen. 2) and the Ultrahuman Ring AIR infringe claims 1, 2, and 12–14 of the '178 patent. Oura Br. at 22–78. Oura asserts that a domestic industry exists for the asserted claims of the '178 patent with respect to the Oura Ring Gen. 3 and Gen. 4 rings. *Id*. at 72–108. I therefore conclude that the Commission has statutory authority with respect to this investigation.

III. OWNERSHIP RIGHTS IN THE ASSERTED PATENTS

"To bring a complaint before the International Trade Commission, at least one complainant must be the owner or exclusive licensee of the subject intellectual property." *Certain Active Matrix Organic Light-Emitting Diode Display Panels and Modules for Mobile Devices, and Components Thereof*, Inv. No. 337-TA-1351, Comm'n Op. at 14 (May 15, 2024), *quoting Roku, Inc. v. Int'l Trade Comm'n*, 90 F.4th 1367, 1372 (Fed. Cir. 2024) (cleaned up) (EDIS Doc. ID 821542).

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The evidence supports that Ouraring, Inc. is the owner by assignment of the '178 patent. JX-0003.0052–60 ('178 assignment documents). This is not disputed by the Staff. Staff Br. at 15. It is not addressed, and is therefore undisputed, by respondents. Because the evidence demonstrates that Ouraring, Inc. is the owner by assignment of the asserted patent, I conclude that Oura was entitled to file its complaint in this investigation.

IV. IMPORTATION

To prove a violation of section 337, the complainant must show that the respondent engaged in "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee" of products accused of infringement. 19 U.S.C. § 1337(a)(1)(B).

In its response to the complaint, respondents RingConn LLC and Shenzhen Ninenovo Technology Limited, which collectively referred to themselves as RingConn, stated that it "sells into the United States smart ring wearable devices and components thereof and that this is the primary nature of RingConn's business." RingConn Answer to Second Complaint at ¶ 19 and *see* Wu Tr. at 764:16–765:7; CX-1013 (U.S. sales invoice); and CX-0694.0009 ("Made in China" product label). The evidence supports that the importation requirement of section 337 has been satisfied as to the RingConn accused products.

In its response to the complaint, respondents Ultrahuman Healthcare Pvt. Ltd., Ultrahuman Healthcare Ltd., and Ultrahuman Healthcare SP LLC, which collectively referred to themselves as Ultrahuman Healthcare, stated that Ultrahuman Healthcare "itself and through its subsidiaries and related entities . . . sells for importation, imports into the United States, and/or sells after importation into the United States the Ultrahuman Ring AIR." Ultrahuman Answer to Second Amended Complaint at ¶ 16 and *see* Kumar Tr. at 716:15–19. The evidence supports that the importation requirement of section 337 has been satisfied as to the Ultrahuman accused product.

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V. LEVEL OF SKILL

A person of ordinary skill in the art is a hypothetical person who is presumed to be aware of all pertinent prior art. *Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986). Determining the appropriate level of skill for this hypothetical person involves considering the types of problems encountered in the art, prior art solutions to those problems, rapidity with which innovations are made, sophistication of the technology at issue, the educational level of active workers in the field, and the level of education of the inventors themselves. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

Oura states that one of ordinary skill in the art would have "(1) at least three years of experience with research or development of health or medical devices, wearable sensors, or consumer products; and (2) a related degree (e.g., at least a bachelor's degree) in mechanical, industrial, or electrical engineering, or related field." Oura Br. at 19. This was the level of skill adopted for purposes of claim construction. Order No. 17 at 4. The Staff agrees with this articulation of the level of skill. Staff Br. at 16. Respondents acknowledge that the level of skill was determined in the claim construction order. Resp. Br. at 7. I therefore continue to adopt the definition adopted for purposes of claim construction.

VI. CLAIM CONSTRUCTION

A. Legal Standard

It 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. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). "[T]here is no magic formula or catechism for conducting claim construction." *Id.* at 1324. Instead, weight may be attached to appropriate sources "in light of the statutes and policies that inform patent law." *Id.*

[redacted]

The terms of a claim are generally given their ordinary and customary meaning which is the meaning they would have to one of skill in the art at the time of the invention. *Id.* at 1312–13. The ordinary meaning of a claim term is its meaning to one of skill in the art after reading the entire patent. *Id.* at 1321. The patent specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

In addition to the specification, a court "should also consider the patent's prosecution history, if it is in evidence." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996). The prosecution history, which is intrinsic evidence, is "the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent." *Phillips*, 415 F.3d at 1317. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* "[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." *Id.*

In some situations, a "court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331 (2015). Extrinsic evidence is "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Markman*, 52 F.3d at 980. While expert testimony can be useful "to ensure that the

[redacted]

court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art," such testimony is "generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." *Phillips*, 415 F.3d at 1318–19. Further, while extrinsic evidence may be useful, it is less reliable than intrinsic evidence, and its consideration "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Id.* Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999), *citing Vitronics*, 90 F.3d at 1583.

B. Previously-Construed Claim Terms

The parties agreed on the following constructions of terms in claim 1, which were adopted:

Claim Term	Agreed Construction
A finder-worn wearable ring device	The preamble is limiting
[positioned/configured to fit] within a cavity	Plain and ordinary meaning, which is [positioned/configured] within a hollow space
[the internal housing component] coupled with [external housing component]	Plain and ordinary meaning, which is [the internal housing component] is connected with [the external housing component]

Order No. 17 at 5.

Following briefing and a hearing, the following terms in claim 1 were construed:

Claim Term	Agreed Construction
an [internal/external] housing component	Plain and ordinary meaning, which is an [internal/external] structure that encloses space and which does not necessarily exclude potting material
circumferential	Plain and ordinary meaning, which does not require a closed shape

Order No. 17 at 14 and 17.

[redacted]

VII. INFRINGEMENT

Oura accuses the RingConn Smart Ring (Gen. 1 and Gen. 2) and the Ultrahuman Ring AIR of infringing claims 1, 2, and 12–14 of the '178 patent. Oura Br. at 22–78.

A. Legal Standard

"[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." 35 U.S.C. § 271(a). "Literal infringement requires the patentee to prove that the accused device contains each limitation of the asserted claim(s). If any claim limitation is absent, there is no literal infringement as a matter of law." *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000).

In a section 337 investigation, the complainant bears the burden of proving infringement of the asserted claims by a preponderance of the evidence. *See Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1349 (Fed. Cir. 2010). This standard "requires proving that infringement was more likely than not to have occurred." *Warner-Lambert Co. v. Teva Pharm. USA, Inc.*, 418 F.3d 1326, 1341 n.15 (Fed. Cir. 2005).

B. "Double-Enclosure" Versus "Single-Enclosure"

Before addressing the specifics of infringement, an overarching question of what respondents contend the claims cover (and what they do not cover) must be addressed. Resp. Reply at 11–21. In particular, respondents attempt to distinguish disclosed embodiments by calling some "double-enclosure/cavity-between" and others "single-enclosure/no-cavity-between." *Id.* at 11–16. Respondents contend that the asserted claims "cover only the double-enclosure/cavity-between embodiments" and do not cover the "single-enclosure/no-cavity-between embodiments." *Id.* (emphasis removed). Respondents' attempt to draw distinctions between various of the disclosed

[redacted]

embodiments is not supported by the specification. Simply: the specification does not state (imply or infer) that there are "double-enclosure" and "single-enclosure" embodiments.

By a so-called "double-enclosure/cavity-between embodiment," respondents refer to Fig. 15B, which they contend "depicts a double-enclosure/cavity-between embodiment where the battery is specifically shaped and sized to fit within the cavity." Resp. Reply at 11–12. Respondents misleadingly annotate Fig. 15B with the word "cavity," thus implying that that embodiment is meaningfully different from the others with respect to how it encloses components. *Id.* at 12. It is not. Fig. 15B is reproduced below:

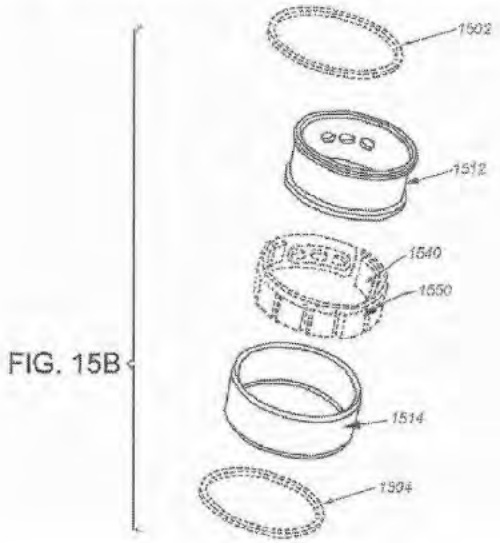


FIG. 15B

'178 patent at Fig. 15B. Fig. 15B is "an exploded view of the WCD 1500" with "a housing 1510 that includes an internal housing 1512 and an external housing 1514." *Id.* at 20:29–31. "Once the housings 1512-1514 are assembled and the PCB 1540 and components 1550 are assembled within space defined between the housings 1512-414, potting layers 1502 and 1504 can be applied to seal the WCD at both sides thereof to ensure a secure seal." *Id.* at 20:42–49. The patent does not specifically show the space between housings 1512 and 1514.

The specification also describes Fig. 12D, which is shown below:

[redacted]

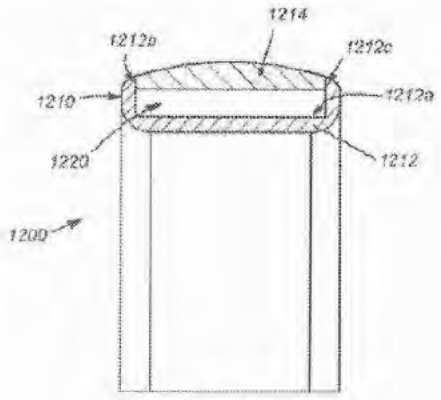


FIG. 12D

Fig. 12D depicts an "overall housing 1210 that includes an internal housing 1212 and an external potting or encapsulant 1214." '178 patent at 17:19–22. The internal housing 1212 and external potting 1214 can be made of any material and "provide a housing for one or more electronic components stored within the housing 1210 of the WCD 1200." *Id.* at 17:23–40. The external potting 1214 is thus specifically identifies as part of the housing 1210.

The internal housing 1212 can have a u-shaped internal surface 1212*a* to accommodate one or more internal components. The external potting 1214 can "provide an internal space 1220 to accommodate one or more components." *Id.* at 18:10–18. The respondents agree that Fig. 12D shows an embodiment in which "potting is used as a housing component." Resp. Reply at 16, n.1 ("the '178 Patent arguably shows embodiments where potting is used as a housing components in Figs. 12D, 14E, 20A, and 31B-C."). The specification explains that "[b]y virtue of the external potting 1214, the internal space 1220 defined by the internal surface 1212*a* and the external potting 1214 can be hermetically sealed." *Id.* at 18:10–18. Thus, like the embodiment in Fig. 15D, the embodiment in Fig. 12D includes a space (called internal space 1220) between the internal housing 1212 and the external potting 1214. And like the embodiment of Fig. 15D, the internal housing 1212 and the external potting 1214 make up the overall housing 1210.

[redacted]

The specification also explains that "[a]lthough not depicted, the internal components can reside within the internal space 1220, and the external potting 1214 can be disposed immediately atop the components to provide a seal." *Id.* at 18:23–27. The specification is therefore clear that the external potting 1214 can be disposed on the components and seal them within the internal space 1220 between the internal housing 1212 and external potting 1214. Dr. Sarrafzadeh's testimony on this point was credible. In particular, he explained that the embodiment in Fig. 12D does not show the components that fill space 1220 when external potting 1214 is used. Nonetheless, the disclosure is clear that space 1220 is filled with components such as the battery and printed circuit board. Sarrafzadeh Tr. at 454:3–8.

The patent shows another embodiment in Fig. 13 in which the "WCD 1300 includes a housing 1310 that includes an external housing 1312 and an internal potting or encapsulant 1314," as shown below:

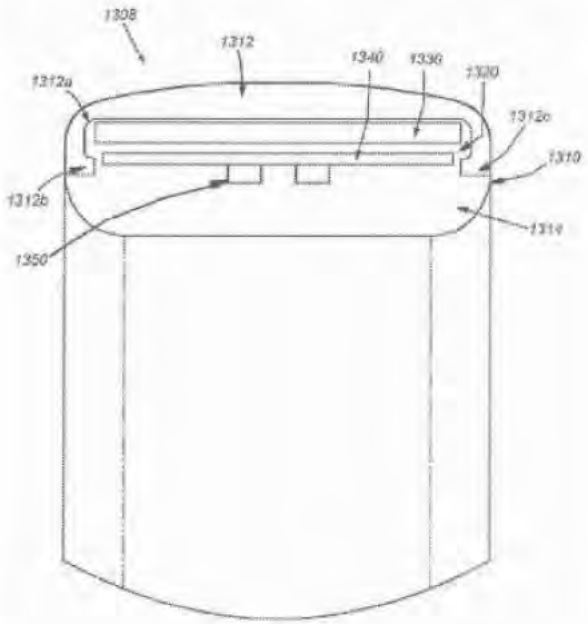


FIG. 13

'178 patent at Fig. 13 and 18:63–67.

[redacted]

Respondents contend Fig. 13 is an example of their so-called "single-enclosure/no-cavity-between embodiment" that is not covered by the asserted claims. Resp. Reply at 14–16. Respondents contend that the Fig. 13 embodiment does not have two housing components and that only external housing 1312 is part of the housing. Resp. Reply at 15–16. This, however, directly contradicts the specification, which states that the housing 1310 has two parts: the external housing 1312 and the internal potting or encapsulant 1314, just like housing 1210 in Fig. 12 and housing 1510 in Fig. 15. '178 patent at 18:65–67 ("the WCD 1300 includes a housing 1310 that includes an external housing 1312 and an internal potting or encapsulant 1314").

The patent explains the similarity of Fig. 13 to Fig. 12, stating that "the external housing 1312 can be formed of the same materials as the internal housing 1212" and "the internal potting 1314 can be formed of the same materials as the external potting 1214." *Id.* at 19:16–20. In Fig. 13, the external housing 1312 has an internal surface 1312*a* with a c-shaped cross section and flanges 1312*b*-*c*. The cross section and flanges "define a partially enclosed internal space 1320." "In an assembled state, the WCD 1300 can include a battery 1330, a PCB 1340, and components 1350, which can be at least partially or completely disposed within the partially enclosed internal space 1320. The internal potting 1314 can extend between the flanges 1312*b*-*c* and can seal the partially enclosed internal space 1320." *Id.* at 19:7–12.

Respondents highlight that the specification describes space 1320 as "partially enclosed" and contend that this means that there is "only a single housing structure that performs the 'partial[] enclose[ing]' function." Resp. Reply at 15. Respondents misread the specification, which, as already noted, specifically states that internal potting or encapsulant 1314 is part of housing 1310. Respondents' discussion is also incomplete because the specification further states that the "components can be encapsulated by the internal potting 1314." This, in fact, is what is shown in

[redacted]

Fig. 13. Thus, while the external housing 1312, with its c-shaped cross section and flanges 1312*b* and 1312*c*, "define a partially enclosed internal space 1320," the space 1320 is fully enclosed by potting 1314, which is part of housing 1310. This is similar to Fig. 12D, in which space 1220 would be filled by components (battery and printed circuit board).

The patent discloses another embodiment in Fig. 14, shown below:

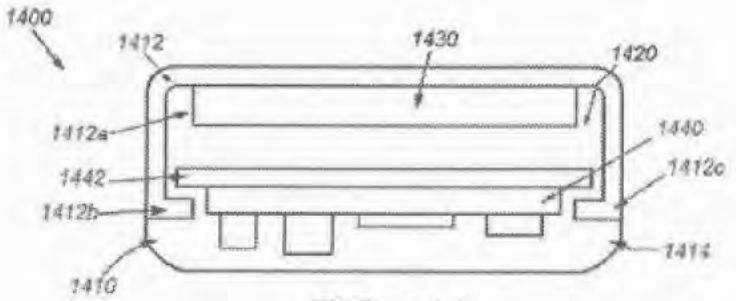


FIG. 14A

'178 patent at Fig. 14A. In Fig. 14, the WCD 1400 includes a housing 1410 with an internal or external housing 1412, an internal or external potting 1414, and an internal space 1420. *Id.* at 19:25–29. Thus, consistent with the embodiments in Figs. 12 and 13, in the embodiment in Fig. 14, one of the components of housing 1410 is potting. As they did with respect to Fig. 12D, respondents acknowledge that "potting [material] is used as a housing component in Figure[] 14E." Resp. Reply at 16 n.1. And like the embodiments in Figs. 12 and 13, within internal space 1420 are battery 1430, a flexible circuit 1440, and one or more components 1450. *Id.* at 19:30–31. And like the embodiments in Figs. 12 and 13, as shown in Figure 14A, potting material 1414 encloses the internal space 1420 of the assembled ring.

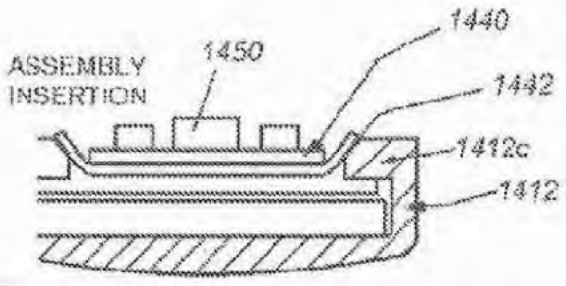
The specification is clear about the similarities between the various embodiments, stating that the embodiment of Fig. 14 "is similar to the examples described above with respect to Figs. 12 and 13, except the addition of a stiffener element 1442 and the flanges 1412*b*-*c* extend further into

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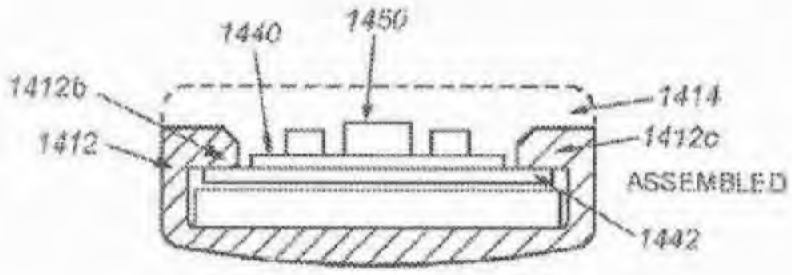
[redacted]

the space 1420 toward one another such that the flanges 1412*b*-*c* overlap with the stiffener element 1442." *Id*. at 19:31–36.

Fig. 14D, below, shows a cross section of the ring during assembly "when the PCB 1440 is inserted into the internal space 1420 and prior to application of potting 1414."



Id. at 20:4–7 and Fig. 14D. As shown in Fig. 14E, below, the final step of assembling the ring is applying potting 1414 to enclose space 1420 (though space 1420 is not labeled in Fig. 14E).



Id. at 20:24–26 and Fig. 14E.

As the above discussion makes clear, the specification does not disclose embodiments as being either double enclosure or single enclosure, as respondents contend. Instead, the specification discloses housings (1210, 1310, 1410, and 1510) with two components (1212 and 1214, 1312 and 1314, 1412 and 1414, and 1512 and 1514). Within the housing is a space (1220, 1320, 1420, and identified but not labeled in Fig. 15). The components of the housing can include potting. When potting is used as a component of the housing, the specification is clear that a space

[redacted]

exists and can be enclosed by potting. Respondents' attempt to distinguish the various embodiments as being either single enclosure or double enclosure, is therefore rejected.

Respondents also contend that the so-called "single-enclosure/no cavity" embodiment of Fig. 13 is not covered by the asserted claims because other patents in the '178 patent family have claims specifically reciting "a potting material disposed in the interior space encapsulating the plurality of components." Resp. Reply at 17. Respondents appear to reason that because of such claims, the '178 patent claims cannot cover a structure in which the internal housing is potting. Respondents' logic is flawed. The fact that claims in other related patents are more specific and *require* a potting material does not necessarily mean that the '178 patent claims *exclude* potting as the internal housing component.[3] And as detailed previously in the claim construction order and above, the specification specifically states that the internal and external housing can be potting material and addresses the "internal space" between the internal and external housing components in the exact same way regardless of whether they are potting material or not. The specification simply does not draw the distinction that respondents insist is there.

C. Credibility Issues

Before addressing the infringement issues, respondents contend that the opinions of Oura's technical expert should be afforded little weight because he allegedly changed his position on the location of the internal housing components in the accused products. Resp. Reply at 21–28. This

[3] Respondents also state that Oura's expert "admitted that the claims do not cover all disclosed embodiments," implying that he agreed with the distinction respondents attempt to draw. Resp. Reply at 16. He did not, instead testifying that "the embodiment related to Fig. 16" is not covered by the claims, presumably because it has "an integral inner wall and outer wall 1612 and 1614" instead of separate internal and external housing components. Sarrafzadeh Tr. at 382:19–24 and '178 patent at 20:51–65 and Fig. 16A.

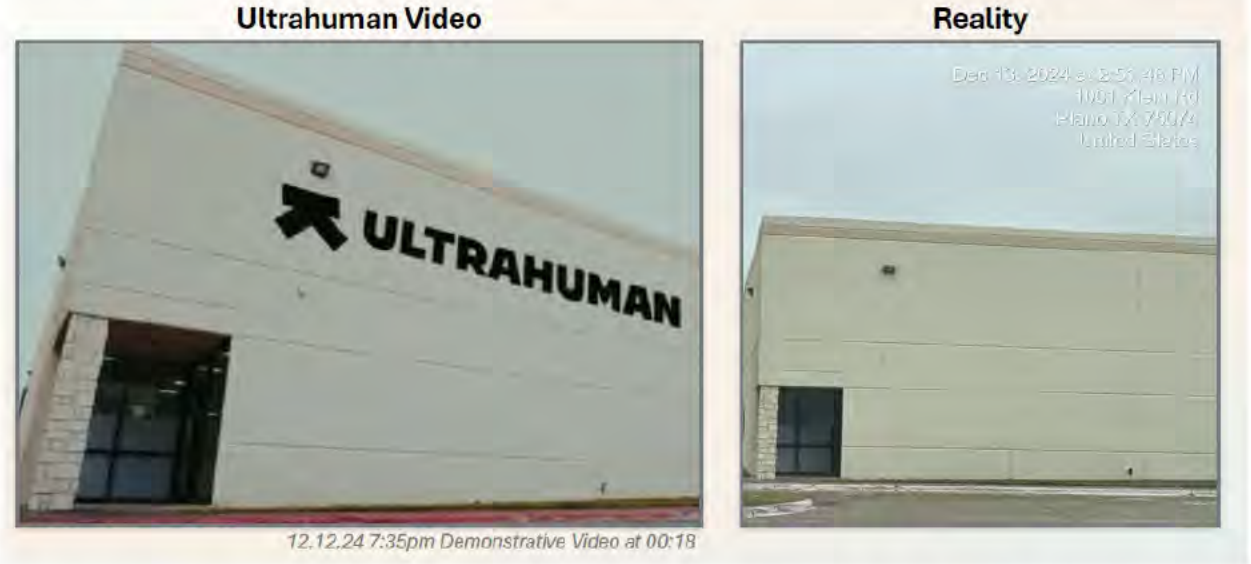
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[redacted]

issue is addressed when considering whether the accused products meet the elements of the asserted claims.

A concerning issue regarding Ultrahuman's credibility, however, needs to be addressed up front. At the evidentiary hearing, Oura raised an issue about what it said was "an alteration that was made to Ultrahuman's evidence." Tr. at 890:21–25. This related to testimony that was to be provided by Ultrahuman's CEO, Mr. Kumar, and evidence that was to accompany that testimony, relating to a facility in Texas. Oura objected to slides that were to be presented with Mr. Kumar's testimony relating to the Texas facility. After multiple rounds of objections, Ultrahuman did not use the slides and after hiring a private investigator during trial, Oura confirmed that information about the Texas facility that Ultrahuman would have presented, but for its objections, was false.

In particular, in conjunction with contending that it has a manufacturing facility in Texas, Ultrahuman intended to show, through Mr. Kumar's slides, a building in Plano, Texas,



CDX-0009.0006; *see* CDX-0009.0003–0005 (showing location in Plano, Texas); and Tr. at 893:6–894:13. The reality also is that the building does not house an Ultrahuman facility; it is a facility

[redacted]

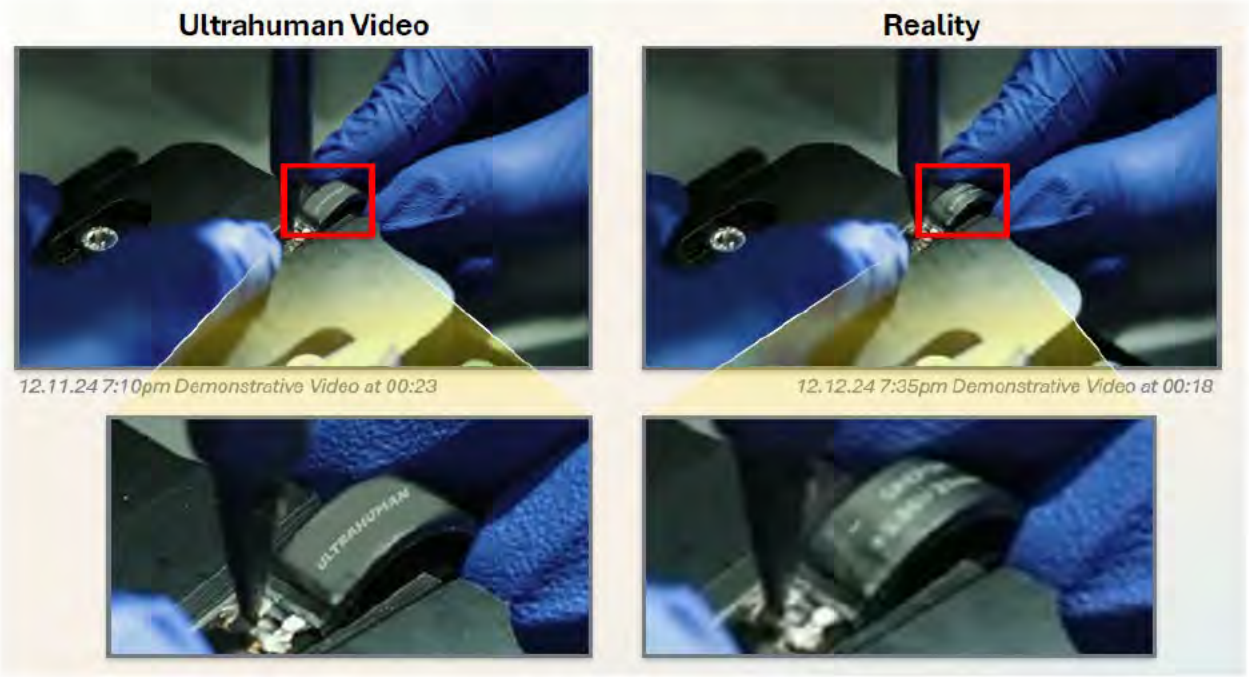
of a third party, SVTronics, which Ultrahuman characterized as its "manufacturing partner." Tr. at 901:11–16.[4]

In addition, in Mr. Kumar's proposed slides, interior signage with Ultrahuman's logo was fabricated to cover the actual signage:



CDX-0009.0008 (Ultrahuman logo on left and actual signage on right).

And markings on parts were fabricated to indicate they were Ultrahuman parts:



[4] Given Ultrahuman's lack of truthfulness on the Texas facility and the lack of evidence regarding Ultrahuman's so-called "manufacturing partner," the evidence supports that the Texas facility is owned and run by an entity not a party to this investigation.

[redacted]

CDX-0009.0011 (left, showing fabricated Ultrahuman marking, and right, showing actual markings) and Tr. at 894:14–895:7.

Ultrahuman also intended to use what was called a "physical demonstrative" of "an Ultrahuman ring that was supposedly manufactured in the U.S. with a prominent U.S. flag and a made in U.S.A. reference," as shown below:



CDX-0009.0014 and Tr. at 895:23–896:3.

Confronted with Oura's objections, Ultrahuman revised Mr. Kumar's slides multiple times and ultimately did not present the slides shown above. Undeterred, however, Mr. Kumar, who unquestionably knew that any evidence regarding an Ultrahuman facility in Texas was false, repeatedly testified about it anyway. He testified that in August 2024, Ultrahuman had two manufacturing facilities, one in India and one in Texas at which it was testing prototypes. Kumar Tr. at 701:4–702:17. He testified that "back then" (four months before, in August 2024), Ultrahuman was not manufacturing commercial versions of its accused products at the Texas facility but that it was "testing out manufacturing" at that facility. *Id.* at 702:18–703:12. He testified (in December 2024) that the Texas "factory being functional" was announced in October or November 2024. *Id.* at 715:11–15. And when asked about U.S.-based repairs of Ultrahuman

[redacted]

accused products, he testified that "with the Texas facility, we have started offering more options." *Id*. at 728:14–17.

The falsity of information was not limited to Mr. Kumar, as Oura pointed out. Tr. at 896:4–25. In its prehearing brief, Ultrahuman stated: "Ultrahuman also has manufacturing facilities in Texas, which will soon manufacture all of its ring products for the US market." Resp. Prehearing Br. at 14. This assertion was said to be supported by the testimony of Mr. Kumar, who testified that he is responsible for oversight of day-to-day operations of the company. Kumar Tr. at 623:16–23. In the cited testimony, Mr. Kumar stated that Ultrahuman has a facility in Texas and that Ultrahuman was testing its manufacturing lines and machines at that facility. CX-1386C (Kumar Dep.) at 67:14–69:15; *see also id.* at 70:20–21 (explaining why Ultrahuman "started the factory in the U.S."). [5] Based on the information uncovered by the private investigator Oura hired during trial, these statements in Ultrahuman's pre-hearing brief and the underlying testimony of Mr. Kumar were false.

In its motion in limine no. 3, Ultrahuman stated that "Oura recognizes that Ultrahuman will stop importing the accused device after the Texas facility becomes operational in 2025, divesting the Commission of jurisdiction and nullifying the exclusion order Oura seeks." MIL No. 3 at 5. (EDIS Doc. ID 837615). See also *id*. at 6 (Ultrahuman referring to "its U.S. manufacturing facility") and 8 (Ultrahuman referring to "its domestic manufacturing facility"). Ultrahuman's statements, like those in its prehearing brief and like the deposition testimony of Mr. Kumar regarding a facility in Texas, were false.

[5] Ultrahuman cited JX-11C in its prehearing brief. Prehearing Br. at 14. JX-11 is the claim construction order. Mr. Kumar's deposition testimony was admitted into evidence as CX-1386C.

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[redacted]

When asked at the hearing to explain what happened, counsel for Ultrahuman stated, "we're not arguing about something that came into evidence." Tr. at 900:2–7. The only reason that was so, however, was because of Oura's objections and dogged determination to determine the truth. And instead of forthrightly addressing the problem and, perhaps, thanking Oura's counsel for preventing it from eliciting expressly false testimony at the evidentiary hearing, Ultrahuman's counsel placed the blame squarely on his client: "But what is changed in that video was changed by the Marketing Department at Ultrahuman as part of pre-production to make a commercial. Nothing to do with changing evidence for here, as has been implied there. That was the commercial that we received and the footage we received." Tr. at 900:20–25 and see *id*. at 900:13–17 (stating that the alterations were made "in the ordinary course of business by [Ultrahuman's] Marketing Department to make a commercial").

Ultrahuman's counsel complained that when Oura "still objected" to Mr. Kumar's proposed demonstratives, "we agreed to not put it into evidence . . . we didn't ask a single question about Texas, the Texas facility, because much like Your Honor decided in MIL 3 order, we believe that's an issue for a later date." Tr. at 902:20–24. While it is true that Ultrahuman's counsel did not affirmatively elicit testimony from Mr. Kumar about a Texas facility, they did nothing to correct the testimony Mr. Kumar offered on cross-examination, meant to suggest that Ultrahuman has a facility in Texas when it does not. And they did nothing to correct what they stated in their pre-hearing brief or in their motion in limine no. 3.

At the evidentiary hearing, I posited to Ultrahuman's counsel that "but for the objection by Oura to the various versions of what you call the pre-production commercial, that that would have been submitted -- that would have been part of Mr. Kumar's testimony." Tr. at 904:23–905:2. In response, counsel stated that the "video was actually only being offered to introduce our production

[redacted]

line. *He was not going to testify about Texas.*" *Id.* at 905:3–5. That is not credible; one of the slides Ultrahuman intended to present specifically identified the "Ultrafactory," "Now in Plano, Texas":



CDX-0009.001.

Ultrahuman's counsel also stated that the video that was to accompany Mr. Kumar's testimony "was only coming in as a demonstrative." Tr. at 905:14–15. This is concerning. It certainly cannot be that the presentation of false information can be excused because it is presented as a "demonstrative."

Counsel for Oura presented this issue in the context of a precursor to a potential motion for sanctions. Tr. at 897:18–899:12. In a communication on January 16, 2025, counsel for Oura advised my office that "Oura and Ultrahuman have resolved their dispute regarding Oura's threatened motion about the Ultrahuman video demonstrative" and that no motion for sanctions would be filed. Even so, this issue must be addressed because it impacts at least the credibility of Ultrahuman's witness, Mr. Kumar. In a recent analogous situation, but in which a motion for sanctions was filed, an attorney presented a doctored document to a witness during a deposition. The Special Master, in granting a motion for sanctions, stated that "[t]here is no reason why [counsel] should have thought that eliciting testimony based on an altered document was appropriate." *Cognipower v. Samsung*, Case No. 2:23-cv-00160, ECF No. 337 at 2 (E.D. Tex.

[redacted]

3/18/2025). Here, there is no reason why Ultrahuman's counsel or its CEO, Mr. Kumar, should have thought that providing testimony based on an altered video was appropriate. Based on the entirety of the above-detailed conduct, I find that Mr. Kumar was not a credible witness. In addition, to the extent the existence of an Ultrahuman U.S. facility is raised later, as its counsel suggested it should be, that issue should be considered in light of Ultrahuman's conduct at the evidentiary hearing and its statements in its pre-hearing brief and motion in limine.

D. Claim 1

1. Element 1[pre]

Element 1[pre] recites "[a] finger-worn wearable ring device, comprising . . ." The parties agree that the preamble is limiting, and it was construed to require that the device is a finger-worn wearable ring device. Joint Chart at 1 (EDIS Doc. ID 826476) and Order No. 17 at 5.

Oura contends this element is met. Oura Br. at 22–24. The Staff agrees. Staff Br. at 17–18. Respondents do not dispute that this element is met. Resp. Reply at 28–110.

The evidence supports that the RingConn Smart Ring and the Ultrahuman Ring AIR are finger-worn wearable ring devices. Sarrafzadeh Tr. at 260:12–261:8; CX-0405; CX-0694.0009; CX-0375; CX-0538; and CX-0693.0006. The evidence supports that the RingConn and Ultrahuman accused products meet element 1[pre].

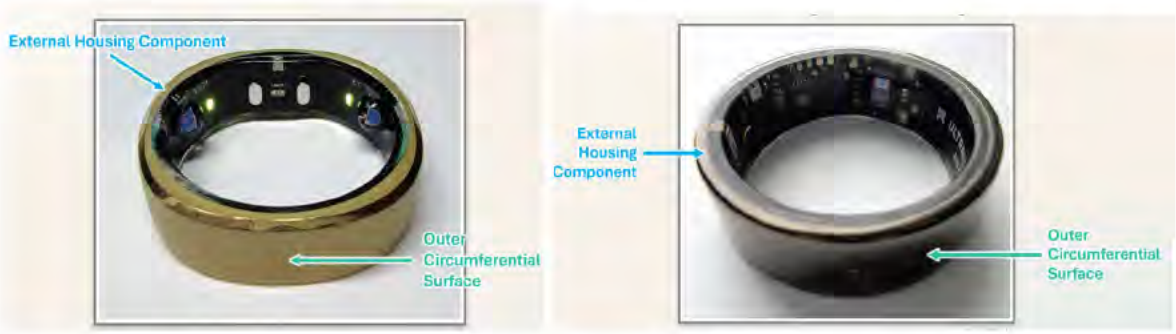
2. Element 1[a]

Element 1[a] recites "an external housing component defining an outer circumferential surface of the finger-worn wearable ring device." Oura contends this element is met. Oura Br. at 25–27. The Staff agrees. Staff Br. at 18–19. Respondents do not dispute that this element is met. Resp. Reply at 28–110. The "external housing component" was construed as "an external structure that encloses space and which does not necessarily exclude potting material." Order No. 17 at 14.

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[redacted]

The evidence supports that the RingConn and Ultrahuman rings each include a metal outer structure defining g an outer circumferential surface of the finger-worn wearable ring device. Sarrafzadeh Tr. at 263:7–13 (RingConn) and 268:22–269:22 (Ultrahuman); CX-0403 (RingConn); CX-0405 (RingConn); CX-0406 (RingConn); CX-0647C.0001 (RingConn); CX-0314 (Ultrahuman); CX-0375 (Ultrahuman); and CX-0537.1 (Ultrahuman). Both are shown below:



CDX-0003C.34, *annotating* CX-0403 (RingConn), and .37, *annotating* CX-0314 (Ultrahuman). As shown, the metal outer structures in each of the RingConn and Ultrahuman rings are an external structure that encloses space. The spaces that are enclosed by each of the external housing components include components of the ring.

The evidence supports that the RingConn and Ultrahuman accused products meet element 1[a].

3. Element 1[b-i]

Element 1[b-i] recites "an internal housing component defining an inner circumferential surface of the finger-worn wearable ring device." Oura contends this element is met. Oura Br. at 28–34. The Staff agrees. Staff Br. at 19–21. Respondents dispute that this element is met. Resp. Reply at 59–78. The term "internal housing component" was construed as "an internal structure that encloses space and which does not necessarily exclude potting material." Order No. 17 at 14.

Respondents argue that their accused products do not have an internal housing component because only their external housing component "encloses space." Resp. Reply at 69–71 (arguing

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[redacted]

that the potting material in the accused products fills space, rather than enclosing it). Respondents essentially argue that the accused products lack an internal housing component because Oura identifies potting material alone as the internal housing component, and potting material, standing alone, cannot enclose space. *See id.* In making this argument, Respondents contend that the accused products are single-enclosure structures, not double-enclosure structures, the former of which they contend are not covered by the claims. *Id.* at 69. But, as explained in detail above, the specification does not make the distinction respondents urge.

Further, the specification is clear and consistent that when a housing component is a potting material, it encloses space. The specification describes enclosing space with a potting material as sealing an internal space. '178 patent at 2:16–21 ("an external housing portion configured to seal the at least one component and the printed circuit board in an internal space defined by the interior surface of the internal housing. In one example, the external housing portion comprises a substantially transparent external potting") and 2:40–43 ("an internal housing portion configured to seal the at least one component and the printed circuit board in an internal space defined by the interior surface of the external housing. In one example, the internal housing portion comprises a substantially transparent internal potting"). The Abstract is consistent, stating that "a potting material [is] disposed in the interior, forming an interior wall of the smart ring, wherein the potting material encapsulates the components."

As to the embodiment shown in Fig. 12D, the specification states that "the internal space 1220 defined by the internal surface 1212*a* and the external potting 1214 can be hermetically sealed, thereby preventing debris, dust, moisture, or any other unwanted fluids or materials from interacting with the internal components of the WCD 1200." *Id.* at 18:10–27. As to the embodiment shown in Fig. 13, the specification states that "[t]he internal potting 1314 can extend between the

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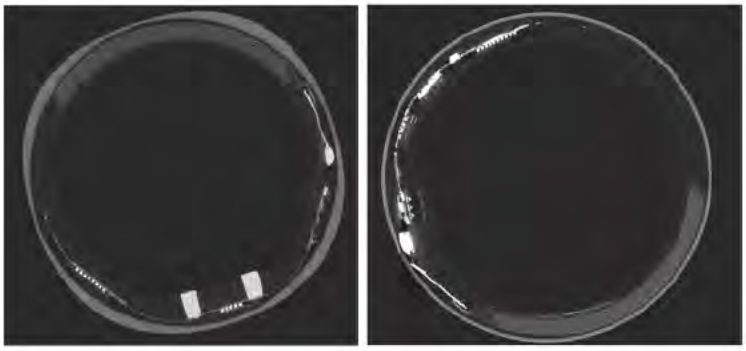
flanges 1312*b-c* and can seal the partially enclosed internal space 1320. The components can be encapsulated by the internal potting 1314." *Id.* at 19:3–16. The specification is consistent and unambiguous that a housing component made of potting can enclose an internal space. Respondents' arguments to the contrary is rejected.

The evidence supports that each of the RingConn and Ultrahuman rings includes an internal housing component in the form of a potting material, which, like the embodiments disclosed in the patent, encloses space, including that occupied by the battery and the PCB, as shown below:



CX-0406 (RingConn) CX-0314 (Ultrahuman)

CT scans also show the internal housing component encloses the space taken up by the battery, the PCB, and the other internal components:



CX-0065 (RingConn) CX-0056 (Ultrahuman)

RingConn's depictions of its product show an internal housing component that encloses space and defines an inner circumferential surface of the finger-worn wearable ring device, as shown below:

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[redacted]



Sarrafzadeh Tr. at 272:9–23 ("CX-0567[] shows the . . . internal housing component . . . and the inner circumferential surface.").

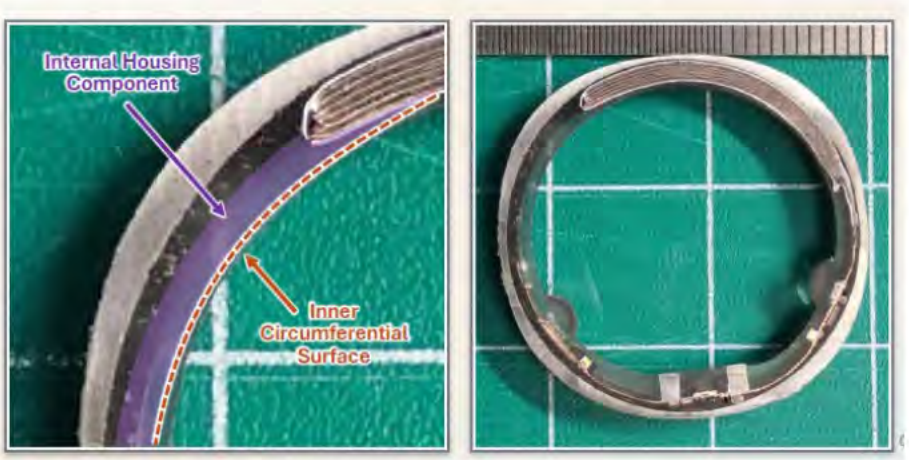
Ultrahuman similarly depicts its ring as including an inner shell that encloses the space filled by the PCB and the battery, and defines the inner circumferential surface of the ring:



Sarrafzadeh Tr. at 279:1–15; CX-0537.0001 (Ultrahuman); *see also* Sarrafzadeh Tr. at 277:13–278:3.

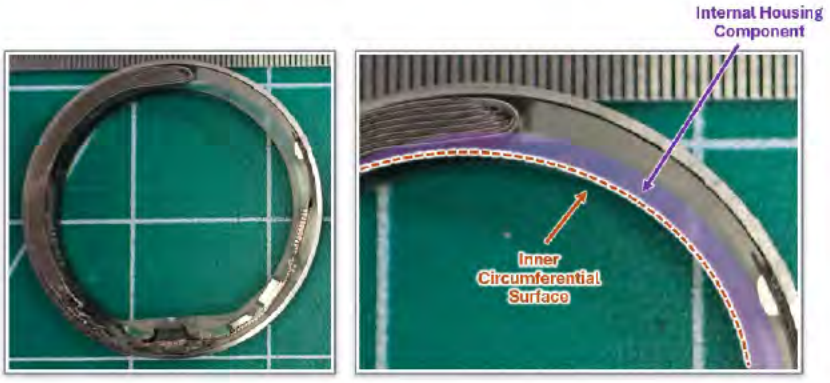
Product tear-downs also support that in the RingConn accused products, there is a potting material that extends along the inner circumferential surface of the ring, which Oura identifies as the internal housing component, shown in purple below:

[redacted]



CDX-0003C.46, *annotating* CX-1040; Sarrafzadeh Tr. at 272:24–274:22 (transparent portion in the image to the right is the internal housing component). The internal housing component in the RingConn ring has an inner circumferential surface that when worn, touches the skin of the user. *See* CPX-0198.

Similarly, the evidence supports that in the accused Ultrahuman ring, there is a potting material that extends along the inner circumferential surface of the ring, which Oura identifies as the internal housing component, shown in purple below:



CDX-0003C.49, *annotating* CX-1069 and Sarrafzadeh Tr. at 277:13–278:25. The internal housing component in the Ultrahuman ring has an inner circumferential surface that when worn, touches the skin of the user. *See* CPX-0199.

[redacted]

The evidence supports that the RingConn and Ultrahuman accused products have the claimed internal housing component. I also agree with the Staff that the evidence supports that both the RingConn and Ultrahuman have a battery, PCB, sensors, and other components that are within the internal and external housing components. CX-0403 (RingConn) and CX-0314 (Ultrahuman). Logically, those components take up space within the structure formed by the internal and external housing components. It makes no difference that the potting material conforms to the internal components – those components are indisputably physical objects and thus, by definition, have weight and take up space. *See id.* And the space taken up by those internal components is the space enclosed by the internal and external housing components.

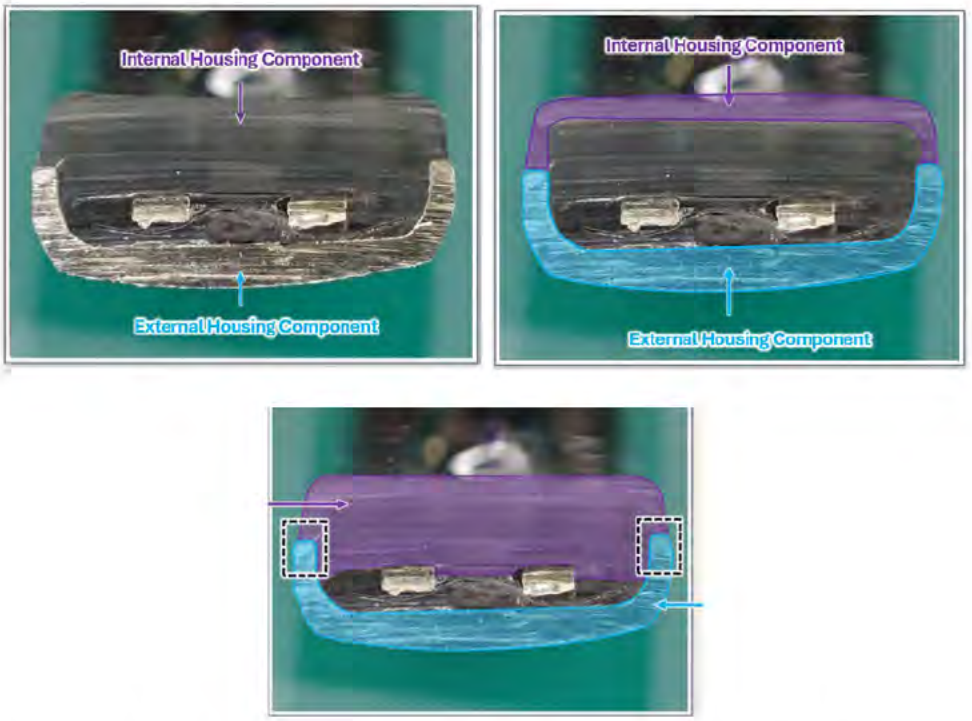
Respondents expend a lot of energy and space in their post-hearing briefing attempting to show that Dr. Sarrafzadeh was not credible. Those allegations are addressed here.

Respondents contend that the accused products do not have an internal housing component because Dr. Sarrafzadeh changed how he identified the claimed internal housing component, which they contend "is compelling evidence that there is none." Resp. Reply at 59–69 and 21–28 (making same argument). In particular, respondents contend that Dr. Sarrafzadeh was not credible because he provided inconsistent testimony and identification as to the internal housing component in the accused products. *Id.*

It is true that different coloring was applied to different images of the accused products, as Oura itself recognizes, examples of which are shown below:

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[redacted]



Oura Br. at 29–31. Respondents provide other similar examples. Resp. Reply at 59–69 and 21–28. As shown above, Oura variously identified the internal housing component as the entirety (above, center) or a sliver (above, right) of the potting material on the interior surface of the RingConn and Ultrahuman accused products.

I disagree that these different identifications mean that Dr. Sarrafzadeh was not credible. As he explained, either of the images above with the purple highlighting can be used for an infringement analysis. Sarrafzadeh Tr. at 374:11–14. The question is whether the potting material in the accused products is an internal housing component. The evidence supports that whether the entirety of the potting material or a smaller portion is considered, the potting material is an internal structure that encloses space.

Respondents also contend that Dr. Sarrafzadeh's hearing testimony on the internal housing component was unreliable because it is inconsistent with opinions in his expert report. Resp. Reply at 59–69. Respondents specifically contend that Dr. Sarrafzadeh's hearing testimony was

[redacted]

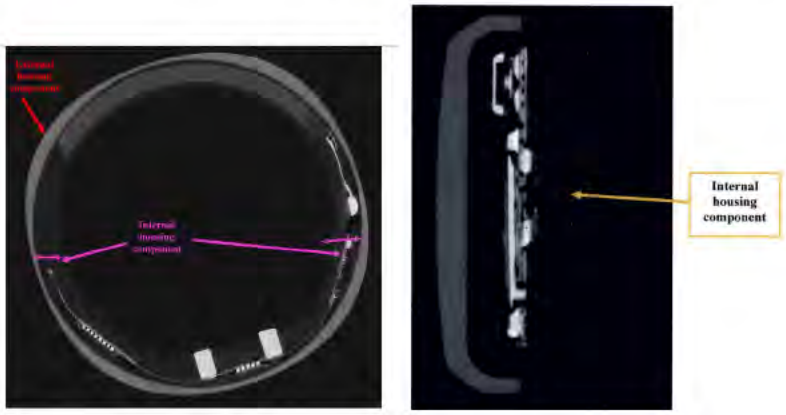
inconsistent with his statement "in his expert report that 'the internal molded structure encloses space surrounding the battery, PCB and other components and thus satisfies the "internal housing component" limitation.'" Resp. Reply at 61, *quoting* RX-0402C.0057 (emphasis removed). This statement is not inconsistent with Oura's definition of the internal housing component, *see* Oura Br. at 29 ("The internal housing component is the layer of potting material that covers the battery and PCB, forms a seal with the external housing component, and defines the inner circumferential surface of the ring." (RingConn)), 32–33 (same for Ultrahuman), and does not conflict with Dr. Sarrafzadeh's testimony, *see* Sarrafzadeh Tr. at 272:24–274:22, and 277:13–278:3. While respondents insist that Dr. Sarrafzadeh's statements require that the "internal molded structure" encapsulate the battery, he explained at the hearing that the internal housing component – i.e., at least a portion of the solidified epoxy resin – encloses space surrounding the battery, PCB, and other components. *See* Sarrafzadeh Tr. at 442:25–443:6 ("[The] internal housing component closes the space, i.e., encapsulates anything around it. If you have an empty can, that there are things in it, when you put the cap of the can, you can say the cap encapsulates everything that is inside it. With that meaning, yes, internal housing component encapsulates the components that are inside."). Respondents have not identified any specific testimony of Dr. Sarrafzadeh that conflicts with his expert report. Dr. Sarrafzadeh's testimony at the hearing may have "reasonabl[y] synthesi[zed]" or "elaborate[ed]" on the opinions contained in his expert report, but respondents have not identified any specific testimony of Dr. Sarrafzadeh that falls outside the scope of his previously-expressed opinions. *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 585 F. Supp. 2d 568, 581 (D. Del. 2008).

Respondents also make much of Dr. Sarrafzadeh's reference to Fig. 13 of the '178 patent in support of their argument that his expert report limited the internal housing component to the

[redacted]

structure shown there. Resp. Reply at 62. The portion of the report respondents reference, however, is from a background and states that Fig. 13 is "one embodiment." RX-0402C.017. Respondents have not shown that Oura or Dr. Sarrafzadeh limited their contentions regarding the internal housing component to the embodiment of Fig. 13.

Respondents also contend that "Oura and [Dr.] Sarrafzadeh materially changed what they alleged as the [internal housing component] to avoid summary judgment of non-infringement." Resp. Reply at 64; *see also id.* at 65 ("Oura and its expert [Dr.] Sarrafzadeh materially changed what they alleged as the [internal housing component] after Respondents filed their MSD."). As support, respondents compare the following image from Oura's infringement contentions (on the left) to a drawing Dr. Sarrafzadeh created at his deposition (on the right). *See id.* at 64 and 65.



RX-0225C.0025 and RX-0402C.0066.

As Dr. Sarrafzadeh explained, however, the images are two different cross-sections from different perspectives. Sarrafzadeh Tr. at 364:4–13. Respondents protest that "Oura's and its expert's assertions regarding the [internal housing component] have been a moving target throughout this investigation." Resp. Reply at 66–69. The evidence supports, however, that Oura has consistently contended that the accused products include an internal housing component that: (1) defines an inner circumferential surface of the finger-worn wearable ring device, (2) is coupled

[redacted]

with the external housing component, and (3) includes at least a portion that is configured to contact a tissue of a user when the finger-worn wearable ring device is being worn by the user. *Compare, e.g.*, RX-0225C.0016–0029 *with* Oura Br. at 28–31, 34–35, 36–37.

Respondents further argue that Oura's highlighting of a portion of the potting material is inconsistent with its position at the PTAB that a portion of a unitary structure cannot be an internal or external housing component. Before the PTAB, however, Oura argued that prior art with a unitary ring structure does not show separate internal and external housing components coupled to one another. RX-0123.60–61. Oura's PTAB argument does not show any inconsistent position.

The evidence supports that the RingConn and Ultrahuman accused products meet the requirements of claim 1[b-i].

4. Element 1[b-ii]

Element 1[b-ii] recites "the internal housing component coupled with the external housing component." Oura contends this element is met. Oura Br. at 34–36. The Staff agrees. Staff Br. at 21–23. Respondents do not dispute that this element is met, other than to the extent they contend the accused products do not have an internal housing component. Resp. Reply at 28–110.

The evidence supports that the RingConn and Ultrahuman accused products include an internal housing component coupled with an external housing component. Sarrafzadeh Tr. at 281:14–283:13; CX-1035 (RingConn); CX-0406 (RingConn); CX-1088 (Ultrahuman); and CX-0314. Both are shown below:



[redacted]

CDX-0003C.58, *annotating* CX-1035 (RingConn).



CDX-0003C.61, *annotating* CX-1088 (Ultrahuman).

The evidence supports that the RingConn and Ultrahuman accused products meet element 1[b-ii].

5. Element 1[b-iii]

Elements 1[b-iii] recites "wherein at least a portion of the inner circumferential surface of the internal housing component is configured to contact a tissue of a user when the finger-worn wearable ring device is being worn by the user." Oura contends this element is met. Oura Br. at 36–37. The Staff agrees. Staff Br. at 23–24. Respondents do not dispute that this element is met, other than to the extent they contend the accused products lack an internal housing component. Resp. Reply at 28–110.

The evidence supports that at least a portion of the inner circumferential surface of the internal housing component of each of the RingConn and Ultrahuman accused products is configured to contact a tissue of a user when the finger-worn wearable ring device is being worn by the user. Sarrafzadeh Tr. at 303:11–304:24, as shown below:

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[redacted]



CX-0703 (RingConn) CX-0671 at 0:53 (Ultrahuman)

The evidence supports that the RingConn and Ultrahuman accused products meet element 1[b-iii].

6. Element 1[c-i]

Element 1[c-i] recites "a battery positioned within a cavity formed between the internal housing component and the external housing component." Oura contends this element is met. Oura Br. at 38–46. The Staff agrees. Staff Br. at 24–28. Respondents dispute that this element is met. Resp. Reply at 29–59. "Positioned within a cavity" was construed to have its plain and ordinary meaning, which is "positioned within a hollow space." Order No. 17 at 5.

Respondents make two arguments: (1) there is no cavity in the accused rings, Resp. Reply at 29–47; and (2) if there is a cavity, it is not between the internal housing component and the external housing component, Resp. Reply at 78–103.

a. Positioned Within a Cavity

Respondents contend that the accused products do not have a cavity because they "are completely solid." Resp. Reply at 29. According to respondents, Oura improperly reads the word "hollow" out of the agreed construction of "within a cavity" as "within a hollow space," Order No. 17 at 5 because Oura argues that the cavity is just space taken up by the battery (and the PCB). *Id.* at 30–33.

[redacted]

Respondents argue that Oura's position is irreconcilable with the claim language, which recites a cavity, and the accused products never include such a cavity absent the presence of the battery (and the PCB). *See id.* at 33–36. Rather, according to respondents, the battery and the PCB are placed on the external housing component during assembly, and potting material is poured over the internal components so there is never a cavity independent of the space taken up by the battery and the PCB. *See id.*

Claim 1 is an apparatus claim and does not require a specific method of manufacture.[6] It recites "a battery positioned within a cavity formed between the internal housing component and the external housing component." This language defines where the battery is located and, on its own, does not preclude a space filled by the battery. A space filled by a battery is still a space which, but for the battery, would be hollow. Other claim language requires that "the battery extends through at least a first portion of the cavity" and that a different component, a "printed circuit board," "extends through a second portion of the cavity," "different from the first portion." This language defines the location of the printed circuit board as within the internal and external housing components but in a different place than the battery. Claim 2 recites that the portions of the cavity are non-overlapping and claim 3 recites that they are at least partially overlapping. These claims thus recite the placement of the battery and printed circuit board as within the ring and their positioning relative to each other. Nothing in this language precludes the cavity from being filled.[7]

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[6] As the Staff aptly notes, respondents disavowed any argument that this is a product-by-process claim at the claim construction hearing. Staff Reply at 3, *citing* claim construction Tr. at 17:23–24 (EDIS Doc. ID 829740); *see also* Resp. Br. at 25 ("[T]he claims do not require a specific method of manufacture.").

[7] I note that in common parlance, a cavity can be filled and still be recognized as being a cavity. A tooth is a good example. A tooth still has a cavity even if it is filled.

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[redacted]

Respondents cite Fig. 12D as an example in which "the inventors disclosed actual hollow spaces between housing components in which batteries are positioned and sized and shaped to fit." Resp. Reply at 36, *citing* '178 patent at, *inter alia*, Fig. 12D; *see also* Tr. (respondents' counsel) at 57:8–11 ("right here, Figure 12D, 1214 is potting material. I will give them that. That is a housing component. It encloses space. At least in that figure."). This interpretation of the specification is incorrect. When addressing Fig. 12, the specification states that potting can be disposed on top of the internal components (including the battery and the PCB) that are within the space 1220 to provide a seal. An internal space 1220 (a cavity) is identified even though no empty space may exist after the potting material is poured on the components. '178 patent at 18:24–27. Other embodiments are consistent, disclosing a space, i.e., 1320 and 1420, between the housing components and that may be filled when potting material is poured on the components. *Id*. at 19:10–16 (internal space 1320) and 20:4–23 (space 1420).

The specification thus supports that the claim language does not require a hollow space in the assembled ring. Instead, it discloses that an internal space (the cavity) between the internal housing component and the external housing component may be completely filled by the battery (and the PCB), such that there is no hollow space in the assembled product.

Respondents' interpretation of the claim language as mandating a hollow space in the assembled ring would exclude all embodiments in which potting is used as one of the components of the housing and the potting is applied directly to the components, i.e., Fig. 12, Fig. 13, and Fig. 14. Such an interpretation is "rarely if ever correct." *Vitronics*, 90 F.3d at 1583.

As to the RingConn accused products, the evidence supports that a battery is positioned within a cavity formed between the internal housing component and the external housing component. Videos prepared by RingConn support this, showing assembly of the ring. *See*

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[redacted]

Sarrafzadeh Tr. at 306:17–307:1 ("And when all of this fit together, the external housing component [], the internal housing component [], the battery will go in between the two."). As shown in a RingConn video (including the screenshot below), [redacted]

[redacted]



CX-0034C and Sarrafzadeh Tr. at 308:11–23. [redacted]

[redacted]:



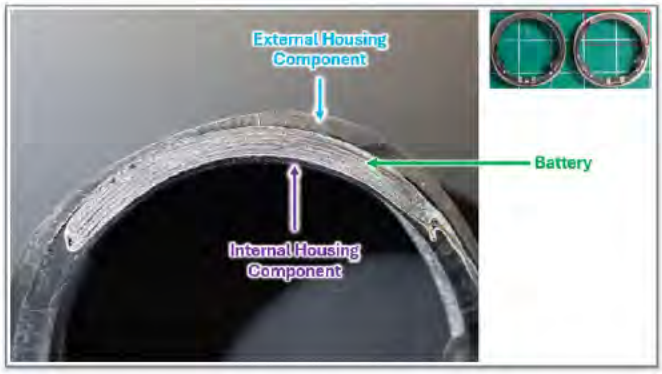
CX-0036C and Sarrafzadeh Tr. at 311:1–25. [redacted]

[redacted] Sarrafzadeh Tr. at 310:10–13; CX-0036C; *see also* CX-0037C.

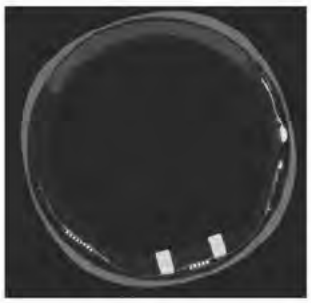
That RingConn's assembly results in a ring with a battery positioned within a cavity between the internal housing component and the external housing is shown below:

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[redacted]



Oura Br. at 43, *annotating* CX-1046. An internal space between the internal and external housing components houses the battery. A CT scan of the RingConn accused product further demonstrates that it includes a battery positioned within a cavity formed between the internal housing components and the external housing components, as shown below:



CX-0065. An engineering schematic, reproduced below also supports that RingConn ring includes an arc-shaped battery placed within the external housing component, which is then sealed by the internal housing component (potting material) (not shown):



CX-0647C. Dr. Sarrafzadeh credibly testified regarding the presence of the battery in the cavity. *See* Sarrafzadeh Tr. at 306:14–315:2.

[redacted]

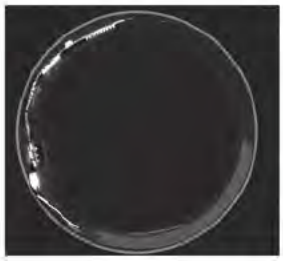
The evidence also supports that Ultrahuman's accused product has an internal housing component, an external housing component, and a battery positioned in a cavity formed between them. Sarrafzadeh Tr. at 315:3–316:19. This is shown in a video of the Ultrahuman ring, screenshots of which are shown below:



CX-0672 at 1:30 (left) and 1:33 (right). This was confirmed by cross-sectional images of the Ultrahuman ring, as shown below:



CDX-0003C.83, *annotating* CX-1088 and Sarrafzadeh Tr. at 316:3–19 (the battery is positioned within a cavity between the internal and external housing components). CT scans of the Ultrahuman product further support the presence of the battery positioned within the cavity, as shown below:



[redacted]

CX-0056. Dr. Sarrafzadeh provided credible testimony supporting that Ultrahuman's battery is positioned within a cavity between the internal and external housing components. Sarrafzadeh Tr. at 315:9–316:16.

In addition, each of Oura, RingConn, and Ultrahuman represent the components of their rings in much the same way. This is shown in the images below:



RingConn (CX-0567)



Ultrahuman (CX-0537)



Oura (CX-0040)

CX-0567.0008 (RingConn) and Sarrafzadeh Tr. at 264:15–20;[8] CX-0537.0002 (Ultrahuman) Sarrafzadeh Tr. at 269:1–17; and CX-0040 (Oura) (screenshot) and Sarrafzadeh Tr. at 270:3–17.

The RingConn and Ultrahuman images shown above support what the other evidence demonstrates: the accused rings have a battery positioned within a cavity formed between the internal and external housing components. Sarrafzadeh Tr. at 306:17–307:1 (RingConn and CX-0567) and 315:3–316:2 (Ultrahuman and CX-0537).

Respondents contend that Oura's reliance on their own documents, CX-0567 (RingConn) and CX-0537 (Ultrahuman) "is misplaced and is intended to distract the ALJ." Resp. Reply at 37–39. Respondents call their documents "artistic renderings" and state that they do not accurately depict the accused products. Id. at 37–38. They cite testimony from RingConn's CEO that CX-

[8] Respondents complain that Oura elevates "artistic renderings" over "product-teardown evidence and schematics." Resp. Reply at 39. CX-0567 and CX-0537 are consistent with other evidence.

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[redacted]

0567 does not "accurately reflect the structure of the RingConn ring." *Id.*, *quoting* Wu Tr. at 759:17–760:19. And they cite testimony of Ultrahuman's CEO that CX-0537 is "100 percent inaccurate." *Id.*, *quoting* Kumar Tr. at 673:15–675:12. At the evidentiary hearing, Mr. Kumar testified that Ultrahuman's depiction of its ring was "just like the moons of Jupiter are also artistic expression."[9] Kumar Tr. at 709:1–3. This testimony is not credible because RingConn and Ultrahuman's respective depictions of their products in CX-0567 and CX-0537 are consistent with other evidence including videos, photos, teardowns, and CT scans, discussed above.[10]

There is substantial evidence beyond CX-0567 and CX-0537 supporting that the accused products meet this claim element, including CT scans, product teardowns, and expert witness testimony demonstrating that the accused products include a battery positioned within a cavity formed between the internal housing component and the external housing component. *See* Oura Br. at 38–46.

Finally, respondents concede that their accused products include a U-shaped external housing component with a "space within the ridge," *id.* at 44, as shown below:



[9] The closest moon of Jupiter is more than 300 million miles from Earth. There is a reason depictions of the moons of Jupiter are artistic expressions.

[10] I also do not credit Mr. Alarcon's testimony that publicly posting confidential design information is not typical because it is beside the point. Resp. Reply at 39, *citing* Alarcon Tr. at 951:1–22. Publicly posting information and then stating it is not accurate is not typical.

[redacted]

Resp. Reply at 44, *annotating* RX-0457.0002 (RingConn) and CX-1089 (Ultrahuman). Nonetheless, they contend that Oura cannot rely on the "space within the ridge" (the portion that forms a U in the above images) as being a cavity. Resp. Reply at 42–47.

Respondents first contend that Oura waived this argument. *Id.* at 45. I disagree. Oura argued in its pre-hearing brief that [redacted] Oura Pre-Hearing Br. at 77, *citing* RX-0325C at 112:18–25 [redacted] *see also id.* at 82–83 (RingConn). I also disagree that the space within the ridge is not a cavity because it is completely filled with potting material. Resp. Reply at 45. As detailed previously, the specification is clear and unambiguous that the space may be filled and still be a space.

Finally, respondents contend their battery and PCB both extend beyond the ridge, such that neither the battery nor the PCB "fit within" it. Resp Reply at 45–47. This is immaterial. Claim 1 recites, "a battery positioned within a cavity formed between the internal housing component and the external housing component, . . . wherein the battery extends through at least a first portion of the cavity, . . . [and] wherein the printed circuit board extends through at least a second portion of the cavity." The claim does not preclude components from extending beyond the external housing component and into the space encapsulated by the potting material. In fact, this is shown in Figs. 14D and 14E:

[redacted]

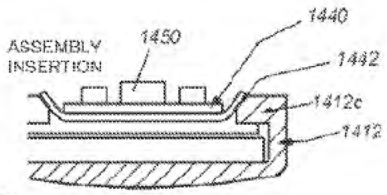


FIG. 14D

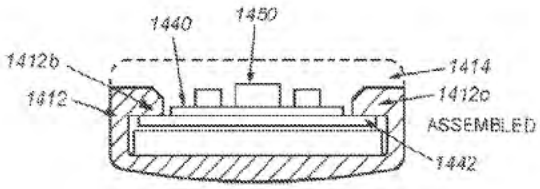
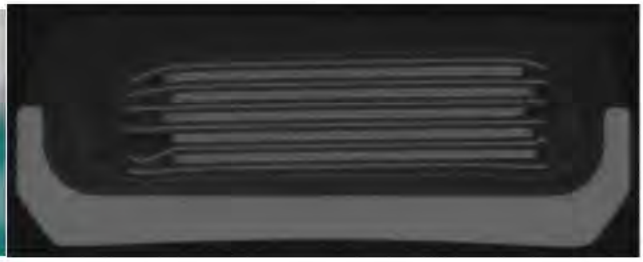


FIG. 14E

This is also the case in the accused products, as shown below.



CX-1088 (Ultrahuman)



CX-0694.0002 (RingConn)

In each of the above images, the battery is shown positioned within a cavity that is formed between an external housing component (on the top in CX-1088 and on the bottom in CX-0694) and an internal housing component (on the bottom in CX-1088 and on the top in CX-0694).

The evidence supports that the accused products have a battery positioned within a cavity that is formed between an internal housing component and an external housing component.

b. "Cavity Formed Between" and "Between"

According to respondents, their potting material surrounds their battery and printed circuit board. They contend this means that the battery is not positioned in a cavity "*formed between* the internal housing component and the external housing component," (element 1[c-i]), that the battery does not have "a shape and size configured to fit within the cavity *between* the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component," (element 1[c-ii]), and that their printed circuit board is not

[redacted]

"disposed *between* the internal housing component and the external housing component," (element 1[d]). Resp. Reply at 81–100.

Oura contends that when assembled, the accused products include a battery positioned within a cavity formed between the internal and external housing components, Oura Br. at 38–46, that the battery fits within a cavity between the internal and external housing components, *id*. at 46–53, and that the printed circuit board is disposed between the internal and external housing components, *id*. at 53–59. The Staff notes that the internal components (such as the [redacted] and the [redacted] are [redacted]. Staff Br. at 27–28, *citing* Sarrafzadeh Tr. at 310:4–313:19, 441:23–444:10, and 444:11–446:15.

Respondents argue that "the PCB [and] battery are [] completely encapsulated in potting material." Resp. Reply at 80. According to respondents, even if glue, tape, or other adhesives separate the battery from the external housing component, the battery is not positioned between the external and internal housing components because these adhesives should be considered "potting material," and therefore as part of the internal housing component. Resp. Reply at 78–100; *see also* Resp. Reply at 103 ("[T]he material around the battery is all potting material, even if some of that material is glue that adheres the components to the ring."). Respondents contend:

> The Staff and Oura's argument that the PCB and Battery are not encapsulated by potting material hinges entirely on the false premise that glue is used to adhere those components to the metal ring rather than potting epoxy. . . . Fatal to Staff's and Oura's argument is that the specification expressly states that "the external potting 1214... can be formed of any material, solid or gelatinous, that can provide resistance to shock and/or vibration and can prevent moisture and/or debris from entering the housing 1210...such as silicone, epoxy, polyester resin or any other polymer. JX-0001.76, 17:35-40. . . . Therefore, even if Staff and Oura are right, the PCB and battery are still fully encapsulated by potting material.

[redacted]

Id. at 79–80 (emphases removed). Respondents argue that Oura and the Staff incorrectly distinguish glue from epoxy in arguing that the battery and the PCB are not encapsulated by potting material. *See id.* According to respondents, any glue present in the accused products forms an integral molded structure with the epoxy, and it is thus immaterial whether any potting material found between the battery and the external housing component originated as glue. *See id.*

The parties did not raise the construction of "formed between" or "between" during claim construction. Nonetheless, because the parties present a fundamental dispute regarding the meaning of "formed between" and "between" in the claim, that issue will be addressed. *O2 Micro, Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008).

The claim language requires an internal housing component that: (1) defines an inner circumferential surface of the ring; (2) is coupled with an external housing component, and (3) has at least a portion of its inner circumferential surface configured to contact a tissue of a user when worn. '178 patent at claim 1. The claim recites in element 1[c-i] "a battery positioned within a cavity *formed between* the internal housing component and the external housing component," recites in element 1[c-ii], "wherein the battery comprises a shape and size configured to fit within the cavity *between* the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component," and recites element 1[d] "a printed circuit board disposed *between* the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity . . . different from the first portion." The claim language thus defines the cavity in terms of its location—it is intermediate the housing components and thus within the ring structure. As well, the claim defines the positions of the battery and PCB as within different portions of the cavity and between the internal and external housing components.

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[redacted]

According to its plain language, by reciting "formed between," and "between," the claim does not preclude the presence of potting material between the battery (or the PCB) and the external housing component. That is, a cavity is formed between the internal and external housing components even if potting material (or some other material) abuts the external housing component or completely surrounds the components. Respondents point to nothing in the claim language or specification demanding that "formed between" or "between" exclude other materials or exclude a battery or printed circuit board fully encapsulated by potting material. Instead, the specification shows in Fig. 13 an example in which internal potting 1314 encapsulates the battery 1330 and the PCB 1340. The space 1320 is still "formed between" and "between" the internal housing component 1314 and the external housing component 1312. Likewise, the battery 1330 and the PCB 1340 are within the space 1320 and "between" the external housing component 1312, which is above them, and the internal housing component 1314, which is below them. Respondents contend that "the cavity must be formed between two opposing ring housing structures." Resp. Reply at 40. This is true but does not preclude intermediate materials. The claim language itself and as supported by the specification, refutes respondents' argument that the presence of material, be it glue, tape, or epoxy, means that a cavity is not "formed between" the internal and external housing components or means that the battery and PCB are not "between" the internal and external housing components. Resp. Reply at 81–86 (Ultrahuman); *id.* at 86–93 (RingConn); *id.* at 94–100 (both).

Even if respondents' argument was not refuted by the claim language and specification, the evidence supports that in the accused products, the battery and printed circuit board are not encapsulated in epoxy, i.e., the internal housing component. Instead, the evidence demonstrates

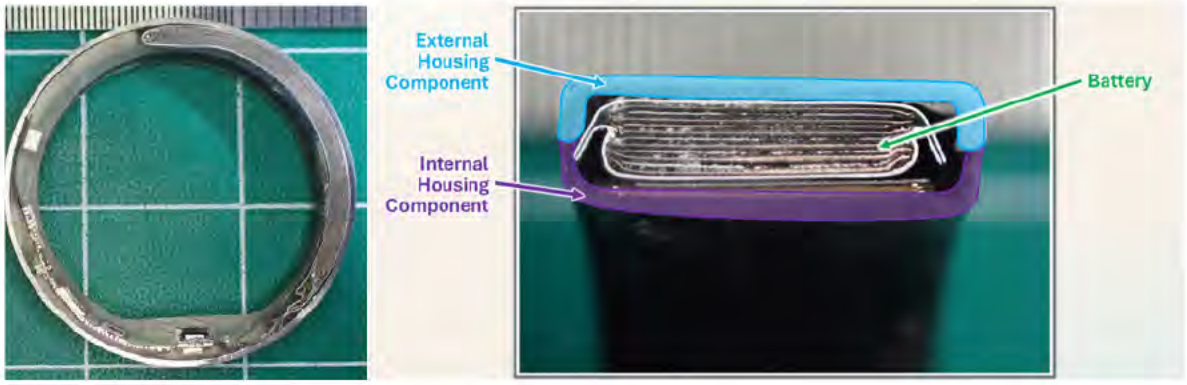
[redacted]

that the battery and printed circuit board are affixed to the external housing component via glue or tape before application of the epoxy.

i. Ultrahuman

Ultrahuman contends that its battery and PCB are fully encapsulated by the epoxy that creates the internal housing component and that there is, therefore, no PCB, battery or cavity between the internal and external housing components, as recited in elements 1[c-i], 1[c-ii]. and 1[d] Resp. Reply at 81–85. Oura contends that Ultrahuman's battery is "between an internal layer of potting and an outer ring and that the battery takes up space within the ring." Oura Br. at 45, *citing* Alarcon Tr. at 1059:1–2 ("the battery would be between") and 1128:1–14 ("Yes they take up space."). Oura also contends that Ultrahuman's printed circuit board is between the outer ring and the layer of potting that forms the inner surface of the ring. Oura Br. at 58.

The evidence supports that Ultrahuman's battery is directly adjacent the external housing component, as shown below:



CX-1069 (left) and CDX-0003C.83, *annotating* CX-1088.

Mr. Kumar testified that in the Ultrahuman product, [redacted]

[redacted]. Kumar Tr. at 651:7–23. Mr. Kumar characterized these as "temporary structures," but I do not credit this testimony because his testimony was inconsistent on this point.

[redacted]

In particular, Mr. Kumar testified that the tape behind the printed circuit board "[redacted]" which is "[redacted]" and that "[redacted]" Inexplicably, however, Mr. Kumar testified that "[redacted]" Kumar Tr. at 661:4-8. If the tape "[redacted]" and "[redacted]" it does not make sense that the "[redacted]" As for the battery, Mr. Kumar testified that [redacted] is used to "[redacted]" Kumar Tr. at 650:21–25. He described the [redacted] between the [redacted] as a "[redacted]" "[redacted]." *Id.* at 651:7–9. He characterized this as a "[redacted]." *Id.* Ultrahuman relies on Mr. Kumar's testimony to argue that [redacted] will be "[redacted]." Resp. Reply at 41. Mr. Kumar's testimony, provided in service of Ultrahuman's non-infringement argument, is inconsistent with his testimony [redacted].

The evidence does not support that Ultrahuman's battery and PCB are entirely encapsulated in the epoxy that forms the internal housing component. As a result, even if the claim precludes a structure in which resin forming the internal housing component is between the battery and printed circuit board, the evidence supports that Ultrahuman's ring does not have such a structure.

ii. RingConn

Respondents contend that the RingConn accused products do not meet claim elements 1[c-i], 1[c-ii] and 1[d] because epoxy completely surrounds the battery and printed circuit board. Resp. Reply at 78 and 86–93. As explained above, it does not matter if there is epoxy between the external housing component and the battery and printed circuit circuit board for the cavity to be "formed between" the internal and external housing components, for the battery to be "positioned

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[redacted]

within a cavity formed between internal housing component and the external housing component," or for the printed circuit board to be disposed between the internal and external housing components, as claimed.

Nonetheless, the evidence does not support that the battery and printed circuit board are completely encapsulated in the RingConn accused products. Respondents contend that "Mr. Wang is the most knowledgable person in the world regarding the manufacture and composition" of RingConn's accused products and that "Dr. Wu is likewise intimately familiar with the manufacture, design and operation" of those products. Resp. Reply at 86–87. Respondents rely on their testimony to support the argument that epoxy completely encapsulates the battery and printed circuit board in the RingConn products. *Id.* at 87–93. Respondents contend that "[w]ithout any explanation whatsoever, Staff ignores the mountain of evidence summarized above establishing overwhelmingly that the potting material in RingConn's Accused Products completely encapsulates the PCB and battery." Resp. Reply at 94–100.

Respondents also criticize the Staff for crediting Dr. Sarrafzadeh's testimony that the [redacted] *Id.* at 101. Respondents contend that Mr. Wang and Dr. Wu are instead "much more reliable sources for how the RingConn products are made." *Id.* I disagree that Mr. Wang and Dr. Wu were reliable sources at the evidentiary hearing.

The evidence supports that Mr. Wang designed the manufacturing process for the RingConn ring. Wang Tr. at 1148:16–22 and 1173:6–7. Respondents agree. Resp. Reply at 101. At his deposition, Mr. Wang testified that [redacted] Wang Tr. at 1164:15–1165:20 and CX-0647C.0001

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[redacted] Mr. Wang also testified that [redacted] Wang Tr. at 1169:1–13. He further testified that [redacted] *Id.* at 1168:1–10 and 1170:5–16. Mr. Wang testified at deposition about the [redacted] *Id.* at 1168:11–15 and 1170:5–16. He did not call them the same name and his testimony supported that they have different functions. *Id.* at 1164:3–14, 1167:16–25, and 1168:11–14. Dr. Sarrafzadeh was fully justified in relying on this testimony. Oura Br. at 39 and Sarrafzadeh Tr. at 310:4–313:20.

At the evidentiary hearing, Mr. Wang contradicted his deposition testimony, testifying that [redacted] Wang Tr. at 1165:3–8, and that [redacted]. *Id.* at 112–15. He also testified that [redacted]. *Id.* at 1167:16–21 and 1168:16–20 and *see id.* at 1150:3–12. He also contradicted his deposition testimony in calling the epoxy resin, epoxy glue. *Id.* at 1163:21–1164:14. The apparent purpose of Mr. Wang's contradictory testimony at the evidentiary hearing was to support RingConn's argument that "potting material completely encapsulates the battery and PCB." Resp. Reply at 94–100. Mr. Wang's testimony, contradicting his deposition testimony, was not credible. And as explained in more detail below with respect to alleged copying, Mr. Wang's evidentiary hearing testimony that he knew of no other way to inspect an Oura ring than to smash it with a hammer and his contradictory reason for wanting to inspect an Oura ring was not credible. In short, Mr. Wang was not a credible witness at the evidentiary hearing.

[redacted]

Dr. Wu also testified at the evidentiary hearing and, like Mr. Wang, testified that the glue is "potting glue." Wu Tr. at 748:3–14. Dr. Wu testified that [redacted]. Wu Tr. at 750:1–15. In fact, although RingConn produced videos of its assembly process, apparently omitted from them [redacted] Wu Tr. at 747:4–7 (steps "not shown" in the process shown in CX-0034) and 749:17–25 ([redacted]). I do not credit Dr. Wu's testimony that RingConn's [redacted] because it is not supported by any other evidence and is inconsistent with Mr. Wang's deposition testimony, stating that [redacted].

I therefore disagree with respondents that "Mr. Wang [and] Dr. Wu . . . are significantly more credible witnesses than [Dr.] Sarrafzadeh." Resp. Reply at 103. The Staff was justified in relying on Dr. Sarrafzadeh's testimony, which was consistent with Mr. Wu's deposition testimony. Respondents contend that "even if Staff, Oura and [Dr.] Sarrafzadeh are correct that [redacted], those components would still be completely surrounded by potting material as defined by the '178 Patent." Resp. Reply at 103. I disagree, as Mr. Wang made clear at his deposition and as he was forced to concede at the evidentiary hearing, [redacted]. Wang Tr. at 1174:13–16.

Dr. Sarrafzadeh credibly testified that [redacted]. *See id.* at 442:5–8, 443:18–444:2. Dr. Sarrafzadeh's testimony is corroborated by respondents' expert Mr. Alarcon,

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[redacted]

who testified that [redacted]

[redacted] Alarcon Tr. at 1118:6–11. Mr. Alarcon further testified that the presence of this potting glue is the reason "why we see the black under a portion of the label" in the image below:



RDX-0001C.0041, *annotating* RX-0418C. Dr. Sarrafzadeh's testimony is further supported by teardown evidence showing the battery disposed directly adjacent to the external housing component, as shown below:



CX-1046 (RingConn).

The evidence does not support that RingConn's battery and PCB are entirely encapsulated in the epoxy that forms the internal housing component.[11] As a result, even if the claim precludes

[11] Respondents state that Dr. Sarrafzadeh agreed that potting material fully encapsulates the battery in the accused products. Resp. Reply at 98–100. Dr. Sarrafzadeh's statements that the battery, PCB, and other components are enclosed by epoxy or have an epoxy structure around them is no admission that epoxy is on every side of those components.

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[redacted]

a structure in which resin forming the internal housing component is between the battery and printed circuit board, the evidence supports that RingConn's ring does not have such a structure.

Respondents also contend that the RingConn products do not have a cavity formed between the internal and external housing components because they have charging contacts which are exposed to the air. Resp. Reply at 47–50. There is nothing in the claims or specification requiring that the cavity be entirely sealed. And respondents do not explain why the plain meaning of "a cavity formed between the internal housing component and the external housing component," excludes a cavity that is partially exposed to the internal surface, even though the cavity is formed between the internal and external housing components. In addition, the evidence respondents rely on shows that both the battery and the PCB are positioned within the cavity formed between the internal housing component and the external housing component. Resp. Reply at 48, RX-0225C.32. This argument is rejected.

c. Conclusion

The evidence detailed in subsection "a" above supports that the RingConn and Ultrahuman accused products meet element 1[c-i]. This is so regardless of whether the battery and printed circuit board are encapsulated with potting or not, though the evidence supports they are not.

7. Element 1[c-ii]

Element 1[c-ii] recites "wherein the battery comprises a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component." Oura contends this element is met. Oura Br. at 46–51. The Staff agrees. Staff Br. at 24–28. Respondents dispute that this element is met. Resp. Br. at 50–58 and 103–108.

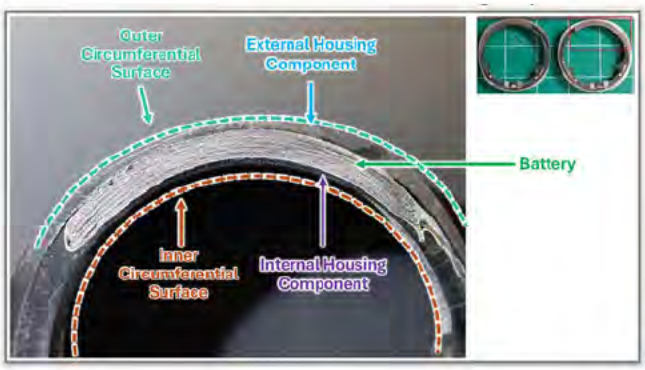
[redacted]

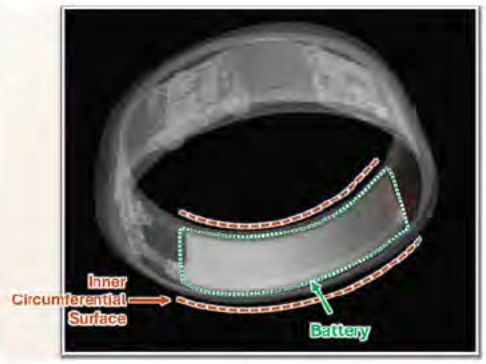
a. Configured to Fit

Respondents first contend that the claim language "wherein the battery comprises a shape and size configured to fit within the cavity" "unequivocally mandates that the claimed cavity exists prior to and independent of the battery." Resp. Reply at 50. This argument is rejected for the reasons explained with respect to element 1[c-i]. In short, the claim language does not require that the space between the internal and external housing components exists before the battery is placed in that space. That claim interpretation, in addition to not being required by the claim language, is not supported by the specification and excludes embodiments using potting material as one of the housing components.

The evidence supports that in both the RingConn and Ultrahuman accused products, the battery comprises a shape and size configured to fit within the cavity.

As for the RingConn ring, the evidence shows that the battery has a shape and size configured to fit within the cavity, as shown below:

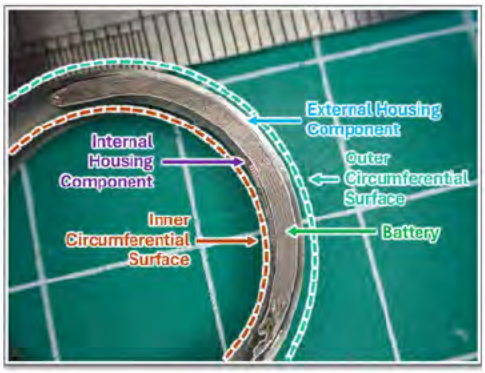


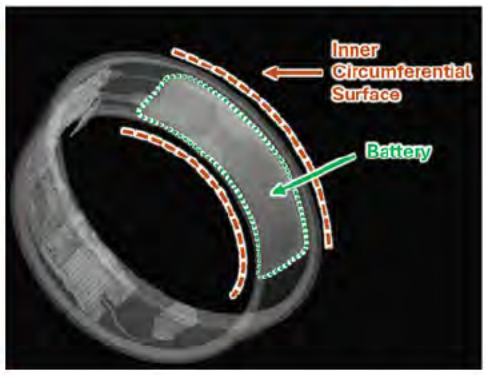


CDX-0003C.93, *annotating* CX-1046; CDX-0003C.94, *annotating* CX-0070; and Sarrafzadeh Tr. at 320:19–321:25. As the drawings above show and as RingConn's engineering drawing, CX-0647C and video, CX-0034C, confirm, its battery is placed within the metal outer band and is sized and shaped to fit into that band. That band forms the cavity with the potting material, as shown above. *See* Oura Br. at 47; Sarrafzadeh Tr. at 320:11–18; and CX-0065.

[redacted]

As for the Ultrahuman ring, the evidence supports that the battery comprises a shape and size configured to fit within the cavity, as shown below:



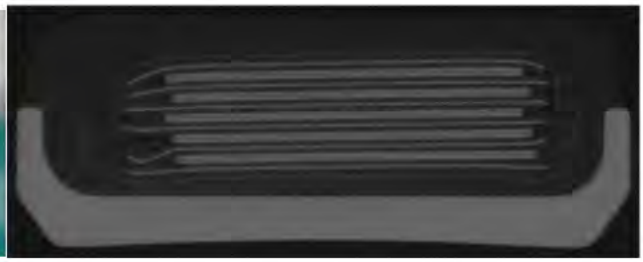


CDX-0003C.96, *annotating* CX-1077; CDX-0003C.97, *annotating* CX-0059; and Sarrafzadeh Tr. at 321:11–323:7. The evidence supports that Ultrahuman's battery is placed within its metal outer band and is sized and shaped to fit into that band. That band forms the cavity with the potting material, as shown above. *See* Oura Br. at 49–51 and CX-0059.

Respondents argue that their batteries are not shaped and sized to fit within the cavity because the battery extends beyond the ridges of the external housing component, and therefore does not fit completely within this space, as shown below. Resp. Reply at 57.



CX-1088 (Ultrahuman)



CX-0694.0002 (RingConn)

Nothing in the language of the claim, however, requires that the battery entirely fit within ridges of the external housing component. Rather, the claim recites that the battery has a shape and size configured to fit within the cavity. This is supported by the specification, which discloses multiple embodiments in which components extend beyond the space of one of the housing

components. For example, Figs. 14A and 14E both show PCB 1440 extending beyond the external housing component 1412:

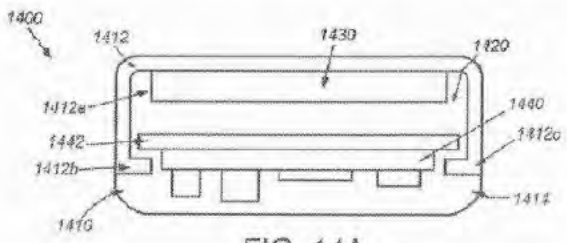


FIG. 14A

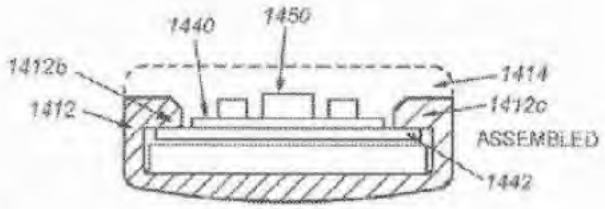


FIG. 14E

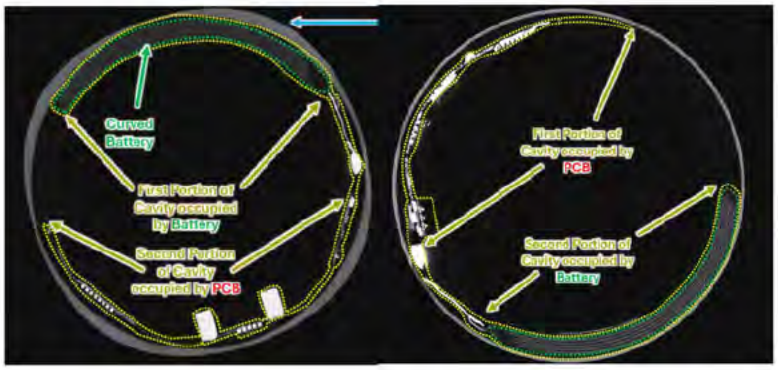
'178 patent at Figs. 14A and 14E. The language of the claims and the specification do not support respondents' position.

The evidence supports that the RingConn and Ultrahuman accused products have a battery with a shape and size configured to fit within the cavity, as claimed.

b. Circumferential Surfaces

Respondents contend that because each of their products include a flat portion on their inner surface to orient the ring to its charger, the products do not have a battery configured between circumferential surfaces. Resp. Reply at 106 and *see id.* at 103–108. Respondents' position is based on statements made by Oura in post-grant proceedings before the PTO. *Id.* at 104–106.

This portion of the claim recites that the battery is between circumferential surfaces of the housing components. This is shown in the CT scans respondents reproduce in their brief:



[redacted]

Resp. Reply at 104, showing RingConn product at left and Ultrahuman product at right. *See also* CX-0065 (RingConn) and CX-1077 (Ultrahuman). The battery in each of the above images is within curved or circumferential portions of the internal and external housing components. While other portions of the internal housing may be flat, that is irrelevant to this claim element. Respondents' argument is rejected.

c. Conclusion

The evidence supports that the accused products meet element 1[c-ii].

8. Element 1[c-iii]

Elements 1[c-iii] recites "wherein the battery extends through at least a first portion of the cavity of the finger-worn wearable ring device." Oura contends this element is met. Oura Br. at 51–53. The Staff agrees. Staff Br. at 24–28. Respondents only dispute this element is met to the extent they dispute the presence of a cavity. Resp. Reply at 28–110. As explained, the evidence supports that the accused products include a cavity formed between the internal housing component and the external housing component. The evidence supports that the batteries in the RingConn and Ultrahuman accused products extend through at least a first portion of the cavity of the finger-worn wearable ring device. Sarrafzadeh Tr. at 325:1–17 and 325:18–326:1; CX-0065 (RingConn); and CX-0056 (Ultrahuman). The evidence supports that the accused products meet element 1[c-iii].

9. Element 1[d]

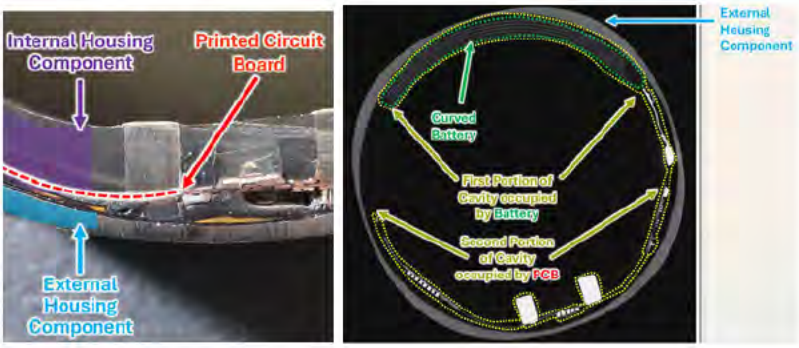
Element 1[d] recites "a printed circuit board disposed between the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity of the finger-worn wearable ring device different from the first portion." Oura contends this element is met. Oura Br. at 53–59. The Staff agrees. Staff Br. at 28–30. Respondents dispute that this element is met for the same reasons they argued with respect

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[redacted]

to elements 1[c-i] and 1[c-ii]. Respondents make no arguments specific to element 1[d]. Resp. Reply at 78–103.

The evidence supports that in the RingConn accused products, a printed circuit board is disposed between the internal and external housing components and extends through a different portion of the cavity than the battery, as shown below:



CDX-0003C.115 (above, left), *annotating* CX-1044 (PCB between internal and external housing components) and CDX-0003C.116 (above, right), *annotating* CX-0065 (PCB in different portion of cavity than battery); Sarrafzadeh Tr. at 328:16–330:24; CX-0032C; CX-0647C; and CX-1040.

The evidence supports that in the Ultrahuman accused product, a printed circuit board is disposed between the internal and external housing components and extends through a different portion of the cavity than the battery, as shown below:



CDX-0003C.118 (above, left), *annotating* CX-1070 (PCB between internal and external housing components) and CDX-0003C.119 (above, right), *annotating* CX-0056 (PCB in different portion of cavity than battery); Sarrafzadeh Tr. at 330:25–331:20; and CX-1069.

[redacted]

The evidence supports that the RingConn and Ultrahuman accused products meet element 1[d].

10. Element 1[e]

Element 1[e] recites "one or more sensors electrically coupled with the printed circuit board and the battery and configured to acquire data from the user through the internal housing component." Oura contends this element is met. Oura Br. at 59–63. The Staff agrees. Staff Br. at 31. Respondents do not dispute that this element is met, other than to the extent they contend the accused products do not have an internal housing component. Resp. Reply at 28–110.

The evidence supports that the RingConn and Ultrahuman accused products include one or more sensors electrically coupled with the printed circuit board and the battery and configured to acquire data from the user through the internal housing component. Sarrafzadeh Tr. at 335:18–337:4 (RingConn); CX-0403; CX-0404; CX-0417; CX-0033C; CX-0070; CX-0069; CX-0032C; Sarrafzadeh Tr. at 337:5–338:15 (Ultrahuman); CX-0312; CX-0313; CX-0314; and CX-0287. The evidence supports that the RingConn and Ultrahuman accused products meet element 1[e].

11. Conclusion

The evidence supports that the RingConn and Ultrahuman accused products meet all elements of claim 1.

E. Claim 2

Claims 2 recites "[t]he finger-worn wearable ring device of claim 1, wherein the first portion of the cavity of the finger-worn wearable ring device is non-overlapping with the second portion of the cavity of the finger-worn wearable ring device." Oura contends that this claim is met. Oura Br. at 64–66. The Staff agrees. Staff Br. at 32. Respondents do not dispute that the additional elements of claim 2 are met. Resp. Reply at 109.

[redacted]

The evidence supports that the first portion of the cavity of both of the RingConn and Ultrahuman rings is non-overlapping with the second portion of the cavity. Sarrafzadeh Tr. at 339:23–341:8 (RingConn) and 341:9–17 (Ultrahuman); CX-0065; and CX-0056. The evidence supports that the RingConn and Ultrahuman accused products meet claim 2.

F. Claim 12

Claim 12 recites "[t]he finger-worn wearable ring device of claim 1, wherein the battery comprises a curved battery, wherein an arc of the curved battery approximates a corresponding arc of the external housing component." Oura contends that this claim is met. Oura Br. at 66–69. The Staff agrees. Staff Br. at 33–34. Respondents do not dispute that the additional elements of this claim are met. Resp. Reply at 109.

The evidence supports that each of the RingConn and Ultrahuman accused rings includes a curved battery, wherein an arc of the curved battery approximates a corresponding arc of the external housing component. Sarrafzadeh Tr. at 343:5–344:8 (RingConn) and 344:9–19 (Ultrahuman); CX-0647C; CX-0070; CX-0056; and CX-0059. The evidence supports that the RingConn and Ultrahuman accused products meet claim 12.

G. Claim 13

Claim 13 recites "[t]he finger-worn wearable ring device of claim 1, wherein the one or more sensors comprise a first light-emitting component configured to emit light associated with a first wavelength, and a second light-emitting component configured to emit light associated with a second wavelength different from the first wavelength." Oura contends that this claim is met. Oura Br. at 69–73. The Staff agrees. Staff Br. at 34. Respondents do not dispute that the additional elements of this claim are met. Resp. Reply at 109.

The evidence supports that each of the RingConn and Ultrahuman rings includes one or more sensors comprising a first light-emitting component configured to emit light associated with

[redacted]

a first wavelength, and a second light-emitting component configured to emit light associated with a second wavelength different from the first wavelength. Sarrafzadeh Tr. at 345:12–346:21 (RingConn) and 347:4–15 (Ultrahuman); CX-0403; CX-0404; and CX-0405; CX-0312; CX-0313; and CX-0314. The evidence supports that the RingConn and Ultrahuman accused products meet claim 13.

H. Claim 14

Claim 14 recites "[t]he finger-worn wearable ring device of claim 13, wherein the first wavelength is associated with visible light, and wherein the second wavelength is associated with infrared light." Oura contends that this claim is met. Oura Br. at 69–73. The Staff agrees. Staff Br. at 34. Respondents do not dispute that the additional elements of this claim are met. Resp. Reply at 109.

The evidence supports that in each of the RingConn and Ultrahuman rings, the first wavelength is associated with visible light, and the second wavelength is associated with infrared light. Sarrafzadeh Tr. at 345:12–347:3 (RingConn) and 347:4–15 (Ultrahuman); CX-0403; CX-0404; CX-0405; CX-0312; CX-0313; and CX-0314. The evidence supports that the RingConn and Ultrahuman accused products meet claim 14.

VIII. TECHNICAL PRONG

Oura asserts that its Oura Ring Gen. 3 and Oura Ring Gen. 4 practice claims 1, 2, and 12–14. Oura Br. at 79–108. The Staff agrees. Staff Br. at 34–36. Respondents contend that the Gen. 3 and Gen. 4 rings do not practice the asserted claims for various of the same reasons as the accused products. Resp. Reply at 110–113.

A. Legal Standard

For a patent-based complaint, a violation of section 337 can be found "only if an industry in the United States, relating to the articles protected by the patent . . . exists or is in the process of

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[redacted]

being established." 19 U.S.C. § 1337(a)(2). The complainant bears the burden of establishing a domestic industry. *John Mezzalingua Assocs., Inc. v. Int'l Trade Comm'n*, 660 F.3d 1322, 1331 (Fed. Cir. 2011); *Certain Toner Cartridges, Components Thereof, and Systems Containing Same*, Inv. No. 337-TA-1174, Initial Determination at 84 (Jul. 23, 2020) (EDIS Doc. ID 716848), *unreviewed by*, Comm'n Notice (Sept. 8, 2020) (EDIS Doc. ID 719096).

The technical prong of the domestic industry requirement in a patent-based section 337 investigation is satisfied when the complainant establishes that it or its licensee is practicing or exploiting the asserted patent. *See* 19 U.S.C. §§ 1337(a)(2) and (3); *Certain Microsphere Adhesives, Process for Making Same, and Products Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, USITC Publ'n No. 2949, Comm'n Op. at 8 (Jan. 1996) (EDIS Doc. ID 162915). "The test for satisfying the 'technical prong' of the industry requirement is essentially [the] same as that for infringement, *i.e.*, a comparison of domestic products to the asserted claims." *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003). To prevail, the patentee must establish by a preponderance of the evidence that its domestic product practices one or more valid claims of the patent. *Certain Vision-Based Driver Assistance System Cameras, Components Thereof, and Products Containing the Same*, Inv. No. 337-TA-907, Comm'n Op. at 36, USITC Publ'n No. 4866 (Feb. 2019) (EDIS Doc. ID 673954).

B. Claim 1

1. Element 1[pre]

Element 1[pre] recites "[a] finger-worn wearable ring device, comprising . . ." The parties agree that the preamble is limiting. Order No. 17 at 5. Oura contends this element is met. Oura Br. at 79–80. The Staff agrees. Staff Br. at 35. Respondents do not dispute that this element is met. Resp. Reply at 110–113. The evidence supports that the Gen. 3 and Gen. 4 are finger-worn

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[redacted]

wearable ring devices. Sarrafzadeh Tr. at 262:3–13; CX-0174; CX-0142; and CX-0667C. The evidence supports that the Gen. 3 and Gen. 4 meet element 1[pre].

2. Element 1[a]

Element 1[a] recites "an external housing component defining an outer circumferential surface of the finger-worn wearable ring device." Oura contends this element is met. Oura Br. at 80–82. The Staff agrees. Staff Br. at 35–36. Respondents do not dispute that this element is met. Resp. Reply at 110–113.

The evidence supports that the Gen. 3 and Gen. 4 include an external housing component defining an outer circumferential surface of the finger-worn wearable ring device. Sarrafzadeh Tr. at 269:23–271:7 (Gen. 3); CX-0040C; CX-0702 (Horizon); CX-0701 (Heritage); Sarrafzadeh Tr. at 271:8–16 (Gen. 4); CX-0699C; and CX-0667C. The evidence supports that the Gen. 3 and Gen. 4 meet element 1[a].

3. Element 1[b-i]

Element 1[b-i] recites "an internal housing component defining an inner circumferential surface of the finger-worn wearable ring device." Oura contends this element is met. Oura Br. at 82–85. The Staff agrees. Staff Br. at 37–38. Respondents dispute that Gen. 3 satisfies this element, but do not dispute that Gen. 4 satisfies this element. Resp. Reply at 112–113. The term "internal housing component" was construed as meaning "an internal structure that encloses space and which does not necessarily exclude potting material." Order No. 17 at 14.

Respondents contend that the Gen. 3 is a single-enclosure structure (i.e., it only includes an external housing component and potting material), and thus does not have internal housing component. Resp. Reply at 112–13. In particular, respondents argue that "[t]he potting material used in the Oura Gen. 3 product is not an internal housing component for all the same reasons that the potting material in the Accused Products is not an [internal housing component]." *Id.*, *citing*

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[redacted]

Alarcon Tr. at 960:25–961:13; CX-0046 (CT Scan of Oura Ring Gen. 3); CX-0074C (CT Scan of Oura Ring Gen. 4).

Oura contends that in Gen. 3, "the internal housing component is the layer of potting material that covers the battery and PCB, forms a seal with the external housing component, and defines the inner circumferential surface of the ring." Oura Br. at 84, *citing* Sarrafzadeh Tr. at 279:16–280:8 and Alarcon Tr. at 1026:15–23, 1027:5–12, and 1028:1–2. The Staff agrees with Oura that Gen. 3 includes "an internal housing structure that satisfies this limitation." Staff Br. at 37, *citing* Sarrafzadeh Tr. at 279:16–280:21; CX-0702 (Horizon); CX-0701 (Heritage).

For the reasons explained above, respondents' argument that a potting material cannot be the claimed internal housing component is rejected. The evidence supports that Gen. 3 includes an internal housing component defining an inner circumferential surface of the ring, as shown below:



CDX-0003C.53, *annotating* CX-0176; Sarrafzadeh Tr. at 279:16–280:8; CX-0040C; CX-0176 (Horizon); and CX-0142 (Heritage).

The evidence also supports that Gen. 4 includes an internal housing component defining an inner circumferential surface of the ring, as shown below:

[redacted]



CDX-0003C.55, *annotating* CX-0667; Sarrafzadeh Tr. at 280:9–21; and CX-0699C. The evidence supports that the Gen. 3 and Gen. 4 meet element 1[b-i].

4. Element 1[b-ii]

Element 1[b-ii] recites "the internal housing component coupled with the external housing component." Oura contends this element is met. Oura Br. at 85–86. The Staff agrees. Staff Br. at 38–39. Respondents do not dispute this element is met, other than to the extent they contend Gen. 3 does not have an internal housing component. Resp. Reply at 110–113.

The evidence supports that Gen. 3 and Gen. 4 have an internal housing component coupled with an external housing component. Sarrafzadeh Tr. at 283:14–284:3 (Gen. 3) and 284:6–15 (Gen. 4); CX-0176; and CX-0667C. The evidence supports that the Gen. 3 and Gen. 4 meet element 1[b-ii].

5. Element 1[b-iii]

Elements 1[b-iii] recites "wherein at least a portion of the inner circumferential surface of the internal housing component is configured to contact a tissue of a user when the finger-worn wearable ring device is being worn by the user." Oura contends this element is met. Oura Br. at 86–88. The Staff agrees. Staff Br. at 39. Respondents do not dispute this element is met, other than to the extent they contend Gen. 3 lacks an internal housing component. Resp. Reply at 110–113.

The evidence supports that at least a portion of the inner circumferential surface of the internal housing component of each of the Gen. 3 and Gen. 4 is configured to contact a tissue of a

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[redacted]

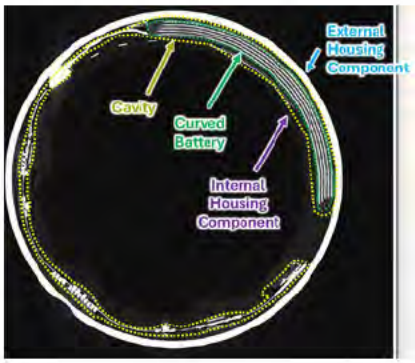
user when the finger-worn wearable ring device is being worn by the user. Sarrafzadeh Tr. at 304:25–305:13 (Gen. 3) and 305:14–306:4; CX-0841.0004; and CX-1146. The evidence supports that Gen. 3 and Gen. 4 meet element 1[b-iii].

6. Element 1[c-i]

Element 1[c-i] recites "a battery positioned within a cavity formed between the internal housing component and the external housing component." Oura contends this element is met. Oura Br. at 88–91. The Staff agrees. Staff Br. at 39–41. Respondents dispute that this element is met. Resp. Reply at 110–112. "Positioned within a cavity" was construed as having its plain and ordinary meaning, which is "positioned within a hollow space." Order No. 17 at 5.

Respondents contend that the Gen. 3 and Gen. 4 do not have a battery positioned within a cavity because they "are completely solid and lack any hollow space." Resp. Reply at 110. Respondents also argue that the Gen. 3 does not meet this element because its battery is encapsulated in potting material. Resp. Reply at 113. These are the same arguments respondents made with respect to the accused products, and they are rejected for the same reasons.

A CT scan of the Gen. 3 supports that its battery is positioned within a cavity formed between the internal and external housing components, as shown below:



[redacted]

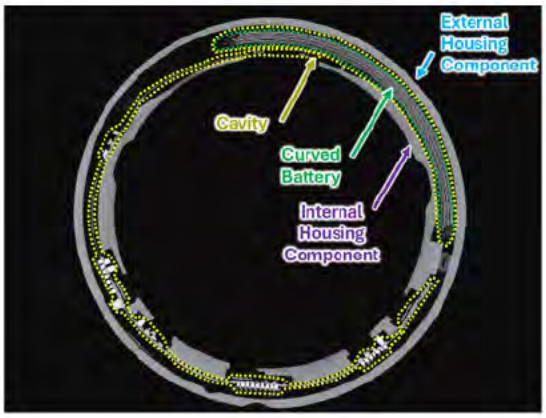
CDX-0003C.87, *annotating* CX-0046. Dr. Sarrafzadeh credibly testified that the battery in Gen. 3 is positioned within a cavity formed between the internal and external housing components. Sarrafzadeh Tr. at 318:11–24; *see also id.* at 316:20–318:10; CX-0040C; CX-0054; and CX-0135.

As for whether Gen. 3 is encased in potting, as explained with respect to the accused products, this is irrelevant to whether the "between" recitations in elements 1[c-i], 1[c-ii], and 1[d] are met. In addition, respondents rely on a single line of Mr. Alarcon's testimony that "[t]he components are encased in potting." Resp. Br. at 113, *quoting* Alarcon Tr. at 961:12. I find Mr. Alarcon's testimony conclusory and give it little weight, as he provided no corroborating evidence demonstrating that potting material in fact encapsulates components within the ring. Moreover, Mr. Alarcon's testimony is contradicted by the teardown evidence, shown below:



CX-0135.

As for Gen. 4, the evidence supports that its battery is positioned within a cavity formed between the internal housing component and the external housing component, as shown below:



[redacted]

CDX-0003C.89, *annotating* CX-0074C. Dr. Sarrafzadeh provided credible testimony that the battery in Gen. 4 is positioned within a cavity between the internal housing component and external housing component. Sarrafzadeh Tr. at 318:25–319:12.

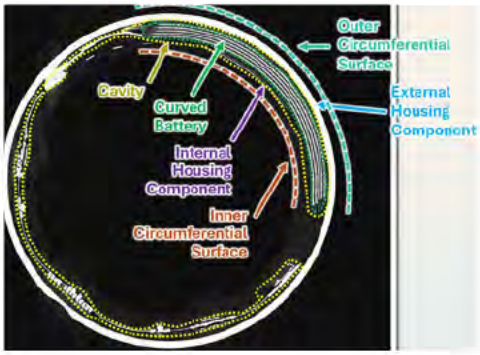
The evidence supports that the Gen. 3 and Gen. 4 meet element 1[c-i].

7. Element 1[c-ii]

Element 1[c-ii] recites "wherein the battery comprises a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component." Oura contends this element is met. Oura Br. at 91–93. The Staff agrees. Staff Br. at 39–41. Respondents dispute that this element is met. Resp. Reply at 112.

Respondents contend that the "alleged cavity in the Oura Gen. 3 and Gen. 4 products do [sic] not even until after the battery has been positioned in the ring and potting material have been applied over the it [sic]." Resp. Reply at 112.[12] This argument is rejected for the same reasons as discussed above with regard to the accused products.

The evidence supports that Gen. 3 includes a battery comprising a shape and size configured to fit within the cavity, as shown below:

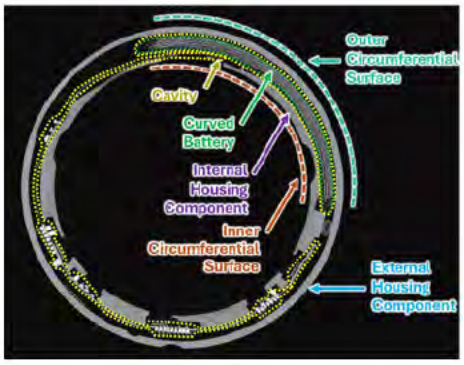


[12] The Gen. 4 does not have an internal housing component made of potting, so respondents' argument on that point is confusing.

[redacted]

CDX-0003C.99, *annotating* CX-0046; Sarrafzadeh Tr. at 323:11–25 and CX-0054. The evidence also supports that the battery in the Gen. 3 has a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component. Sarrafzadeh Tr. at 323:8–324:3; CX-0054; and CX-0046.

As for Gen. 4, the evidence supports that it includes a battery comprising a shape and size configured to fit within the cavity, as shown below:



CDX-0003C.101, *annotating* CX-0074C; Sarrafzadeh Tr. at 324:4–19. The evidence also supports that the battery in the Gen. 4 has a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component. *Id.*

The evidence supports that Gen. 3 and Gen. 4 meet element 1[c-ii].

8. Element 1[c-iii]

Elements 1[c-iii] recites "wherein the battery extends through at least a first portion of the cavity of the finger-worn wearable ring device." Oura contends this element is met. Oura Br. at 93–95. The Staff agrees. Staff Br. at 39–41. Respondents do not dispute that this element is met, other than to the extent they dispute that Gen. 3 and Gen. 4 have a cavity. Resp. Reply at 110–113.

[redacted]

The evidence supports that the batteries in the Gen. 3 and Gen. 4 extend through at least a first portion of the cavity of the finger-worn wearable ring device. Sarrafzadeh Tr. at 326:2–11 (Gen. 3) and 326:23–327:6 (Gen. 4); CX-0046; and CX-0074C. The evidence supports that Gen. 3 and Gen. 4 meet element 1[c-iii].

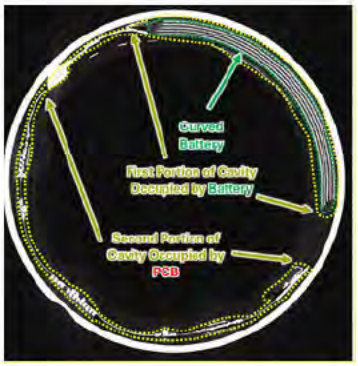
9. Element 1[d]

Element 1[d] recites "a printed circuit board disposed between the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity of the finger-worn wearable ring device different from the first portion." Oura contends this element is met. Oura Br. at 95–98. The Staff agrees. Staff Br. at 41–42. Respondents dispute that Gen. 3 satisfies this element, but do not dispute that Gen. 4 does. Resp. Reply at 110–113.

Respondents argue that Gen. 3 does not meet this element because the PCB is completely encapsulated in potting material. Resp. Reply at 113. As explained previously, this is irrelevant to whether this element is met. In addition, Respondents reliance on a single line of Mr. Alarcon's testimony that "[t]he components are encased in potting," Alarcon Tr. at 961:12, without more does not support that the PCB is encapsulated in potting material. Moreover, Mr. Alarcon's testimony conflicts with Oura's engineering drawings, which shows the printed circuit board abutting the internal and external housing components. Sarrafzadeh Tr. at 332:1–15 and CDX-0003C.121, *annotating* CX-0527C.0005.

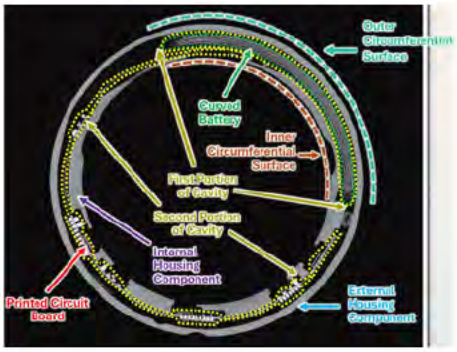
The evidence supports that Gen. 3 includes a printed circuit board disposed between the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity of the finger-worn wearable ring device different from the first portion, as shown below:

[redacted]



CDX-0003C.122, *annotating* CX-0046; Sarrafzadeh Tr. at 332:16–25 and *id.* at 331:23–332:15 and CX-0527C.

The evidence also supports that Gen. 4 includes a printed circuit board disposed between the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity of the finger-worn wearable ring device different from the first portion, as shown below:



CDX-0003C.124, *annotating* CX-0074C; Sarrafzadeh Tr. at 333:10–334:3; and CX-0041C.

The evidence supports that Gen. 3 and Gen. 4 meet element 1[d].

10. Element 1[e]

Element 1[e] recites "one or more sensors electrically coupled with the printed circuit board and the battery and configured to acquire data from the user through the internal housing component." Oura contends this element is met. Oura Br. at 99–101. The Staff agrees. Staff Br. at

[redacted]

43. Respondents do not dispute this element is met, other than to the extent they contend the Gen. 3 lacks an internal housing component. Resp. Reply at 110–113.

The evidence supports that the Gen. 3 and Gen. 4 include one or more sensors electrically coupled with the printed circuit board and the battery and configured to acquire data from the user through the internal housing component. Sarrafzadeh Tr. at 338:16–339:14; CX-0177; CX-0199; CX-0041C; and CX-0074C.

The evidence supports that Gen. 3 and Gen. 4 meet element 1[e].

11. Conclusion

The evidence supports that Gen. 3 and Gen. 4 meet all elements of claim 1.

C. Claim 2

Claims 2 recites "[t]he finger-worn wearable ring device of claim 1, wherein the first portion of the cavity of the finger-worn wearable ring device is non-overlapping with the second portion of the cavity of the finger-worn wearable ring device." Oura contends that this claim is met. Oura Br. at 102–03. The Staff agrees. Staff Br. at 43–44. Respondents do not dispute that the elements of this claim are met. Resp. Reply at 113.

The evidence supports that the first portion of the cavity of Gen. 3 and Gen. 4 are non-overlapping with the second portion of the cavity. Sarrafzadeh Tr. at 341:18–342:11; CX-0046; and CX-0074C. The evidence supports that Gen. 3 and Gen. 4 meet claim 2.

D. Claim 12

Claim 12 recites "[t]he finger-worn wearable ring device of claim 1, wherein the battery comprises a curved battery, wherein an arc of the curved battery approximates a corresponding arc of the external housing component." Oura contends that this claim is met. Oura Br. at 103–05. The Staff agrees. Staff Br. at 44–45. Respondents do not dispute that the elements of this claim are met. Resp. Reply at 113.

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[redacted]

The evidence supports that Gen. 3 and Gen. 4 include a curved battery, wherein an arc of the curved battery approximates a corresponding arc of the external housing component. Sarrafzadeh Tr. at 344:20–345:5; CX-0054; CX-0046; and CX-0074C. The evidence supports that Gen. 3 and Gen. 4 meet claim 12.

E. Claim 13

Claim 13 recites "[t]he finger-worn wearable ring device of claim 1, wherein the one or more sensors comprise a first light-emitting component configured to emit light associated with a first wavelength, and a second light-emitting component configured to emit light associated with a second wavelength different from the first wavelength." Oura contends that this claim is met. Oura Br. at 105–07. The Staff agrees. Staff Br. at 45. Respondents do not dispute that the elements of this claim are met. Resp. Reply at 113.

The evidence supports that Gen. 3 and Gen. 4 include one or more sensors comprising a first light-emitting component configured to emit light associated with a first wavelength, and a second light-emitting component configured to emit light associated with a second wavelength different from the first wavelength. Sarrafzadeh Tr. at 347:16–348:5 CX-0199; CX-0177; and CX-0041C. The evidence supports that Gen. 3 and Gen. 4 meet claim 13.

F. Claim 14

Claim 14 recites "[t]he finger-worn wearable ring device of claim 13, wherein the first wavelength is associated with visible light, and wherein the second wavelength is associated with infrared light." Oura contends that this claim is met. Oura Br. at 105–07. The Staff agrees. Staff Br. at 45. Respondents do not dispute that the elements of this claim are met. Resp. Reply at 113.

The evidence supports that Gen. 3 and Gen. 4 include a first wavelength associated with visible light and a second wavelength associated with infrared light and thus meet claim 14. Sarrafzadeh Tr. at 347:16–348:5; CX-0199; CX-0177; and CX-0041C.

[redacted]

IX. VALIDITY[13]

Respondents contend that: (i) Niwa alone anticipates claims 1, 2, 13, and 14; (ii) the combination of Niwa and "the battery art" renders claim 12 obvious; and (iii) the combination of Niwa and Schröder renders obvious claims 1, 2, 13, and 14. Resp. Br. at 21–64.

A. Legal Standard

Patents are presumed valid. 35 U.S.C. § 282; *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 95–96 (2011). A party asserting patent invalidity must overcome this presumption by clear and convincing evidence. *Microsoft*, 564 U.S. at 97.

"Anticipation requires that a single prior art reference disclose each and every limitation of the claimed invention, either expressly or inherently." *SRI Int'l, Inc. v. Cisco Systems, Inc.*, 930 F.3d 1295, 1306 (Fed. Cir. 2019); *In re Smith Int'l, Inc.*, 871 F.3d 1375, 1381 (Fed. Cir. 2017) ("A patent claim is anticipated 'only if each and every element is found within a single prior art reference, arranged as claimed,'" *quoting Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1294 (Fed. Cir. 2015)).

A claim is invalid as obvious if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103. Because obviousness is determined at the time of invention, rather than the date of litigation, "[t]he great challenge of the obviousness judgment is proceeding

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[13] Institution of a post-grant review of claims 1–10 and 12–18 of the '178 patent, requested by Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc., was granted. *See* PGR2024-00030, Paper 9 (Dec. 6, 2024). After the evidentiary hearing, RingConn filed both a petition for inter partes review and post-grant review and in both asked to join the Samsung proceeding. *See* PGR2025-00018 and IPR2025-00412. Likewise, Ultrahuman filed a petition for inter parties review and asked to join the Samsung proceeding. *See* IPR2025-00411.

[redacted]

without any hint of hindsight." *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1375 (Fed. Cir. 2011).

When a claim is challenged as obvious, the critical inquiry in determining the differences between the claimed invention and the prior art is whether there is an apparent reason to combine known elements as claimed in the patent. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417–418 (2007). When a respondent relies on a combination of multiple prior art references to show obviousness, "the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so." *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007) (citations omitted).

Obviousness is a determination of law based on underlying determinations of fact. *Star Scientific*, 655 F.3d at 1374. The factual determinations underlying an obviousness determination are: (1) the scope and content of the prior art, (2) the level of skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective indicia of non-obviousness. *KSR*, 50 U.S. at 406, *citing Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Objective indicia include, among others, commercial success, long felt but unresolved need, copying, and the failure of others. *Id.*

B. Anticipation

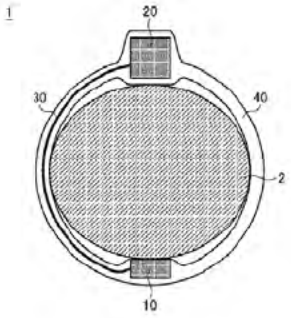
Respondents argue that U.S. Patent Pub. No. 2012/0016245, CX-1133, issued to Niwa anticipates claims 1, 2, 13, and 14. Resp. Br. at 21–46. Oura disputes these arguments. Oura Reply at 12–17. The Staff agrees with Oura. Staff Br. at 47–48 and Staff Reply at 28–29.

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[redacted]

1. Overview of Niwa

The evidence supports that Niwa, CX-1133, which published on January 19, 2012, is prior art to the '178 patent under 35 U.S.C. § 102(a)(2). Resp. Br. at 8. Niwa is titled "Plethysmogram Sensor"[14] and discloses a sensor that emits light onto a portion of the body, such as in a finger, and detects reflected light. *See* CX-1133 at Abstract, [0117]. By measuring the amount of light attenuation, biological characteristics, such as blood vessel age or arterial stiffness, can be determined. *See id.* Niwa's light receiving portion may be implemented as a "finger ring construction to measure the plethysmogram." *Id.* at [0191]. A cross-section of Niwa's ring around a user's finger is shown below:



CX-1133 at Fig. 22.

Sensor 1 includes a first unit 10, a second unit 20, a cable 30, and a finger-ring type housing 40. *Id.* at [0191]. The first unit 10 includes a sensor for measuring the amount of light reflected from the user's finger. *See id.* at [0192]. The second unit 20 supplies power to the first unit 10 via cable 30. *See id.* at [0193–94].

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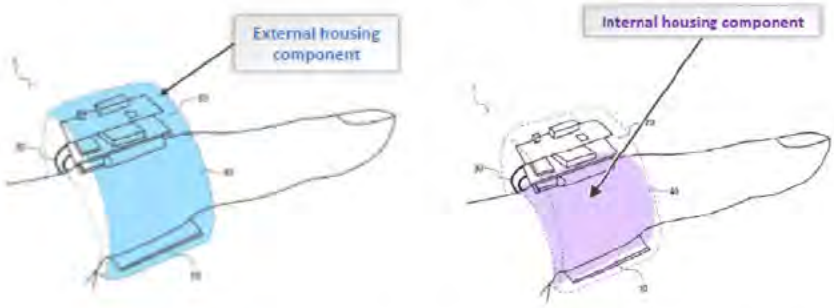
[14] A plethysmograph is an instrument for determining and registering variations in the size of an organ, limb, or part resulting from changes in the amount of blood present or passing through it. www.merriam-webster.com.

[redacted]

2. Elements 1[a], 1[b-i], and 1[b-ii]

Elements 1[a] and 1[b-i] of claim 1 recite an "external housing component" and an "internal housing component," while element 1[b-ii] recites, "the internal housing component coupled with the external housing component." The internal and external housing component terms were construed as having their plain and ordinary meaning, which is "an [internal/external] structure that encloses space and which does not necessarily exclude potting material." Order No. 17 at 14. "Coupled with" was construed as having its plain and ordinary meaning, which is "connected with." *Id.* at 5.

Respondents argue that, while Niwa does not explicitly disclose a separate "external housing component" and a separate "internal housing component," Niwa's housing 40 includes inner and outer surfaces that enclose space. Resp. Br. at 22–25. Respondents highlight two portions of Niwa's housing 40 and argue that a first portion (in blue) is the external housing component, and a second portion (in purple) is the internal housing component, as shown below:



Resp. Br. at 24, *annotating* Niwa at Fig. 26; *id.* at 30, *annotating* Niwa at Fig. 26.

According to respondents, Niwa's housing 40 encloses the space containing the first unit 10 and the second unit 20. *See id.*, *citing* Niwa at [0029], [0192–93]. Respondents argue that Niwa's disclosure of housing 40 discloses both the external housing component and the internal housing component because they are respectively shown above and below the components within

[redacted]

the ring. *See id.*, *id.* at 29–30. In respondents' view, Niwa's housing 40 is both the external housing component and the internal housing component because it encloses its internal space.

Claim 1 separately recites the internal and external housing components. When a claim lists elements as separate components, there is a rebuttable presumption that those elements are distinct components of the patented invention. *Certain Vaporizer Devices, Cartridges Used Therewith, and Components Thereof*, Inv. No. 337-TA-1368, Comm'n Op. at 82 (addressing *Kyocera Senco Industrial Tools Inc. v. Int'l Trade Comm'n*, 22 F.4th 1369 (Fed. Cir. 2022) and *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249 (Fed. Cir. 2020)) (Feb. 19, 2025) (EDIS Doc. ID 843889). The Commission has called that the *Becton* presumption. *Id.* at 84. I find that it applies here.

The rebuttable presumption is supported here by other claim language requiring that the internal and external housing components are coupled. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1280 (Fed. Cir. 2015) ("[I]t would be illogical to regard one unit as being 'attached' to itself."). The rebuttable presumption is also supported by the specification, which shows and discusses individual components of the housing as separate (i.e., Fig. 12 (1212 and 1214), Fig. 13 (1312 and 1314), Fig. 14 (1412 and 1414), and Fig. 15 (1512 and 1514) when a housing with separate components is disclosed and discloses a u-shaped ring housing in Fig. 4 and a housing with an integral inner wall and outer wall in Fig. 16 when a unitary housing is disclosed. '178 patent at 16:43–20:49 (Figs. 12–15), 16:22–42 (Fig. 4), and 20:51–65 (Fig. 16). I agree with Oura's expert that the embodiments of Figs. 4 and 16 do not have separate external and internal housing components. *See* Sarrafzadeh Tr. at 385:10–23 ("My opinion is you are taking one unitary structure and you're calling it two different things. That, from an engineering point of view, I have issue

[redacted]

with that."). I find that the *Becton* presumption has not been overcome and is instead supported by the language of the claims and the specification.

Respondents contend that they are "not required to show that the prior art uses the same precise language as used by the '178 claims to prove anticipation." Resp. Br. at 25, *citing Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 910 (Fed. Cir. 2022). That is true, but irrelevant. In *Adasa*, the prior art "could reasonably be interpreted as" an enabling disclosure in which "[a] reasonable juror could find that a skilled artisan would interpret the disclosed combination . . . as mapping onto" the claimed element. 55 F.4th at 911. The question here, however, is not one of semantics. Respondents do not contend that Niwa specifically identifies either an external or an internal housing component, but only uses different language that can be "mapp[ed] onto" the limitations of claim 1. Instead, Niwa discloses a unitary housing 40 and does not disclose separate external and internal housing components. Niwa at [0191]. *Adasa* confirms that "each and every element of the claim" "must be arranged or combined in the same way as in the claim." 55 F.4th at 910. In Niwa, they are not. The evidence does not support that Niwa discloses the external and internal housing components "arranged or combined in the same way as in the claim."

Respondents have not shown by clear and convincing evidence that Niwa discloses element 1[a], element 1[b-i], or element 1[b-ii].

3. Elements 1[c-i] and 1[d]

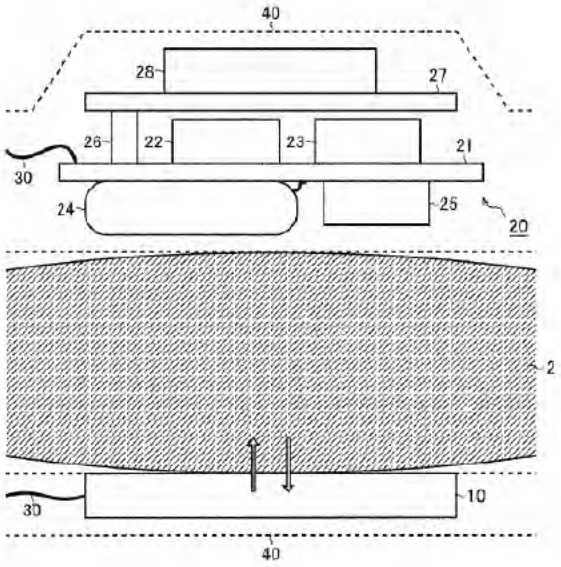
Element 1[c-i] recites "a battery positioned within a cavity formed between the internal housing component and the external housing component." Element 1[d] recites "a printed circuit board disposed between the internal housing component and the external housing component, wherein the printed circuit board extends through at least a second portion of the cavity of the finger-worn wearable ring device different from the first portion." Respondents contend that Niwa

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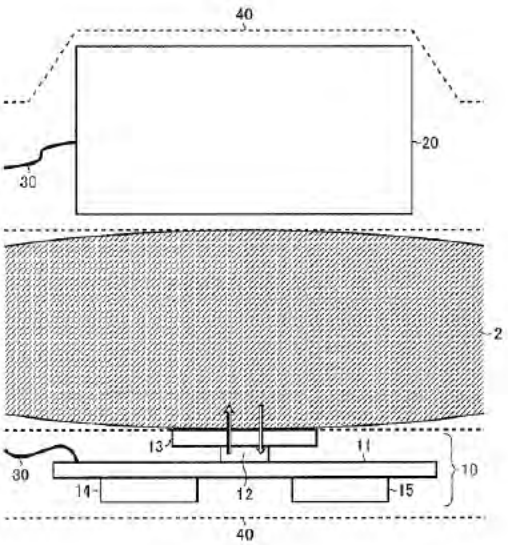
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discloses these limitations. Resp. Br. at 34–40. Oura disputes this. Oura Reply at 15–17. The Staff agrees with Oura. Staff Br. at 47–48.

Respondents argue that Niwa discloses limitation 1[c-i] because second unit 20, which contains battery 24, is located between the internal housing component (the dashed line between element 20 and element 2 in Fig. 28, below left) and the external housing component (the top-most dashed line in Fig. 28, below left). Resp. Br. at 34–35. Respondents argue that Niwa discloses limitation 1[d] because first unit 10, which contains substrate 11 (i.e., the printed circuit board), is located between the internal housing component (the dashed line between element 13 and element 2 in Fig. 27, below right) and the external housing component (the bottom-most dashed line in Fig. 27, below right). *Id.* at 39–40.



Niwa, Fig. 28



Niwa, Fig. 27

Oura argues that Niwa fails to disclose these limitations because Niwa does not disclose either the internal or the external housing component. Oura Reply at 15 and 17. As explained above, Niwa discloses only a unitary housing component, rather than separate external and internal

[redacted]

housing components that are coupled. Respondents have not shown by clear and convincing evidence that Niwa discloses elements 1[c-i] or 1[d].

Respondents have not shown by clear and convincing evidence that Niwa anticipates claim 1 of the '178 patent, or any of dependent claims 2, 13, and 14.

C. Obviousness

1. Niwa in View of "the Battery Art"

Respondents contend that Niwa in view of the battery art – any one of GMBPow, Henderson, and Webster – renders claim 12 obvious. Resp. Br. at 55–64. Oura disputes this. Oura Reply at 25–30. The Staff agrees with Oura. Staff Br. at 57–58.

a. Overview

The evidence supports that GMBPow sold curved lithium polymer batteries as early as 2013, and that GMBPow is prior art under 35 U.S.C. § 102(a)(1). Resp. Br. at 13–14 and RX-0030. GMBPow advertised its curved batteries for use in devices such as watches, sports bracelets, and wrist straps. RX-0030.

The evidence supports that Henderson published on August 29, 2013, from an application filed on January 18, 2013, and is prior art to the '178 patent under 35 U.S.C. §§ 102(a)(1) and (2). Resp. Br. at 17 and CX-1139. Henderson is titled "Power Management in an Activity Monitoring Device" and discloses an "athletic activity monitoring device," in which batteries may be managed "to provide more accurate state information and/or expected charge times." CX-1139 at Abstract. The batteries may have a "curvilinear or curved configuration" and "define curved planar surfaces." *Id.* at [0077].

The evidence supports that Webster issued on May 6, 2014, from an application filed July 14, 2011, and published on January 19, 2012, and is prior art under 35 U.S.C. §§ 102(a)(1) and (2). Resp. Br. at 19 and CX-1135. Webster is titled "Wireless Vaginal Sensor Probe" and

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[redacted]

discloses a "temperature sensing device that can comprise an elastic ring structure" including a battery. CX-1135 at Abstract. Webster discloses that "[t]he battery 212 can, in one embodiment, be a thin film lithium ion or zinc-manganese dioxide chemistry battery that can be bent or curved." *Id.* at 5:9–12.

b. Analysis

As an initial matter, as explained above, Niwa does not disclose "an internal housing component" or "an external housing component." Because Niwa does not disclose those components, it likewise does not disclose "a battery positioned within a cavity formed between the internal housing component and the external housing component," as also recited in claim 1.[15] Respondents do not contend that any of "the battery art" discloses any of these claim elements, or that the combination of Niwa and any of GMBPow, Henderson, or Webster renders claim 1 obvious. As claim 12 depends from claim 1, respondents have not shown that claim 12 is obvious over Niwa in view of any of GMBPow, Henderson, or Webster for this reason alone.

As to claim 12, it recites: "The finger-worn wearable ring device of claim 1, wherein the battery comprises a curved battery, wherein an arc of the curved battery approximates a corresponding arc of the external housing component." Respondents argue that one of skill would have been motivated to modify Niwa's device with any one of GMBPow, Henderson, or Webster to include a curved battery. Resp. Br. at 55–56. In particular, respondents argue that "using a curved battery" "would maximize battery capacity while fitting inside of the housing and would

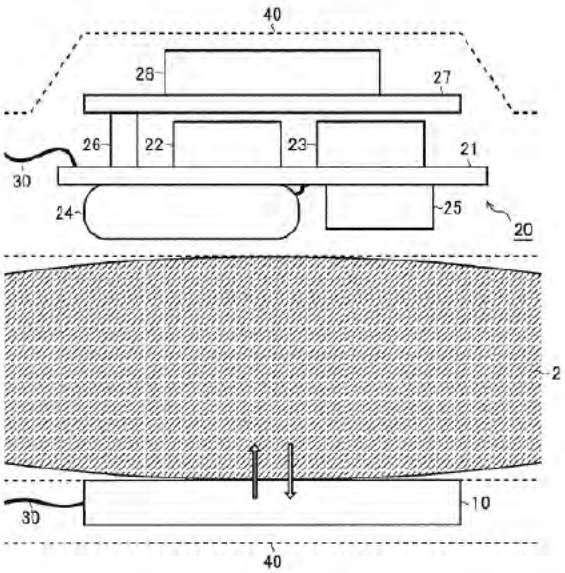
[15] Respondents do not argue that the combination of Niwa and Schröder and further in view of "the battery art" renders claim 12 obvious. Resp. Br. at 55–64. Any such argument has been waived.

[redacted]

be particularly useful in the event [one of skill] desired to reduce Niwa's protrusion to make the ring more wearable." *Id.* at 55.

Respondents rely on the testimony of Mr. Alarcon to the effect that one of skill would have wanted a battery to fit the "size and shape" of Niwa's ring, and "would have been motivated to find a curved battery to fit within that shape." Alarcon Tr. at 1007:2–8. Niwa, however, teaches away from incorporating components in the curved portion of the ring, explaining that by using both sides of the first substrate 21 efficiently, "the area of the first substrate 21 can be reduced. Therefore, the largeness of the second unit 20 can be restrained not to protrude from the third joint of the finger 2. Furthermore, a consciousness of the examinee for wearing the plethysmogram sensor 1 can be reduced." Niwa at [0214].

Fig. 28 of Niwa shows this stacking of the components to reduce the protrusion of the area of the first substrate 21 in the lateral direction – i.e., Niwa teaches reducing the lateral area taken up by the first substrate and the battery by stacking components, as shown below:



Niwa at Fig. 28. Respondents argue that one could "fit more battery" if you "continue along the arc," Resp. Br. at 62, *quoting* Alarcon Tr. at 1007:10–16, but this would require increasing the area

[redacted]

of the first substrate 21, which would directly contradict Niwa's disclosure that the area of the first substrate 21 should be reduced to reduce the consciousness of the wearer of the device. *See* Niwa at [0214]. In addition, Niwa discloses a flat battery: "according to this construction, the battery 24 [is] formed as highly flat" and "is located right above the finger 2" to enhance the affinity of the sensor. Niwa at [217].

I agree with Oura that respondents' obviousness argument is directly contrary to Niwa's teachings of "a highly flat battery" and a stacked configuration. Oura Reply at 25–26. Respondents provide no reason why one of skill would ignore Niwa's teachings and modify it to include a curved battery and non-stacked components. Niwa itself, therefore, provides strong evidence against a conclusion that it would have been obvious to replace its flat and stacked configuration with a curved battery. *Philip Morris Products S.A. v. Int'l Trade Comm'n*, 63 F.4th 1328, 1347 (Fed. Cir. 2023). One of skill would understand why a flat and stacked configuration was superior such that there would be no need for or benefit from a curved battery. Rosing Tr. at 1203:16–18 ("For the same volume, the flat battery generally will have a better energy density than the curved battery") and 1212:3–17 ("Niwa specifically wants battery to be highly flat. And that he very specifically locates it right above the finger and that he also specifically places two very flat substrates right on top of the finger. So he says he does this because it enhances affinity of the sensor and reduces consciousness of the examinee for wearing the ring. In addition, this highly flat battery has a better capacity. . . So there is no real reason for Niwa to want to modify this flat battery. He has from his perspective solved the problem that he was after.").

Respondents argue that the inventors considered GMBPow's battery, and looked to non-ring devices, such as the Nike+ FuelBand (Henderson), in searching for "the battery manufacturer for their Motiv ring, which practices the '178 patent." Resp. Br. at 62–63. Yet both inventors

[redacted]

testified that the GMBPow battery was inappropriate for the Motiv device. *See* Strasser Tr. at 598:13–17 ("Q. So would the battery shown [in the GMBPow document] work as is in your ring? A. No. There is going to still be some modifications based on size. These were just slightly -- these were very similar, but just slightly too wide for us") and von Badinski Tr. at 192:13–25 ("So this wouldn't have been an option for us."). Respondents also cite to the '178 patent itself as disclosing that "any type of battery" could be used, including a "a circular formed lithium polymer or lithium ion battery." Resp. Br. at 63, *quoting* '178 patent at 15:12–21. Respondents' reliance on the disclosure of the '178 patent itself and the testimony of the inventors is misplaced because it risks "allowing the challenger to use the challenged patent as a roadmap to reconstruct the claimed invention using disparate elements from the prior art—i.e., the impermissible *ex post* reasoning and hindsight bias that *KSR* warned against." *TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1361 (Fed. Cir. 2019).

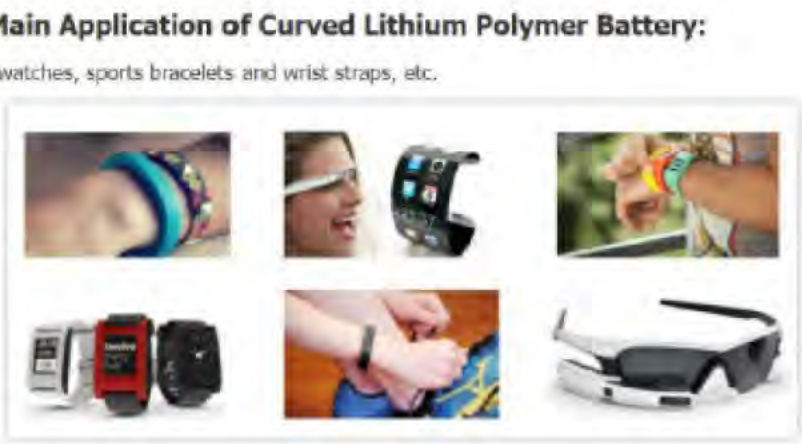
The evidence does not support that one of skill would have modified Niwa to include a curved battery within its curved ring structure. Nonetheless, each of the "battery art" references is considered below.

i. GMBPow

Respondents contend that Niwa discloses the device of claim 1, and that one of skill would have modified Niwa to include GMBPow's curved battery, rendering claim 12 obvious. Resp. Br. at 57–60. Oura disagrees. Oura Reply at 28–29.

Respondents first argue that one of skill in the art would consider GMBPow as it satisfies the dimensions for a ring, as disclosed in the'178 patent. Resp. Br. at 57–58. The GMBPow document includes the following text and figures regarding its typical applications:

[redacted]



RX-0030.1. As shown above, GMBPow advertised its batteries for use with "i-watches, sports bracelets, and wrist straps." *Id.* Such devices, designed for wrist-worn accessories, are larger in size, and accommodate larger batteries relative to finger-worn ring devices. Dr. Rosing provided credible testimony that one of skill would not have used GMBPow's batteries in Niwa because "they effectively are the size of two Cheerios stacked on top of each other, which is plenty big when you consider having to try to put it inside of a ring." Rosing Tr. at 1215:12–18.

Respondents argue that the GMBPow battery falls within the parameters in the specification because its arc length is 30 millimeters, while the patent specification discloses a 24 mm diameter (corresponding to a 75 mm circumference). Resp. Br. at 57–58. However, GMBPow discloses a 10 mm width, RX-0030.1, while the '178 patent discloses an overall width in a range of 3–8 mm. '178 patent at 17:16–18. Respondents argue that such a width would be within the range of what one of skill in the art would deem acceptable, relying on the testimony of Mr. Alarcon, who testified that "the [] battery would fit. . . . And maybe [10 mm is] a little more than what's disclosed [in the '178 patent], but that's a matter of a capital equipment investment to make a custom battery that has [] the size that you want." Alarcon Tr. at 1006:8–14. But respondents' argument is that it would have been obvious to use the curved battery of GMBPow in Niwa, not that it would be obvious to modify what is disclosed in GMBPow and then incorporate

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[redacted]

it into Niwa. In addition, Respondents provide no evidence supporting how GMBPow would be modified or what "capital equipment investment" would be required to use it in Niwa.

Respondents argue that *Tyco Healthcare Group v. Mutual Pharmaceutical* supports that "[a]ny minor deviation from those unclaimed dimensions cannot save the claims from obviousness." Resp. Br. at 58, *citing* 642 F.3d 1370, 1373–74 (Fed. Cir. 2011). Respondents argue that in *Tyco*, the Federal Circuit "affirm[ed] summary judgment that [a] patent to a drug composition was obvious where the only difference in the claimed invention and the prior art was dosage amount, the prior art disclosing a 15mg dosage and the claimed invention claiming dosages of 6mg to 8mg." *Id.* Respondents, however, misstate the facts. In *Tyco*, a prior art reference disclosed a range of 5–15 mg and the claimed dosage of 7.5 mg fell within that range. The Federal Circuit stated that "'where there is a range disclosed in the prior art, and the claimed invention falls within that range, there is a presumption of obviousness.'" *Id.* at 1372–73, *quoting Iron Grip Barbell Co. v. USA Sports, Inc.,* 392 F.3d 1317, 1322 (Fed. Cir. 2004). The Federal Circuit affirmed the district court's conclusion of obviousness because the patent owner did not show a teaching away or unexpected results. *Id.* at 1373–74.

Because claim 12 does not recite any specific size requirements, respondents' arguments on *Tyco* are beside the point. Rather, as respondents also acknowledge, the '178 patent discloses a width for the entire ring, "in the range of 'approximately 3 mm to 8 mm,'" narrower than the GMBPow width of 10 mm. *Id.* at 59, *citing* '178 patent at 17:9–18. Respondents argue that this "would be well-within the range of what [one of ordinary skill in the art] would consider acceptable," Resp. Br. at 59, but this is belied by the testimony of the inventor, Mr. Strasser, who testified that the GMBPow battery was "just slightly too wide for us," Strasser Tr. at 598:15–17, as well as the testimony of the inventor Mr. von Badinski, who testified that "this [] would mean

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[redacted]

our ring [] would have been 12 millimeters wide. . . . [T]hat becomes really unwieldy for people with really small hands. So this wouldn't have been an option for us." von Badinski Tr. at 192:13–25.

In disclosing batteries with a range in capacity of 25–43 mAh, Respondents also argue that GMBPow would have provided adequate power for the claimed wearable ring device. Resp. Br. at 59–60 and RX-0030.1–2. Dr. Rosing credibly testified, however, that GMBPow's batteries were unsuitable for use in a finger-worn ring device because "you can pull out of [GMBPow's] battery only 5 milliamps," which would not be sufficient. Rosing Tr. at 1215:19–1216:7. Respondents argue, without citation, that "[Dr.] Rosing also misunderstands GMBPow, highlighting her lack of experience designing or implementing batteries for wearable consumer devices," Resp. Br. at 59, but do not otherwise refute her argument regarding how one of skill would interpret GMBPow's disclosure in view of the disclosed discharge current.

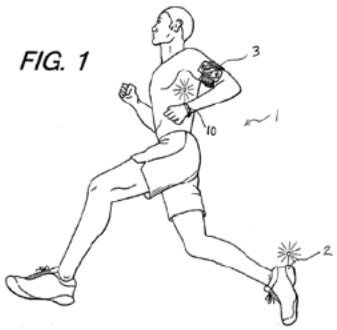
The evidence does not support that one of skill would have been motivated to modify Niwa as proposed by respondents. As a result, and accounting for the objective indicia discussed below, respondents have not shown by clear and convincing evidence that the combination of Niwa and GMBPow renders claim 12 obvious.

ii. Henderson

Respondents contend that one of skill would have been motivated to modify Niwa to include Henderson's curved battery, rendering claim 12 obvious. Resp. Br. at 60–61. Oura disagrees. Oura Reply at 27–28.

Henderson discloses a wrist-wearable device for monitoring athletic activity. CX-1139 at [0055] ("As further shown in FIGS. 2-6, the wearable device assembly 10 is annular or generally circular in shape and, in this illustrative example, is configured for wearing around a user's wrist."). Henderson shows a person wearing assembly 10 in Fig. 1:

[redacted]



Henderson at Fig 1.

Respondents argue that one of skill would have considered all types of wearables, and that size "cannot be used to distinguish the art." Resp. Br. at 60. Yet Dr. Rosing provided credible testimony that one of skill would not have looked to the wrist-worn device of Henderson for curved batteries to modify Niwa's finger ring. *See* Rosing Tr. at 1214:6–24. As Dr. Rosing testified, "I don't see any reason why [one of skill] at that time could expect to shrink this larger-size wristband with two batteries into a finger form factor." *Id.* at 1214:12–17, *referring to* Fig. 6 of Henderson, which depicts two batteries 142 disposed within device 10.

Respondents argue that the testimony of the inventor, Mr. Strasser, demonstrates that one of skill would have looked to Henderson. Resp. Br. at 60–61, *citing* Strasser Tr. at 590:12–591:4. It does not. Mr. Strasser testified that considering wrist devices, the size of the battery would need to change and capacity would be lost. This would require finding someone to modify the battery. *Id*. The most Mr. Strasser said was that "overall the concept of how you form a ring – a battery into a curved shape was established." *Id*. at 590:24–591:2. The "concept" of having a curved shape in Henderson does not support modifying Niwa particularly when that modification would contradict Niwa's teachings of a "highly flat" battery. *See* Niwa at [0214]. In any event, respondents' reliance on Mr. Strasser's testimony is misplaced: "The inventor's own path itself never leads to a conclusion of obviousness; that is hindsight. What matters is the path that the person of ordinary skill in the art would have followed, as evidenced by the pertinent prior art."

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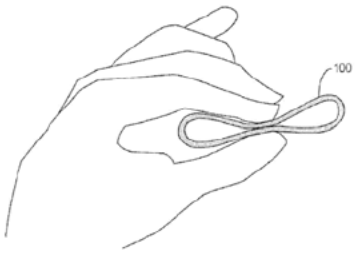
Otsuka Pharm. Co., Ltd. v. Sandoz, Inc., 678 F.3d 1280, 1296 (Fed. Cir. 2012); and *see* 35 U.S.C. § 103(a) ("Patentability shall not be negatived by the manner in which the invention was made.").

The evidence thus does not support that one of skill would have been motivated to modify Niwa based on Henderson. As a result, and accounting for the objective indicia discussed below, respondents have not shown by clear and convincing evidence that the combination of Niwa and Henderson renders claim 12 obvious.

iii. Webster

Respondents contend that one of skill would have been motivated to modify Niwa to include Webster's curved battery, rendering claim 12 obvious. Resp. Br. at 61. Oura disagrees. Oura Reply at 30.

Webster is directed to "an elastic vaginal ring temperature sensing device that can comprise an elastic ring structure and incorporated wireless transmitting arrangement." Webster at 1:41–43. Webster's device includes a transmitter assembly that may include components such as a temperature transducer and a radio transmitter, along with a battery to provide power to those components. *Id.* at 3:50–66. Webster depicts a human hand compressing its elastic vaginal ring 100 between a thumb and forefinger:



Webster at Fig 5. While respondents concede that Webster is not finger-worn, they contend that its battery would still be within the category of products considered by one of skill. Resp. Br. at 61, *citing* Alarcon Tr. at 1009:18–1010:7. Respondents rely on Mr. Alarcon's testimony that

[redacted]

Webster would have been considered because it "is just another example in this broad category of devices that take biological data, they are wearable, there are batteries." Alarcon Tr. at 1010:3–6. Mr. Alarcon testified that it did not matter that Webster is a vaginal device and that it has "[a] lot of similarities" to a ring worn on a finger. *Id.* at 1009:18–1010:7. Webster states that its "elastic ring structure can be forced into a spring loaded state when elastically deformed thus becoming retained when disposed in a vaginal vault." Henderson at Abstract. The evidence does not support that there are "a lot of similarities" between a finger-worn device and one "disposed in a vaginal vault" and I find Mr. Alarcon's testimony on this point not credible.

Respondents' argument is further undercut by Dr. Rosing's credible testimony that one of skill would not have modified Niwa's ring to incorporate Webster's batteries because Webster is directed to a flexible vaginal ring that is up to four inches in diameter. Rosing Tr. at 1215:2–10; *see also* Webster at 3:35–38 ("In one embodiment, the flexible circuit board arrangement 102 can be approximately six inches long and 0.2 inches wide adapted to be accommodated by a two inch diameter vaginal ring 100.").

In addition, Mr. Alarcon relies on the same reasoning as the motivation to combine with respect to all of "the battery art." *See id.* at 1008:21–22. This reasoning boils down to that it would have been obvious to include a curved battery in a wearable ring because the ring itself is curved. *See id.* at 1007:2–16. Mr. Alarcon's testimony does not explain why one of skill "would have combined elements from specific references *in the way the claimed invention does*." *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (emphasis in original), *citing KSR*, 550 U.S. at 418. As explained above, Niwa expressly discloses the advantages of a stacked arrangement in which the "highly flat" battery is disposed above the finger and disparages extending the area of the battery in the lateral direction. *See* Niwa at [0217]

[redacted]

("[When] the battery 24 formed as highly flat is located right above the finger 2, . . . the consciousness of the examinee for wearing the plethysmogram sensor 1 can be reduced.").

The evidence does not support that one of skill would have been motivated to modify Niwa based on Webster. As a result, and accounting for the objective indicia discussed below, respondents have not shown by clear and convincing evidence that the combination of Niwa and Webster renders claim 12 obvious.

2. Niwa in View of Schröder

Respondents contend that the combination of Niwa and U.S. Patent No. 10,303,867, issued to Schröder, RX-0018, renders obvious asserted claims 1, 2, 13, and 14. Resp. Br. at 47–55. Oura disputes that this, Oura Reply at 17–25, as does the Staff, Staff Br. at 55–56.

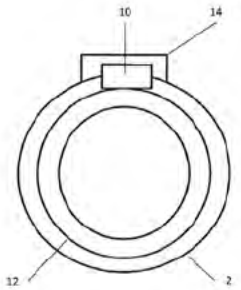
a. Overview of Schröder

The evidence supports that Schröder, which issued on May 28, 2019, from a priority application filed July 25, 2013, is prior art to the '178 patent under 35 U.S.C. § 102(a)(2). Resp. Br. at 11.

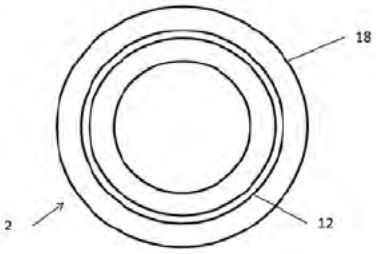
Schröder is titled "External Secure Unit" and discloses a finger-ring used as an external unit. The ring stores security-related data for executing applications, such as Facebook, Twitter, or banking services, on a smartphone. Schröder at 3:57–4:22. The ring includes a processor and an antenna for communication with the smartphone. *Id.* at 4:7–10. Schröder discloses integrating an antenna coil 8 and a chip module 10 into its finger-ring and further discloses configuring the antenna coil 8 in several different ways to improve its coupling. *Id.* at 5:12–6:30. In one embodiment, a power supply may be "effected as usual via an electromagnetic field of a reader," 6:36–38, while in another embodiment, "the external secure unit has an energy storage device, e.g. an accumulator or a battery," *id.* at 11:46–48.

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Two embodiments are shown, one in Fig. 3 with a replaceable chip module 10 on top of the ring, and another in Fig. 4 with an inlay 12 in the ring structure, as shown below:

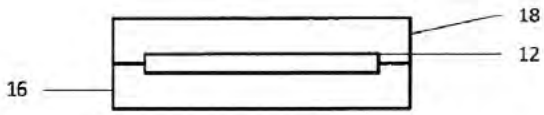


Schröder, Fig. 3



Schröder, Fig. 4

In Schröder's Fig. 4 embodiment, the finger-ring 2 includes halves 16 and 18 joined with inlay 12 interposed between them, such that the two halves 16 and 18 have respective recesses to accommodate inlay 12, as shown below:



Id. at 12:4–10 and Fig. 7. An antenna coil 8 and a chip module 1 are located on the carrier material of inlay 12. *Id.* at 12:30–42.

b. Motivation to Combine Niwa and Schröder

Respondents argue that one of skill would have been motivated to combine Niwa and Schröder because they are analogous art that "teach similar improvements over similar ring devices (e.g., biometric sensing) with similar components and technology." Resp. Br. at 53. In particular, respondents contend that Schröder's ring includes external and internal housing components, with an inlay therebetween, and that one of skill would have been motivated to combine Niwa and Schröder because both disclose "finger-worn devices for sensing, detecting user activity and/or physiologic parameters." *Id.*, *quoting* Alarcon Tr. at 998:7–11.

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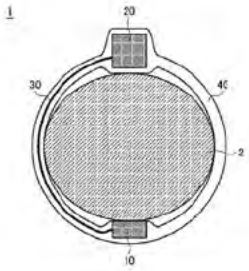
Oura argues that one of skill would not have been motivated to combine Niwa and Schröder because Niwa is directed to a health monitoring device, while Schröder discloses an RFID security device. Oura Reply at 17–18. According to Oura, Niwa seeks to improve the accuracy of a plethysmogram sensor, while Schröder's focus is an improved antenna. *See id.* The Staff agrees with Oura that respondents have not demonstrated that one of skill would have combined Niwa and Schröder. Staff Br. at 56.

While Niwa and Schröder are both directed to ring-based devices, respondents have not shown by clear and convincing evidence that one of ordinary skill in the art would combine them to arrive at the invention of claim 1. *PharmaStem Therapeutics*, 491 F.3d at 1360 (an obviousness defense requires "clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process"). First, Schröder's design, while disclosing separate housing components, only contemplates the inclusion of an inlay between them. Schröder at 8:54–57 (regarding Fig. 3), 12:4–9 (regarding Fig. 4). Dr. Rosing credibly testified that one of skill would understand that the thickness of Schröder's inlay is on the order of 100 microns. Rosing Tr. at 1218:18–25. This stands in stark contrast to the battery in Niwa's sensor, which is between two and five mm, or at least 20 times the thickness of the inlay. *See* Niwa at [0201]. Respondents provide no logical reason why one of skill would modify Niwa's ring to accommodate Schröder's 100-micron inlay, when Niwa's components take up a much larger volume.

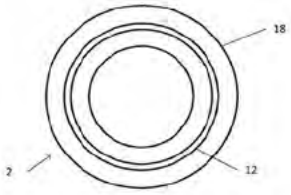
Respondents' proposed combination also fails to address fundamental design differences between Niwa and Schröder. Niwa is directed to a ring in which a flat battery 20 is disposed above the user's finger and a sensor 10 is disposed below, as shown below:

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[redacted]



Niwa, Fig. 22



Schröder, Fig. 4

Respondents propose combining asymmetric Niwa with the symmetric embodiment of Schröder's Fig. 4, despite Niwa's express teachings that run counter to the proposed modifications. In particular, Niwa teaches both a flat battery and stacking the components in the second unit 20 to reduce the area of the substrate in the second unit 20 so as not to protrude from the third joint of the finger. *See* Niwa at [0217] and [0219]. Respondents' proposed combination both replaces Niwa's flat battery with a curved battery and eliminates its stacking solution. Alarcon Tr. at 1001:14–1003:3. This would also eliminate the asymmetry that Niwa teaches may be useful in maintaining the proper orientation of the sensor on the finger. *See* Niwa at [0203]. Respondents have not explained why one of skill would modify Niwa as they propose. Their obviousness challenge fails for this reason.

c. Elements 1[a], 1[b-i], and 1[b-ii]

Elements 1[a], 1[b-i], and 1[b-ii] recite an "external housing component" and an "internal housing component" and that "the internal housing component coupled with the external housing component." The internal and external housing component terms were construed as having their plain and ordinary meaning, which is "an [internal/external] structure that encloses space and which does not necessarily exclude potting material." Order No. 17 at 14. "Coupled with" was construed as having its plain and ordinary meaning, which is "connected with." *Id.* at 5.

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[redacted]

Respondents contend the combination of Niwa and Schröder renders these limitations obvious. Resp. Br. at 47–49. Oura disputes this. Oura Reply at 23–24. The Staff agrees with Oura. Staff Br. at 55–56.

Respondents contend that one of skill would modify Niwa's housing to have separate internal and external components that are coupled and include the inlay of Schröder, such that Niwa's components would be configured within the inlay. Resp. Br. at 47–49. Yet respondents fail to address Niwa's express disclosures that disparage modifying Niwa's device. In particular, Niwa discloses that the area of the first and second substrates in the second unit 20 should be minimized to reduce the consciousness of the user. *See* Niwa at [0214] and [0219]. Niwa further discloses the benefits of having a thicker second unit relative to the first unit to allow the user to more easily orient the device. *See id.* at [0203]. Respondents' proposed modifications extend the area of the battery, increase the area of the substrate (i.e. the PCB) – by eliminating Niwa's stacked arrangement, and reduce asymmetry between the thickness of the first and second sensors, all of which Niwa endorses.

While respondents contend that "Schröder simply teaches how to build a ring housing," Resp. Br. at 54, their proposed combination requires far more modification. *Id.* at 47–55. Even if one of skill was motivated to combine Niwa and Schröder to "build a ring housing," respondents have not shown that the proposed combination renders claim 1 obvious because Niwa teaches a first unit on the ball of the finger and a much thicker second unit above the finger. *See* Niwa at [0202–03], [0219]. Schröder's solution, in which the overall thickness of the ring is slightly and uniformly increased to accommodate an inlay, directly contradicts the teachings of Niwa.

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[redacted]

The evidence does not support that one of skill would combine Niwa and Schröder in the way proposed by respondents or that the combination renders obvious elements 1[a], 1[b-i], and 1[b-ii].

d. Elements 1[c-i] and 1[c-ii]

Element 1[c-i] recites "a battery positioned within a cavity formed between the internal housing component and the external housing component," and element 1[c-ii] recites "wherein the battery comprises a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component." Respondents contend the combination of Niwa and Schröder renders these elements obvious. Resp. Br. at 49–52. Oura disputes this. Oura Reply at 23–24. The Staff agrees with Oura. Staff Br. at 55–56.

Respondents argue that Schröder "shows a cavity formed by the internal and external housing components, in which the battery would reside." Resp. Br. at 49, *citing* Alarcon Tr. at 1000:8–15, RDX-0001C-104; and Schröder at Fig. 4. Schröder, however, does not in fact disclose that the battery would be in the cavity of Fig. 4. Schröder discusses the possibility of a battery (although it does not show it) when addressing Fig. 3 but not when addressing the embodiment shown in Fig. 4. Schröder at 11:46–67. In Fig. 3, the chip module 10 is disposed above and outside of the inlay 12. While Schröder explains that the battery is "connected to the chip module 10" and that it may be used "to increase the range of the antenna coil 8" or "to operate alternative communication channels" and "electronic components," there is no disclosure in Schröder that the battery is disposed in the inlay embodiment of Fig. 4. While respondents contend that "Schröder also discloses that the battery can reside within the curved recess shown in Figures 4-10 and would be connected to the chip module 10 that resides within the recess between components 16 and 18," Resp. Br. at 50 (emphasis removed), *citing* Alarcon Tr. at 1000:7–1001:11, there is, simply, no

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[redacted]

such disclosure in Schröder. Read in context, the evidence supports that one of skill would understand that Schröder's battery would be placed adjacent to the chip module 10 of Fig. 3. *See* Rosing Tr. at 1224:11–1225:23. For instance, one of the disclosed purposes of the battery is to provide power for "wireless LAN." Schröder at 11: 55–57. As Dr. Rosing testified, "Wireless LAN consumes between 100 to 500 milliamps," which requires roughly 20 times the capacity of the GMBPow battery. Rosing Tr. at 1224:19–25. The evidence supports that one of skill would understand that Schröder's battery, capable of powering wireless LAN and thus requiring 20 times more power than a battery such as that shown in GMBPow, would be placed adjacent to the chip module 10 in Fig. 3 of Schröder and not within the inlay of Fig. 4. *Id*.

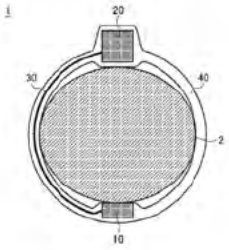
Respondents rely on the testimony of Mr. Alarcon, who testified that, based on Schröder's description of the inlay, one of skill would understand that "there is a cavity formed all the way around by the internal housing component and the external housing component, and that is where, within the annular cavity, that is where the PCB would reside, as well as the battery to power the electrical components mounted to the printed circuit board." Alarcon Tr. at 1000:10–15. Mr. Alarcon further testified that this also discloses a "curved battery" so "they could get more capacity than if they had just used a flat battery," and that this curved battery would be located in the cavity "where the inlay resides." *Id.* at 1000:18–1001:11. Mr. Alarcon's testimony that "they could get more capacity than if they had just used a flat battery," conflicts with Dr. Rosing's credible testimony that "[b]atteries that are flat actually have higher energy density than batteries that are curved." Rosing Tr. at 1201:20–24.

More problematically, Mr. Alarcon's testimony was improperly guided by hindsight. *See Apple Inc. v. MPH Technologies Oy*, 28 F.4th 254, 262–63 (Fed. Cir. 2022). Mr. Alarcon testified that one of skill would understand that the battery would be disposed in the inlay of Schröder's

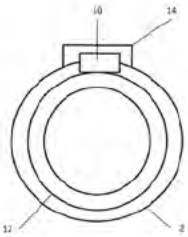
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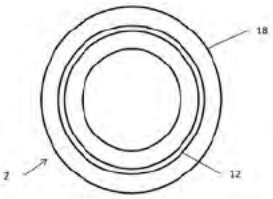
Fig. 4 because, "where else is it going to be?" Alarcon Tr. at 1090:9–13. This reasoning, however, is belied by Schröder itself, which only addresses a battery with respect to Fig. 3. Schröder at 11:45–67 (discussing battery in reference to embodiment of Fig. 3, where chip module 10 is disposed above the finger rather than on the inlay). That embodiment includes a compartment disposed on top of the ring, similar to the embodiment of Niwa's Fig. 22, as shown below. Schröder's Fig. 4, below to the right, does not:



Niwa, Fig. 22



Schröder, Fig. 3



Schröder, Fig. 4.

Respondents contend that one of skill would modify Niwa with Schröder's Fig. 4 embodiment, but do not explain why they would look to this embodiment instead that in Fig. 3, which more closely resembles Niwa. In addition, the evidence supports that a battery is not required in Schröder's Fig. 4. Dr. Rosing credibly testified that NFC and RFID (the focus of Schröder) "can operate in a passive manner, meaning that you don't need a battery." Rosing Tr. at 1217:7–1218:1.

In addition, respondents do not explain why one of skill would modify Niwa in express contravention of its teachings. In particular, Niwa discloses the importance of a flat battery, and stacking the electronic components above the finger to reduce the consciousness of the user. Niwa at [0217]. Schröder discloses an embodiment (Fig. 3) that aligns with Niwa's express teachings, allowing for a flat battery and stacked components, yet respondents combine Niwa with an embodiment of Schröder lacking a suitable place for a flat battery, or a stacking structure.

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[redacted]

The evidence does not support that one of skill would combine Niwa and Schröder in the way proposed by respondents or that the combination renders obvious elements 1[c-i] and 1[c-ii].

e. Conclusion

Accounting for the objective indicia discussed below, respondents have not shown by clear and convincing evidence that the combination of Niwa and Schröder renders obvious claim 1 or dependent claims 2, 13, and 14.

D. Objective Indicia of Non-obviousness

Oura contends that the commercial success of the Oura Ring Gen. 3 and Gen. 4, along with copying, industry praise, failure of others, and long-felt but unmet need, are objective indicia supporting the non-obviousness of the asserted claims. Oura Reply at 31–45. The Staff agrees that these objective indicia weigh against a finding of obviousness. Staff Br. at 58–61. This is disputed by respondents. Resp. Br. at 64–70.

"Objective indicia of non-obviousness must be considered in every case where present." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016). Evidence of such indicia "may often be the most probative and cogent evidence in the record," *id.* at 1052, *quoting Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983), and "guard against slipping into use of hindsight." *Id.*, *quoting Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966). Such evidence can include "commercial success enjoyed by devices practicing the patented invention, industry praise for the patented invention, copying by others, and the existence of a long-felt but unsatisfied need for the invention." *Id.*

I considered and weighed the objective indicia of non-obviousness before reaching all conclusions in the above obviousness analysis, and I discuss these objective indicia below. *Apple Inc. v. Samsung*, 839 F.3d at 1038. If Oura had submitted no evidence of objective indicia, I would still find that the asserted claims were not proved obvious.

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[redacted]

1. Nexus

To accord substantial weight to secondary considerations, the evidence must have a nexus to the claims. That is, there must be a legally and factually sufficient connection between the evidence and the patented invention. The patentee bears the burden of showing that a nexus exists. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). "A showing of nexus can be made in two ways: (1) via a presumption of nexus, or (2) via a showing that the evidence [of secondary considerations] is a direct result of the unique characteristics of the claimed invention." *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1210 (Fed. Cir. 2023).

Oura argues that it is entitled to a presumption of nexus because the products it relies on, its Gen. 3 and Gen. 4, are commercial embodiments and coextensive with the asserted claims. Oura Br. at 31. As detailed above with respect to technical domestic industry, the evidence supports that Gen. 3 and Gen. 4 embody the asserted claims. *See also* Sarrafzadeh Tr. at 1277:17–20.

To overcome the presumption of nexus, respondents must present "evidence that shows the proffered objective evidence was due to extraneous factors other than the patented invention." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1329 (Fed. Cir. 2016) (cleaned up). "Such extraneous factors include additional unclaimed features and external factors, such as improvements in marketing." *Id.* "[A] patent challenger cannot successfully rebut the presumption with argument alone — it must present evidence." *Id.*

Respondents argue that Oura is not entitled to a presumption of a nexus because "Oura's marketing prowess—not the claimed invention—accounts for any alleged success of the Oura Gen 3 and Gen 4 rings." Resp. Br. at 65. Respondents contend that "Oura spent more than [redacted] than it did [on] research and development of its rings," pointing to a document it contends supports that Oura spent [redacted] on marketing and [redacted] on research and

[redacted]

development and to testimony from Mr. Chapp. As Mr. Chapp testified, however, the specific portion of the document respondents rely on only accounts for certain research and development expenses and does not account, for example, for Oura's expenses in labor for its research and development and technical support. Chapp Tr. at 135:9–137:12; CX-0042C.0006, 15 and 24 and CX-0736 (research and development and technical support labor expenses). The evidence supports that those combined expenses are robust and have been increasing year-on-year. *See* CX-0736.

The evidence supports that Oura's sales and marketing expenses as compared to revenues have decreased significantly from fiscal year 2022 through the second half of fiscal year 2024. Mulhern Tr. at 1266:3–25 and *see* CDX-0007C.7. The evidence supports that this ratio is now [redacted], down from [redacted] in fiscal year 2023 and [redacted] in fiscal year 2022. *Id*. The evidence supports that those percentages are [redacted] of other companies in the fitness tracker and smartwatch industries and with companies having the same standard industrial classification (SIC) code as Oura. Mulhern Tr. at 1269:2–1270:21 and *see* CDX-0007C.7. Respondents have not rebutted the presumption of nexus based on Oura's marketing expenditures.

Respondents also contend that Oura's marketing focus has little to do with the technology claimed in the '178 patent and is directed instead to "mobile app features, not the claimed ring components." Resp. Br. at 66, *citing* RX-0036C.9–10. That document, however, and those pages in particular, focus on the ring itself and identify one of Oura's 2023 goals as solidifying "Oura as the gold standard of the wearable industry, as new competitors emerge." The evidence cited by respondents does not show that Oura's marketing focus was on unpatented features.

As for whether Oura's app is responsible for the success of the product, as respondents contend, the evidence supports that success of Gen. 3 and Gen. 4 is tied to the "unique characteristics of the claimed invention." *See Fox Factory*, 944 F.3d at 1373–74. As Mr. Chapp

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testified, for Oura, "[i]t starts off with the ring" and how to "take something that looks really complex and make it look really simple." Chapp Tr. at 88:2–8 and 89:3–9. This was confirmed by inventor Strasser who stressed the importance of the ring form factor with the technology inside. Strasser Tr. at 573:5–7 and 576:2–12. The evidence supports that "the ring form factor is the foundation of the system that enables the data collection, that then in turn enables the functionality of the device." Mulhern Tr. at 1271:2–15. Thus, while the app may be part of the user's experience with the Gen. 3 and Gen. 4, and may be the focus of some of Oura's marketing efforts, the evidence supports that the driver of the experience is the ring itself.

The Federal Circuit has "never held that the existence of one or more unclaimed features, standing alone, means nexus may not be presumed" because "there is rarely a perfect correspondence between the claimed invention and the product." *Fox Factory*, 944 F.3d at 1374; *Teva Pharms. Int'l GmbH v. Eli Lilly & Co.*, 8 F.4th 1349, 1360–61 (Fed. Cir. 2021) (same). Oura is entitled to a presumption of nexus to the extent that its objective evidence is tied to a specific product that embodies the claimed features, and is coextensive with them. *Volvo Penta*, 81 F.4th at 1210. The evidence supports that Oura is entitled to a presumption of nexus, which respondents have not rebutted.

2. Commercial Success

Oura argues that the Gen. 3 and Gen. 4 have been commercially successful. *See* Oura Reply at 31–36. The Staff agrees that this commercial success indicates non-obviousness. Staff Br. at 59.

Respondents contend that any alleged commercial success of Gen. 3 and Gen. 4 is due to factors unrelated to the '178 patent claims, which they contend is demonstrated by the failure of the Motiv Ring. Resp. Reply at 64–65.

The Motiv Ring was developed by the company that filed the original patent application from which the '178 patent ultimately issued. Chapp Tr. at 111:2–11. Respondents argue that the

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Motiv Ring included an internal housing component, a battery, and a PCB. Resp. Br. at 64, *citing* Alarcon Tr. at 1011:11–1012:24; RX-0035C; and Strasser Tr. at 587:9–588:1. Yet, as Mr. Alarcon admitted, he did not perform a "limitation-by-limitation analysis" of the Motiv Ring. Alarcon Tr. at 1012:13–16. Respondents have therefore not shown that the Motiv Ring practices any asserted claim of the '178 patent, and the commercial success or failure of the Motiv Ring is irrelevant to the obviousness analysis for that reason alone.

But even if respondents had demonstrated that the asserted claims cover the Motiv Ring, the evidence is equivocal as to whether it was a commercial failure. Motiv sold over 80,000 of its rings. von Badinski Tr. at 197:16–198:2. The product was well-received at trade shows, winning an award for innovation at the 2017 Consumer Electronics Show. Strasser Tr. at 621:3–24. While Motiv ultimately failed as a company, many contributing factors, such as product quality control relating to ring coatings, melting chargers, poor customer support, difficulties raising additional venture capital, and internal turmoil, render it unclear that Motiv's ultimate inability to maintain itself as a company can be attributed to commercial failure of the Motiv Ring itself. von Badinski Tr. at 198:3–199:23 and Mulhern Tr. at 1264:3–19.

Respondents further contend that Oura's commercial success derives from marketing, and that this marketing has little to do with the technology claimed in the '178 patent. Resp. Br. at 65–66. But as explained previously, Oura's marketing expenses are [redacted] similar companies and the ratio of marketing expenses to revenues has been steadily decreasing over time. In addition, the evidence supports that revenues from sales of Oura products embodying the claims grew from approximately [redacted] in 2022 to [redacted] in 2023, and then to [redacted] in the first two quarters of 2024. Mulhern Tr. at 1258:7–20; CX-0723C; CX-0581C; CX-0955C, and CX-0958C. As. Ms. Mulhern testified, Oura exhibited a similar growth rate with respect to Oura's

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[redacted]

membership subscribers, increasing from [redacted] in September 2022 to [redacted] in September 2023, and then [redacted] in March 2024. Mulhern Tr. at 1259:4–9; CX-0042C; and CX-0573C.

This factor weighs in favor of a determination of non-obviousness for the asserted claims.

3. Copying

Oura argues that both RingConn and Ultrahuman "bought Oura Ring Gen. 3 products, tore them down, and copied Oura Ring's structural design in their own products." Oura Reply at 36. The Staff agrees that the evidence supports copying. Staff Br. at 59–60.

The question of copying here is a close one. Oura presents evidence that respondents' rings are very similar to its rings and the evidence supports that both RingConn and Ultrahuman had access to Oura's Gen. 3 product and looked at it when designing their rings. Oura Reply at 36–42. I agree with Oura that Mr. Kumar's testimony that Ultrahuman was inspired by the Aina ring is not credible. Oura Reply at 38, *citing* Kumar Tr. at 637:11–639:5. The products look nothing alike. *Compare* CX-0538 *with* CX-0945. I also do not credit Mr. Wang's testimony that he took a hammer to the Oura ring he looked at when designing the RingConn ring and therefore did not learn any useful information. I agree with Oura that it strains credulity, that is, it is not believable, that a sophisticated professional with a doctoral degree would not know of a way of tearing down the Oura Gen. 3 other than to smash it with a hammer. Oura Br. at 40 and Wang Tr. at 1161:17–1163:20. I also do not credit Dr. Wu's testimony that the Oura ring RingConn "took apart" was "destroyed in the process" because I do not credit Mr. Wang's testimony that he smashed it with a hammer. Wu Tr. at 761:11–16. In addition, Dr. Wu's testimony that, based on analysis of the Oura ring, RingConn determined that its wireless charging feature "is not good" is inconsistent with his testimony that the Oura ring was destroyed in the process of looking at it. *Id*. It is not credible that RingConn determined that the Oura wireless charging feature was "not good" if the ring was destroyed by being smashed by a hammer. I also find Mr. Wang's testimony at the

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[redacted]

evidentiary hearing that the "one purpose" of acquiring and looking at the Oura ring was [redacted] lacks credibility. Wang Tr. at 1160:17–1161:1. At deposition, Mr. Wang testified that he took an Oura ring apart [redacted] *Id.* at 1161:2–16. Mr. Wang's explanation that "wireless charging is part of the specifications" is not credible. As detailed previously and for these additional reasons, Mr. Wang was not a credible witness.

While the evidence supports that respondents' accused products are similar to Oura's Gen. 3, and supports that respondents considered Oura's Gen. 3 when designing their products, the evidence does not support that respondents' products are so overwhelmingly similar to Oura's Gen. 3 as to support a finding of copying. Each is shown below:



CX-0702 (Oura Ring Gen. 3)



CX-0538 (Ultrahuman)



CX-0843 (RingConn)

"Not every competing product that arguably falls within the scope of a patent is evidence of copying. Otherwise every infringement suit would automatically confirm the non-obviousness of the patent." *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). "Rather, copying requires the replication of a specific product." *Id.* Although it is a close case, the evidence here does not demonstrate replication. Accordingly, this factor does not support non-obviousness.

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[redacted]

4. Industry Praise

Oura argues that industry praise supports non-obviousness of the asserted '178 patent claims. Oura Br. at 42–43. The Staff agrees. Staff Br. at 61.

Respondents contend that certain of the industry praise pre-dates release of the Gen. 3 and should thus not be considered. Resp. Br. at 66. Oura recognizes this and does not rely on evidence of praise of earlier versions of the Oura ring. Oura Reply at 43.

Respondents also contend that some of the praise relates to features not related to the actual ring, such as readiness score, sleep and recovery scores, accurate tracking, and fertility monitoring. Resp. Br. at 66–67. I agree with Oura that those functionalities are possible because of the design of the ring itself. *See* Oura Reply at 43. Moreover, the evidence demonstrates substantial praise for the design of the Oura Gen. 3 itself, which respondents do not address or refute. Resp. Br. at 66–67 and Oura Reply at 42, *citing* CX-0618 (Wearable of the Year describing Oura product as "never [] far from our minds – or our index fingers" and stating that "[m]any smartwatches and tracker brands would be envious of what Oura has achieved, and it's done it in a smaller, more complicated package," and "[t]he Oura Ring 3 is a brilliant wearable in its own right but it could also be responsible for powering the whole smart ring movement"); CX-0629.0010 ("At first glance, the Oura Ring looks just like a regular ring. Dr. Porter, who recommends Oura, says he uses it because it's comfortable to sleep with and convenient."); CX-0612.0022 ("[T]he Oura ring is perhaps the most stylish and subtle wearable we've seen"); and Rosing Tr. 1231:13–1232:6.

The evidence demonstrates industry praise, supporting non-obviousness.

5. Failure of Others

Oura argues that others failed in achieving the results of the asserted '178 patent claims. Oura Reply at 43–44. Oura cites the efforts of Yang and Asada at MIT to achieve a wearable ring device for healthcare monitoring, and argues that neither was able to package the components

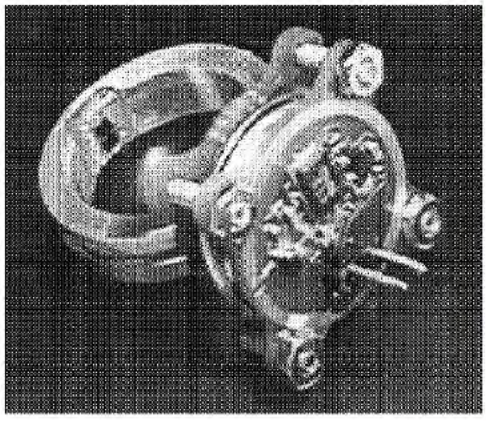
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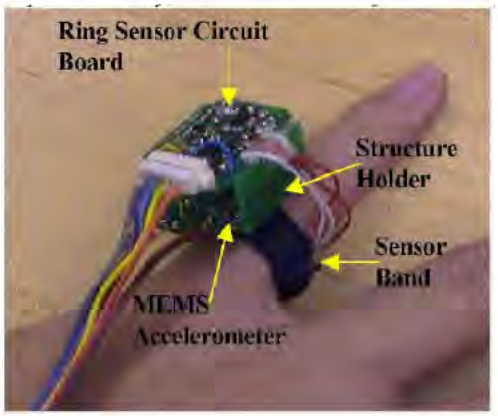
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neatly within a ring housing. *See id.*, *citing* CX-1121; CX-1122; CX-1123; CX-1127; and CX-1133.

Respondents argue that Niwa demonstrates that others did not fail in achieving the invention of claim 1 of the '178 patent. Resp. Br. at 70. However, as explained above, Niwa does not anticipate claim 1, at least because Niwa's ring does not include internal and external housing components and Niwa's battery is not configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component. The Staff agrees with respondents that Oura has not demonstrated failure of others, because Dr. Rosing's testimony pertained to the "size and shape of the prior art," which are "not claimed by the '178 patent." Staff Br. at 60–61.

Dr. Rosing testified that "Asada [] dreams of a ring but what he actually builds is a stacked sandwich of PCB boards with a flat coin cell style battery." Rosing Tr. at 1231:6–12. As shown below, neither Yang nor Asada were able to achieve the subject matter claimed in the '178 patent, such as "wherein the battery comprises a shape and size configured to fit within the cavity between the outer circumferential surface of the external housing component and the inner circumferential surface of the internal housing component."





CX-1121 (Yang); CX-1123 (Asada).

[redacted]

This factor weighs in favor of a determination of non-obviousness of the asserted claims.

6. Long-Felt But Unmet Need

Oura argues that the asserted '178 patent claims met a long-felt but unmet need for "compact, wearable monitoring systems with continuous monitoring of health conditions and sleep." Oura Reply at 44–45. Dr. Rosing testified that "there was a long-felt but unresolved need for compact wearable monitoring systems, that allowed 24-hour monitoring of health conditions in the form of the ring." Rosing Tr. at 1228:15–19. She also testified that consumers "really wanted to be able to monitor what's going on 24 hours a day without having to be continually aware of it," and that "[a] ring became second nature," such that "you kind of forget that it's on your finger." *Id.* at 1229:20–1230:8.

Respondents argue that Oura has not demonstrated long-felt but unmet need because Dr. Rosing's testimony is directed to unclaimed features such as comfort and health monitoring. Resp. Br. at 69–70. The Staff agrees with respondents. Staff Br. at 60.

The record evidence demonstrates a long-felt but unresolved need for a compact, comfortable ring that could provide continuous health monitoring, and that others failed to provide such a wearable monitoring system. *See, e.g.*, CX-0598.0003 ("I don't always want to wear a watch. . . . However, the [Oura] ring can do its thing without being a bother."); CX-0603.0007 ("[T]he Oura Ring is sleek and compact. . . . It's the most wearable ring of its class, and way less noticeable than any watch could ever be. I've even slept with it on my index finger every night since first getting it, it's really that comfortable."); CX-0599.0003 ("The biggest reason I wear an Oura Ring is for sleep tracking. . . . That's where a smart ring comes in – it's far less intrusive to wear to bed than a smartwatch, and once you get used to it, you pretty much forget it's there.").

This factor weighs in favor of a determination of non-obviousness of the asserted claims.

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X. ECONOMIC PRONG

A. Legal Standard

Section 337(a)(3) identifies criteria for determining the existence of a domestic industry:

> For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned --
>
> (A) significant investment in plant and equipment;
>
> (B) significant employment of labor or capital; or
>
> (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. §1337(a)(3).

Because the statutory criteria are listed in the disjunctive, satisfaction of any one of them is sufficient to meet the economic prong. *Lashify, Inc. v. Int'l Trade Comm'n*, 130 F.4th 948, 957–958 (Fed. Cir. 2025).

"The relevant date at which to determine whether the domestic industry exists or is in the process of being established is the filing date of the complaint." *Certain Televisions, Remote Controls, and Components Thereof*, Inv. No. 337-TA-1263, Comm'n Op. at 20 (Nov. 30, 2022) (EDIS Doc. ID 785368), *citing Motiva, LLC v. Int'l Trade Comm'n*, 716 F.3d 596, 601, n.6 (Fed. Cir. 2013) (affirming use of the complaint filing date to determine whether complainant demonstrated that an industry exists or is in the process of being established). "The Commission has explained that it will consider post-complaint evidence regarding domestic industry only in very specific circumstances, *i.e.*, when a significant and unusual development has occurred after the complaint has been filed." *Id.* (citations removed).

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[redacted]

B. The Domestic Industry Timeframe

Oura contends that it satisfies the economic prong under section 337(a)(3)(A) and (B) and relies on investments it made in FY2022 (Oct. 2021–Sept. 2022), FY2023 (Oct. 2022–Sept. 2023), and Q1–Q2 of FY2024 (Oct. 2023–Mar. 2024). Oura Br. at 108–122. Oura relies on its Gen. 3 and Gen. 4 products as supporting its domestic industry. *Id.* The Gen. 3 was launched in October 2021 and the Gen. 4 was launched in October 2024. Chapp Tr. at 92:2–6 (Gen. 3) and 14–20 (Gen. 4).

Respondents contend that Oura's proposed timeframe is improper because portions of it precede: (1) Oura's acquisition in May 2023 of rights in the patent family from which the '178 patent issued; (2) filing of the application that issued as the '178 patent later in May 2023; and (3) issuance of the '178 patent in January 2024. Resp. Reply at 113–116. Oura contends that the time period it relied on is proper, as does the Staff. Oura Br. at 109–110 and Staff Reply at 10–11.

Respondents contend that the timeframe relied on by Oura, beginning in October 2021, "is both legally and economically improper" "because the majority of the alleged investments occurred at a time when Oura did not have any rights to the invention of the '178 Patent—all rights to the Motiv IP were owned by third-party Proxy, and Oura did not have a license." Resp. Reply at 114 (emphasis removed). When Respondents refer to Oura not having rights to "the invention of the '178 Patent," however, they cannot be referring to the '178 patent itself because the application that issued as the '178 patent was not filed until May 24, 2023 and the '178 patent itself did not exist until it issued in January 2024, both of which were after Oura acquired Proxy and its intellectual property (the Motiv IP). Resp. Reply at 114 and RDX-0010.0002.

In investigations involving alleged patent infringement, the statute identifies as unlawful acts relating to the importation of infringing articles "if an industry in the United States, relating to the articles protected by the patent, . . . exists or be in the process of being established." 19 U.S.C. § 1337(a)(2). For purposes of considering expenditures relating to the statutorily-mandated

[redacted]

industry, the Commission has previously held that expenditures may count for periods before the patent issues but do not count after issuance if the complainant (or entity whose expenditures are being claimed) does not have rights to the patent and would be instead an infringer.

Specifically, the Commission has found that investments before the patent issues may count toward an economic domestic industry. In *Certain Video Game Systems and Controllers*, Inv. No. 337-TA-743, the Commission stated that "it may be appropriate to credit engineering and research and development investments that predate the issuance of a patent" because "a complainant may offer evidence of substantial investments in the United States to exploit its intellectual property that predate the issuance of the patent, such as the production of prototypes, technical collaboration with potential manufacturers, and other efforts to engage potential investors, manufacturers, or licensees, so long as these investments relate to the invention claimed in the later-granted patent(s)." Comm'n Op. at 6–8 (Apr. 13, 2011) (EDIS Doc. ID 448596). While the issue in the 743 investigation was satisfaction of the domestic industry requirement under subsection (a)(3)(C), there is nothing in the language of the statute or the Commission's analysis that would permit pre-patent-issuance expenses under that subsection but preclude them under subsections (a)(3)(A) and (a)(3)(B). Indeed, each of subsections (A), (B), and (C) relate to "articles protected by the patent." 19 U.S.C. § 1337(a)(3) and *see Lashify*, 130 F.4th at 953–954 (describing all three subsections as "relat[ing] to articles protected by the patent"). And the analysis on which the Commission relied in the 743 investigation—from *Certain Battery-Powered Ride-On Toy Vehicles and Components Thereof,* Inv. No. 337-TA-314, Order No. 6, Initial Determination at 20, USITC Pub. 2420 (Aug. 1991) (unreviewed in pertinent part) (EDIS Doc. ID 235431)—was not so limited. The ALJ there addressed investment of "substantial capital in buildings, labor, equipment, and research" and noted "three different ways to demonstrate the existence of a

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domestic industry," thus specifically referencing each of subsections (A), (B), and (C). *Id.* at 19–20.[16]

As for whether investments may count toward an economic domestic industry when made after a patent issues and before the complainant (or entity relied on) has rights in the patent, the Commission has "consistently excluded such expenses." *Certain Power Semiconductors*, Inv. No. 337-TA-1308, ID at 116–17 (collecting cases) (May 18, 2023) (EDIS Doc. ID 798314), *aff'd by* Comm'n Notice at 2 (Jul. 17, 2023) (EDIS Doc. ID 800437) ("the Commission has determined to review the ID in part and, on review, to affirm the ID's finding that Arigna has not satisfied the economic prong of the domestic industry requirement."). Indeed, the Commission has excluded investments by a party "that was not a licensed entity at the time of the investments" and has stated that absent a license, a company is "nothing more than an infringer, which cannot be part of the industry." ID at 117 (citations omitted).

Respondents focus on the fact that Oura did not have rights to issued patents in the same family as the '178 patent for the period before Oura purchased the Motiv intellectual property. Resp. Reply at 114. While Respondents are correct, it is irrelevant because Oura does not assert a domestic industry in other patents in the '178 patent family. The domestic industry Oura contends exists relates to the '178 patent, not preexisting patents in the same family. As noted by the Staff, Oura filed the application that issued as the '178 patent and has been the only owner of the '178 patent. Staff Reply at 10. Oura has also been the only owner of the application that issued as the

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[16] In *Certain Compact Wallets and Components Thereof*, Inv. No. 337-TA-1355, the Commission took "no position on the ID's finding that [the complainant's] domestic investments prior to issuance of the asserted patent are not cognizable under subparagraphs (A) and (B) of section 337(a)(3)" and found that the complainant had demonstrated the existence of a domestic industry under section 337(a)(3)(B) "even excluding its pre-issuance investments." Comm'n Op. at 12–20 (Aug. 13, 2024) (EDIS Doc. ID 829449).

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'178 patent because the application was filed after Oura purchased rights to the patent family. Resp. Reply at 114.

I also agree with the Staff that the cases relied on by Respondents are inapposite. Staff Reply at 10–11 and *see* Resp. Reply at 114–115. In *Certain Vaporizer Devices, Cartridges Used Therewith, and Components Thereof*, Inv. No. 337-TA-1372, the patent issued in November 2022 and was not acquired by the complainant until August 2023. Initial Determination at 158 (Dec. 5, 2024) (EDIS Doc. ID 840701) and U.S. Patent No. 11,497,864. In arguing economic domestic industry as to the '864 patent, the complainant relied on expenses it made before it acquired the existing patent, when it had no rights in the patent or any license to the patent and, indeed, during the time it was a defendant in a district court litigation and was accused of infringing the '864 patent. *Id*. at 161–162. The situation here is meaningfully different. Oura does not rely on expenditures it made for any time period in which the '178 patent existed, and it did not own it. Oura has been the sole owner of the patent and the application that issued as the '178 patent.

In *Certain Fluidized Supporting Apparatus and Components Thereof*, Inv. No. 337-TA-182/188, the question was whether the activities of an entity should be included as part of the economic domestic industry, which turned on whether a sublicense to that entity had been terminated. USITC Pub. 1667, Comm'n Op. at 13–14 (EDIS Doc. ID 235424). No issue was raised regarding the timing of an acquisition of the asserted patent. *See id*.

"The relevant date at which to determine whether the domestic industry exists or is in the process of being established is the filing date of the complaint." *Certain Televisions, Remote Controls, and Components Thereof*, Inv. No. 337-TA-1263, Comm'n Op. at 20. While that date is the focus of the economic domestic industry analysis, complainants routinely rely on periods of time before the complaint was filed to support economic domestic industry. The question here is

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whether the appropriate time period can include the time after Oura acquired the rights to the application that issued as the '178 patent and whether it can include the time before the '178 patent issued.

The evidence is uncontested that Oura acquired the application from which the '178 application was filed on May 6, 2023, and that Oura filed that application on May 24, 2023. Resp. Reply at 114 and RDX-0010.2. The '178 patent issued on January 9, 2024 and the complaint was filed on March 13, 2024. 89 Fed. Reg. 27452. Under Respondents' theory, Oura could only rely on two months of domestic industry expenditures because that is the time between when the patent issued, and Oura filed its complaint. That could, however, improperly penalize Oura for filing a complaint soon after its patent issued. It is also inconsistent with Commission precedent, which plainly states that expenditures before patent issuance may be considered. *Certain Video Game Systems and Controllers*, Inv. No. 337-TA-743, Comm'n Op. at 6–8. In this instance, it is also appropriate to consider earlier expenditures because this is not a situation in which the asserted patent existed but the entity whose expenditures are being relied on did not have rights to the patent.

Respondents contend that the "only evidence that Oura relies on to support domestic industry is the total amount that Oura allegedly invested in U.S. R&D and technical support from October 2021 through March 2024." Resp. Reply at 114 and *see* Resp. Reply at 115 ("Oura went all in on the full period of October 2021 to March 2024 supporting their alleged domestic industry.") This is not true. While the chart on page 112 of Oura's initial post-hearing brief shows aggregate numbers for October 2021 through March 2024, the evidence separates investments during time periods in FY2022, FY2023, and FY2024. *See* CX-0728C, CX-0729C, CX-0736C, and CX-0738C. As detailed below, the evidence supports that this is not a situation with only long-

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ago expenses or with tapering or de minimis expenses when the complaint was filed. Instead, the evidence supports consistent and increasing investments through the domestic industry timeframe identified by Oura. I conclude that the domestic industry timeframe identified by Oura was appropriate.

C. Oura's Activities

The Oura Ring is Oura's only product. The Gen. 3 ring launched in October 2021 and the Gen. 4 ring launched in 2024. Between October 2021 and March 2024, Oura sold [redacted] rings worldwide and [redacted] rings in the United States. Through that time period, the percentage of sales in the United States as compared to worldwide sales has been increasing, from [redacted] in FY2022, [redacted] in FY2023 to [redacted] in the first half of FY2024. CX-0723C and Mulhern Tr. at 472:3–21. Through that time period, Oura's worldwide revenue has been increasing as well; it was [redacted] in FY2022, [redacted] in FY2023, and [redacted] in the first half of FY2024, for a total of [redacted] over that time period. CX-0958C and Mulhern Tr. at 472:22–473:14. Given that a substantial majority of Oura's sales have been in the United States and that sales in the United States have been increasing, the evidence supports that the majority of Oura's revenues are from sales to United States customers and that those revenues have been increasing.

Oura's revenues are from sales of its rings and subscriptions to its app. The app is software designed for use with the ring. Mulhern Tr. at 469:24–470:3. Because the ring does not have a display, the app provides users with information about data collected by the ring. Chapp Tr. at 93:22–94:7 (the app is "necessary as part of the ring offerings") and Mulhern Tr. at 470:15–21. Oura charges a subscription fee for the full use of its app. Mulhern Tr. at 470:7–14. The number of Oura app subscribers has increased from [redacted] in FY2022 to nearly [redacted] as of March 2024. CX-0724C; Mulhern Tr. at 473:18–474:4; and CX-0581C (Membership).

[redacted]

Oura has two permanent facilities in the United States, one in San Francisco and one in San Diego. Mulhern Tr. at 481:19–22 and Chapp Tr. at 84:13–16 and 105:16–20. In San Francisco, Oura leases a facility of approximately [redacted] square feet which, as of April 2024, houses employees working in operations, sales and marketing, research and development, business operations, technical support, Oura's executive leadership, and administrative activities. Mulhern Tr. at 482:11–16; CX-0733C; and CX-0791C.0006. In San Diego, Oura leases a facility of approximately [redacted] square feet that, as of April 2024, houses employees engaged in research and development, operations, sales and marketing, technical support, and administrative activities. Mulhern Tr. at 482:9–11; CX-0732C; and CX-0769C.0001.

1. Labor And Capital

The evidence supports that as of April 2024, Oura had a workforce of around [redacted] people in the United States. CX-0731C.0002 and Mulhern Tr. at 487:10–21. The evidence supports that Oura tracks its employees by department and that "department 7" identifies research and development and the prefix MX identifies technical support. Mulhern Tr. at 487:22–489:2 and Chapp Tr. at 105:6–106:12. Based on these codes, the evidence supports that of its [redacted] domestic employees, [redacted] are involved in research and development and [redacted] are involved in technical support. CX-0731C.0002 and Mulhern Tr. at 487:10–21.

Because the domestic industry products are its only products, Oura contends that all of its domestic labor costs in research and development and technical support are attributable to its domestic industry based on Gen. 3 and Gen. 4. Oura Br. at 110–111; Chapp Tr. at 99:11–16; and Mulhern Tr. at 473:8–11. Respondents contend this is not correct because when Gen. 3 was launched in October 2021, Oura would have continued to sell off its inventory of its Gen. 2 product, which is not part of its alleged domestic industry. Resp. Reply at 116–117. Oura's expert agreed that this was a possibility and common sense supports that it is likely. Respondents criticize Oura's

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assertion that all of its labor costs in in research and development and technical support are attributable to its domestic industry based on Gen. 3 and Gen. 4 because of the inventory sell-off of Gen. 2 products and because Oura's expert did not remove research and development or technical support expenditures relating to Gen. 2 for the time of the sell-off or any time after. *Id.*

Whether a complainant satisfies the economic prong is not analyzed according to a rigid mathematical formula. *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op. at 39 (Aug. 1, 2007) (EDIS Doc. ID 279161). And a complainant does not "need to define or quantify the industry itself in absolute mathematical terms." *Certain Stringed Musical Instruments*, Inv. No. 337-TA-586, Comm'n Op. at 26 (May 16, 2008) (EDIS Doc. ID 300615) ("A precise accounting [of the complainant's domestic investments] is not necessary, as most people do not document their daily affairs in contemplation of possible litigation."). As a result, Oura's failure to account for research and development and technical support expenses for a product it had discontinued does not change the analysis. The major to exclusive thrust of Oura's activities through the timeframe identified by Oura would have been on its Gen. 3 and Gen. 4 products.

For the period FY2022 through Q2 FY2024, the evidence supports that Oura's total U.S. investments in labor allocated to research and development and technical support for its domestic industry products totaled approximately [redacted]. Mulhern Tr. at 490:13-21; CX-0739C; CX-0515C; CX-0575C; CX-0576C; CX-0736C; CX-0734C; CX-0735C; and CX-0738C. Of this, the evidence supports that Oura spent [redacted] in salary and benefits for employees engaged in research and development activities in the United States, with [redacted] for FY2022, [redacted] for FY2023; and [redacted] through Q2 FY2024. And, of the [redacted] total, the evidence supports that Oura spent [redacted] in salary and benefits for employees engaged in technical support activities in the United

[redacted]

States, with [redacted] for FY2022, [redacted] for FY2023; and [redacted] through Q2 FY2024. Mulhern Tr. at 488:15–21; CX-0736C; CX-0575C; CX-0576C; and Oura Br. at 118–119 (identifying labor expenses for different time periods).

The evidence also supports that Oura has made capital investments in the United States related to its research and development of its domestic industry products. This includes payments made to universities, medical facilities, and consultants in the United States. The evidence supports that between FY2022 and Q2 FY2024, Oura's capital investments in the United States attributable to its domestic industry products was [redacted]. Mulhern Tr. at 489:12–15; CX-0738C (showing investments of [redacted] in FY2022, [redacted] in FY2023, and [redacted] through Q2 FY 2024); CX-0515C; and CX-0995.

The evidence thus supports more than [redacted] in labor and capital expenses relating to the domestic industry products from FY2022 through Q2 FY2024 as follows:

Investment	FY2022	FY2023	Q2 FY2024	Total
Labor (R&D)	[redacted]	[redacted]	[redacted]	[redacted]
Labor (tech supp)	[redacted]	[redacted]	[redacted]	[redacted]
Capital	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

2. Plant and Equipment

Oura leases facilities in San Francisco and San Diego, California. The evidence supports that between January 2022 and March 2024, Oura spent around [redacted] on rent, utilities and maintenance of those facilities. Mulhern Tr. at 481:19–24 and 482:17–21; CX-0727C; and CX-0574C. Based on an allocation of personnel involved in research and development, and technical support, the evidence supports that Oura spent about [redacted] for its U.S.-based facilities in support of research and development and [redacted] in support of technical support. Mulhern Tr. at 484:1–5

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[redacted]

and 484:11–12; CX-0727C; CX-0728C; Cx-0731C; CX-0732C; CX-0733C; CX-0506C; and CX-0574C.

The evidence also supports that Oura spent [redacted] for non-capitalized equipment, [redacted] related to software, and [redacted] in other research and development materials expenses, totaling [redacted] from January 2022 through March 2024. Mulhern Tr. at 486:12–17; CX-0729C; and CX-0505C. For that same period, Oura had expenses of [redacted] for non-capitalized equipment and [redacted] in software, totaling [redacted]. *Id.*

The evidence supports that from January 2022 through March 2024, Oura's U.S. investments in plant and equipment relating to research and development and technical support were [redacted]. Mulhern Tr. at 487:2–9; CX-0730C; CX-0574C; CX-506C; and CX-0505C.

3. Whether Oura's Expenditures Were Substantial

The evidence supports that Oura's research and development, and technical support expenditures are qualitatively substantial. Mr. Chapp, the chief operating officer of Ouraring, Inc., testified that it was critical for Oura to have its research and development presence in the United States because more than [redacted] of its business is done here and it is important for Oura to understand the needs of its largest customer base. Chapp Tr. at 106:19–107:1. He also testified that it was important to have technical support in the United States "to create the best member experience we possibly can for all of our members" and "to serve our members in a more real-time basis." *Id.* at 107:2–16. The evidence supports that the majority of sales of Oura's Gen. 3 and Gen. 4 products are associated with U.S. consumers, supporting that the U.S. is a critical market for Oura. Mulhern Tr. at 491:11–13. In addition, the evidence supports that Oura engages in research collaborations with partners in the U.S. regarding features and functionality of its rings to meet the needs of the U.S. market and engages in research and development activities itself in the U.S. *Id.* at 491:14–19.

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[redacted]

Respondents contend that Oura has not shown qualitative significance with respect to research and development of the Gen. 4 because it "was developed in Finland." Resp. Reply at 117–118 and *see* RX-0390. While it is true that design work for the Gen. 4 was conducted in Finland, the evidence supports that important research and development activities related to ring construction, sensing, and manufacturing were conducted in the United States. Chapp Tr. at 107:13–25.

As for technical support, the evidence supports that more complex technical support-related issues are addressed by U.S.-based Oura personnel and that U.S.-based technical support personnel are essential to serve Oura customers in real time. Chapp Tr. at 107:2–22 and Mulhern Tr. at 492:10–493:3.

The evidence supports that Oura's expenses related to labor and capital and plant and equipment are qualitatively significant.

A quantitative analysis is required in assessing the economic prong of the domestic industry requirement. *Wuhan Healthgen Biotechnology Corp.* v. *Int'l Trade Comm'n*, 127 F.4th 1334, 1338 (Fed. Cir. 2025), *citing Lelo*, 786 F.3d at 883. "Qualitative factors cannot compensate for quantitative data that indicate insignificant investment and employment." *Lelo*, 786 F.3d at 885. The Commission has been unequivocal: "Economic prong of the domestic industry requirement cannot be met based solely on qualitative factors." *Certain Non-Volatile Memory Devices*, Inv. No 337-TA-1046, Comm'n Op. at 28 (Oct. 26, 2018) (EDIS Doc. ID 659979).

Whether investment activities are significant "is not evaluated according to any rigid mathematical formula," but rather, "entails 'an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace.'" *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm'n Op. at 27 (Feb. 17, 2011) (EDIS Doc.

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[redacted]

ID 444708), *quoting Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op. at 39).

The evidence supports that Oura's domestic industry investments in research and development and technical support labor are quantitatively significant. Oura's domestic industry investments in research and development account for approximately [redacted] of its overall U.S. labor costs, [redacted] of its worldwide research and development workforce and [redacted] of its worldwide research and development labor costs. Mulhern Tr. at 495:7–496:4; CX-0747C; CX-0506C; CX-0751C; CX-0575C; CX-0576C; CX-0800C; CX-0745C; CX-0736C; CX-0735C; and CX-0750C. Oura's domestic industry investments in technical support labor costs account for [redacted] of its worldwide total. Mulhern Tr. at 498:22–499:1; CX-0751C; CX-0575C; CX-0576C; and CX-0800C. This supports the quantitative significance of Oura's expenses in labor and capital related to its domestic industry products. 19 U.S.C. 1337(a)(3)(B).

Oura's research and development plant and equipment investments account for [redacted] of its worldwide research and development plant and equipment costs. Mulhern Tr. at 494:12–495:2; CX-0744C; CX-0574C; CX-0506C; CX-0819C; CX-0820C; and CX-0505C. Oura's U.S. technical support plant and equipment investments account for approximately [redacted] of its worldwide technical support plant and equipment investments. Mulhern Tr. at 497:14–24; CX-0744C; CX-0574C; CX-0506C; CX-0819C; CX-0820C; and CX-0505C. This supports the quantitative significance of Oura's expenses in plant and equipment related to its domestic industry products. 19 U.S.C. 1337(a)(3)(A).

Respondents do not contest any of these numbers but argue that "in context, the [redacted] in plant and equipment costs is less than [redacted] of Oura's [redacted] in revenue during that time frame, and the [redacted] in labor and capital costs is less than [redacted], which can hardly be

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[redacted]

considered 'significant' or 'substantial.'" Resp. Reply at 118. The Commission, however, has found that an appropriate way of placing the value of domestic investments in the context of the relevant marketplace is by comparing a complainant's domestic expenditures with its foreign expenditures. *Certain Carburetors and Products Containing Such Carburetors*, Inv. No. 337-TA-1123, Comm'n Op. at 18 (Oct. 28, 2019) (EDIS Doc. ID 692517). Oura made these comparisons and they demonstrate quantitative significance. Further, the evidence supports that Oura's labor expenses relating to research and development and plant and equipment have been steadily increasing, from [redacted] in FY2022, to [redacted] in FY2023, to [redacted] for the first half of FY2024 (annualized to [redacted]), supporting that Oura's investments are significant within the context of its operations. *Certain Automated Put Walls and Automated Storage and Retrieval Systems, Associated Control Software, and Component Parts Thereof*, Inv. No. 337-TA-1293, Comm'n Op. at 26 (Jul. 31, 2023) (EDIS Doc. ID 802614).

The evidence supports that Oura's expenses related to labor and capital and plant and equipment are qualitatively and quantitatively significant.

XI. CONCLUSIONS OF LAW

1. The Commission has statutory authority with respect to this investigation.
2. Ouraring, Inc. is the owner by assignment of the asserted patent.
3. The importation requirement is satisfied for the accused products.
4. Claims 1, 2, and 12–14 of the '178 patent have been shown to be infringed.
5. The technical prong of the domestic industry requirement has been satisfied with respect to the '178 patent.
6. Claims 1, 2, and 12–14 of the '178 patent have not been shown to be invalid.
7. The economic prong of the domestic industry requirement has been satisfied with respect to the '178 patent.

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[redacted]

XII. PUBLIC INTEREST

In the Notice of Investigation, the Commission directed the ALJ to take evidence or other information and hear arguments from the parties or other interested persons with respect to the public interest and provide the Commission with findings of fact and a recommended determination on this issue, limited to the statutory public interest factors in 19 U.S.C. § 1337(d)(1), (f)(1), and (g)(1). 89 Fed. Reg. 27452.

Before issuing a remedy for a violation of section 337, the Commission must consider the effect of the remedy on the following public interest factors: (1) the public health and welfare; (2) competitive conditions in the United States economy; (3) production of like or directly competitive articles in the United States; and (4) United States consumers. 19 U.S.C. §§ 1337(d)(1), (f)(1). The purpose of a public interest analysis is not to determine whether any of the parties is a bad actor, or whether a party's actions have harmed the public. The public interest analysis is also not an equitable defense to patent infringement. It is instead an element of the trade statute from which the Commission's authority is derived, and which the Commission is specifically required to consider whether or not any evidence is presented. *See Certain Hybrid Vehicles and Components Thereof*, Inv. No. 337-TA-688, Ltr. from ALJ Essex to Counsel of Record (Jan. 15, 2010) (EDIS Doc. No. 417576). Its purpose is to determine the effect of an exclusion order and/or cease and desist order on the four statutory public interest factors. 19 U.S.C. § 1337(d)(1).

The statute does not place the burden on any party to an investigation of proving that a public interest concern precludes a remedy or requires tailoring a remedy. *Certain Microfluidic Devices*, Inv. No. 337-TA-1068, Comm'n Op. at 29 (Jan. 10, 2020) (EDIS Doc. ID 698855).

When the Commission delegates public interest to the ALJ, it has stated that it expects "the development of a fulsome evidentiary record on the public interest, especially direct evidence from the third parties in the United States that are likely to be impacted." *Microfluidic Devices*, Inv.

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No. 337-TA-1068, Comm'n Op. at 29–30. In particular, "where public interest is delegated to the ALJ, it is important, even if not technically required, that all parties to the proceeding—complainant, respondent, and OUII—seek factual information and statements from knowledgeable sources, including interested third parties, during fact discovery, and present this information and evidence subject to cross-examination and rebuttal at the hearing so that the ALJ's RD will provide a complete and reliable factual record on the statutory public interest considerations." *Id.* at 30, n.26.

Oura contends that none of the public interest factors impact a remedy in this investigation. Oura Br. at 132–139. The Staff agrees. Staff Br. at 78–79. Respondents did not address the public interest in their initial post-hearing brief but address it in their reply brief. Resp. Reply at 119–120.

A. Public Health and Welfare

As detailed below, the evidence supports that Oura and others have sufficient capacity to make up for increased demand if there is a remedy in this investigation. In addition, neither the accused products nor the domestic industry products are approved by the FDA as medical devices, thus mitigating any public health concerns. CX-0899; Kumar Tr. at 728:8–10 (no FDA approval); and Wu Tr. at 782:14–783:12 (same).

The evidence also supports that while Ultrahuman's rings are involved in two ongoing medical studies in the United States, they are expected to end shortly. Mulhern Tr. at 524:33–525:7. Respondents cite testimony from Mr. Kumar regarding a 10-year study at Harvard, slated to end in 2035, that it contends would be interrupted if a remedy is issued. Resp. Reply at 119–120 and Kumar Tr. 677:2–13. Ultrahuman presented no documentary evidence regarding this

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[redacted]

study and presented no witness from Harvard on this issue despite delegation of public interest.[17] Moreover, for the reasons explained previously, I do not credit Mr. Kumar's testimony. In addition, given the timing of a 10-year study, slated to end in 2035, it is not clear that the study has even started but at most it would be in its infancy. This study does not weigh against issuing a remedy in this investigation.

Respondents also contend that reducing supply by excluding their products "will serve only to increase the cost of access to health-monitoring rings." Resp. Reply at 120. Even if remedial orders in this investigation caused a slight increase in the price of smart wearable devices or their components, a price increase alone is insufficient to warrant denial of a remedial order. *Certain Lens-Fitted Film Packages*, Inv. No. 337-TA-406, USITC Pub. No. 3219, Comm'n Op. at 18 (June 2, 1999) (EDIS Doc. ID 48380) (a price increase does not justify a determination that public interest in protecting intellectual property is outweighed).

Respondents also argue that their products "provide unique and important technology as a health monitoring platform." Resp. Reply at 120. Respondents rely on the testimony of Mr. Kumar regarding "lifesaving atrial fibrillation detection," but provide no documentary evidence that the Ultrahuman ring actually has this capability or that other smart wearable devices do not. And, without citation, Respondents contend that "RingConn's ring also provides unique technology having the longest lasting, thinnest, and only ring with sleep apnea monitoring." *Id*. Respondents provided no evidence that RingConn's rings have this functionality or that other smart wearable

[17] Despite identifying people and institutions it contends have information on public interest-related issues in its pre-institution public interest statement, Ultrahuman did not present evidence from any of them at the evidentiary hearing. Ultrahuman Public Interest Statement (EDIS Doc. ID 816981).

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devices do not. Respondents' arguments, unsupported by credible evidence, do not weigh against issuing a remedy in this investigation.

The evidence thus supports that the public health and welfare factor does not weigh against issuing a remedy in this investigation.

B. Competitive Conditions in the United States Economy

As detailed below, the evidence supports that there are a large number of alternative products on the market if a remedy is issued. As a result, the evidence thus supports that the requested remedial orders will not adversely affect competitive conditions in the United States economy.

C. Production of Like or Directly Competitive Articles in the United States

The evidence supports that the Oura Ring is manufactured in Finland and in Mexico, Chapp Tr. at 100:16–19, the Ultrahuman Ring AIR is manufactured in India, Kumar Tr. at 703:5–9, and the RingConn Smart Ring is manufactured in China, Wu Tr. at 764:22–24. Because none of the asserted or domestic industry products are manufactured in the U.S., an exclusion order would not impact U.S. production activities. Mulhern Tr. at 522:3–9. The evidence thus supports that the requested relief would not harm the production of like or directly competitive products in the United States.

D. United States Consumers

The evidence supports that excluding the accused products from the U.S. market would not meaningfully impact U.S. consumers because they would continue to have access to a wide variety of alternatives.

The evidence supports that around [redacted] of the accused products are sold annually, Mulhern Tr. at 514:15–19; CX-0763C; CX-0581C; and CX-0028C, and that Oura has the manufacturing capacity to replace RingConn and Ultrahuman's accused products if they are

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excluded from the U.S. market. Mulhern Tr. at 514:3–14; Chapp Tr. at 100:17–101:1; CX-0801C; CX-0763C; CX-0723C; CX-0581C; CX-0725C; CX-0028C; CX-0726C; and CX-0764C. In addition, while Oura encountered supply issues in early 2024, those related to specific sizes of rings and were ameliorated with the opening of Oura's Mexico manufacturing facility. Chapp Tr. at 138:2–145:10 and 157:5–17; RX-0241C; RX-0445; and Mulhern Tr. at 515:20–516:2. The evidence supports that Oura has sufficient capacity to make up for any shortfall as a result of any remedy issued in this investigation.

The evidence also supports that several third parties make smart rings, which would mitigate any adverse impact on U.S. consumers in the event of a remedy. Specifically, Samsung recently entered the smart ring marketplace with its Galaxy ring. Mulhern Tr. at 517:14-16; CX-0583. The evidence supports that the Galaxy ring has features similar to the accused and domestic industry products. Mulhern Tr. at 517:17–23; CX-0583.0002; CX-0879 CX-0876; CX-0879; and CX-0919. Based on consumer demand for pre-orders of the Galaxy ring, Samsung announced it would expand capacity to more than 600,000 units in the remainder of 2024, supporting that Samsung alone has sufficient capacity to cover any increase in demand for smart rings if there is a remedy in this investigation. CX-0902. In addition, former respondent Circular, which reached a settlement with Oura, could provide an alternate product and mitigate any adverse impact on the public interest, Mulhern Tr. at 518:7-11, as could others, *id*. at 518:12-18; CX-0877; CX-0878; CX-0874; and CX-0880.

The evidence also supports that other devices, such as smartwatches and fitness trackers, are widely available and would mitigate the supply impact resulting from any remedial orders. CX-0765C; CX-0524C; CX-0908; CX-0911; CX-0926; CX-0523; and CX-0766.

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The evidence supports that the consideration of U.S. consumers does not weigh in favor of denying relief.

XIII. RECOMMENDED DETERMINATION ON REMEDY AND BOND

The Commission has broad discretion in selecting the form, scope, and extent of any remedy. *Viscofan, S.A. v. Int'l Trade Comm'n*, 787 F.2d 544, 548 (Fed. Cir. 1986); *see also Hyundai Electronics Industries Co. Ltd. v. Int'l Trade Comm'n*, 899 F.2d 1204, 1209 (Fed. Cir. 1990). By Commission rule, the administrative law judge must issue a recommended determination on the appropriate remedy if the Commission finds a violation of section 337 and on the amount of bond to be posted by respondents during Presidential review of any Commission remedy. *See* 19 C.F.R. § 210.42(a)(1)(ii). I address these issues below.

A. Limited Exclusion Order

Section 337(d)(1) provides that "[i]f the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the [public interest], it finds that such articles should not be excluded from entry." 19 U.S.C. § 1337(d)(1). The Commission is required to issue an exclusion order upon the finding of a section 337 violation absent a finding that the effects of any of the statutorily-enumerated public interest factors counsel otherwise. *Spansion*, 629 F.3d at 1358.

Respondents contend that Ultrahuman's and RingConn's mobile apps should not be included in any exclusion order, relying on testimony from Mr. Kumar. Resp. Reply at 118–119, *citing* Kumar Tr. at 633:4–17. As Ultrahuman's CEO, this testimony does not relate to RingConn. Mr. Kumar agreed, moreover, that the Ultrahuman factory in India programs the accused products and loads the firmware that works with the companion mobile app. Kumar Tr. at 713:2–8. To the

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extent that such code is part of the accused product, I do not recommend that it be excluded from any remedy.

Respondents contend that an exclusion order is not in the public interest. Resp. Reply at 119–120. For the reasons explained above with respect to the public interest, none of the reasons articulated by Respondents support denying a remedy.

Respondents contend that there should be an exception for service, repair, or replacement for products imported before the effective date of an exclusion order, citing *Certain Automated Teller Machines*, Inv. No. 337-TA-989, Comm'n Op. at 32 (Aug. 3, 2017) (EDIS Doc. ID 618925). Resp. Reply at 120. There, however, there were specific and previously-acknowledged concerns with repair and replacement of a specific ATM module. *Id*. No such evidence has been presented here. As a result, I do not recommend an exception for service, repair, or replacement.

Respondents contend that if a remedy issues, it should include a reporting requirement because Oura's "domestic industry is either in decline or does not exist." Resp. Reply at 120. Respondents cite no evidence that Oura's domestic industry is in decline, *id*., and the evidence supports it is not. Instead, the evidence supports that Oura's worldwide and U.S. sales have been increasing, CX-0723C and CX-0581C, its net revenues have been increasing, CX-0720C, and its labor expenses attributable to its domestic industry products have been increasing, CX-0736C. As a result, I do not recommend a reporting requirement in the event a remedy issues.

Finally, respondents state that a certification provision should be included. Resp. Reply at 121. Consistent with Commission practice, I recommend the standard certification provision in any limited exclusion order such that, at the discretion of Customs and Border Patrol and pursuant to procedures it establishes, persons seeking to import articles that are potentially subject to any limited exclusion order may be required to certify that they are familiar with the terms of the

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limited exclusion order, that they have made appropriate inquiry, and thereupon state that, to the best of their knowledge and belief, the products being imported are not excluded from entry under the limited exclusion order. *Certain Tobacco Heating Articles and Components Thereof*, Inv. No. 337-TA-1199, Comm'n Op. at 45–46 (Oct. 19, 2021) (EDIS Doc. ID 754503).

B. Cease and Desist Order

Section 337(f)(1) provides that in addition to, or in lieu of, the issuance of an exclusion order, the Commission may issue a cease and desist order as a remedy for violation of section 337. 19 U.S.C. § 1337(f)(1). A cease and desist order is generally issued when a respondent maintains commercially significant inventories in the United States or has significant domestic operations that could undercut the remedy provided by an exclusion order. *Certain Table Saws Incorporating Active Injury Mitigation Technology and Components Thereof*, Inv. No. 337-TA-965, Comm'n Op. at 4–6 (Feb. 1, 2017) (EDIS Doc. ID 602496). "A complainant seeking a cease and desist order must demonstrate, based on the record, that this remedy is necessary to address the violation found in the investigation so as to not undercut the relief provided by the exclusion order." *Id*. at 5.

Oura contends that respondents maintain commercially significant inventories in the United States, Oura Br. at 126–127, and the Staff agrees, Staff Br. at 70–71. Respondents contend that a cease and desist order should not issue as to RingConn because "RingConn is also an entirely foreign-based entity and does not have significant domestic operations." Resp. Reply at 122. This assertion is false. In its verified response to the complaint, RingConn stated that "RingConn LLC is a Delaware corporation with its principal place of business at 1226 North King St. Num. 292, Wilmington, DE 19801." RingConn Answer to Second Amended Complaint at ¶ 18.

Setting aside RingConn's false statement, the evidence supports that as of the second quarter of 2024, RingConn had an inventory of [redacted] units of its accused products in the United States, worth [redacted] million, and representing [redacted] months of sales. Mulhern Tr. at 500:12–16; Wu

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Tr. at 767:6-768:7 and 769:14–15 ("[redacted]"); CX-0758C; CX-1387C at 22, 36-39, 42. The evidence supports that this inventory is sufficient to support RingConn's domestic sales and activities. Mulhern Tr. at 561:4–11.

Respondents contend that a cease and desist order should not issue as to Ultrahuman because Oura's expert initially made an error in determining the volume of its U.S. inventory. Resp. Reply at 121–122. While it is true that Oura's expert initially made an error in calculating Ultrahuman's inventory, the evidence supports that Ultrahuman maintains inventories of its accused device at several locations in the United States. Mulhern Tr. at 500:1–11; CX-0756C; CX-0565C; CX-0028C; Kumar Tr. at 722:5–14 ("Ultrahuman keeps an inventory of the accused Ring AIR products in the U.S."). As of June 2024, Ultrahuman had an inventory of [redacted] of its accused products in the United States, representing approximately [redacted] months of sales and worth about [redacted]. CX-0725C and CX-0757C. The evidence supports that this inventory is economically significant and is sufficient to support Ultrahuman's domestic sales and activities. *See id.*; Tr. (Mulhern) at 561:4–11.

The evidence supports that sale of accused products from respondents' commercially significant domestic inventories would undercut the relief provided by limited exclusion orders. *Microfluidic Devices*, Inv. No. 337-TA-1068, Comm'n Op. at 27. I therefore recommend issuance of cease and desist orders as to both RingConn and Ultrahuman if the Commission concludes that there has been a section 337 violation.

C. Bond

When the Commission enters an exclusion order or a cease and desist order, a respondent may continue to import and sell its products during the 60-day presidential review period under an amount determined by the Commission to be "sufficient to protect the complainant from any

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injury." 19 U.S.C. § 1337(j)(3); *see also* 19 C.F.R. § 210.50(a)(3); and *Certain Automated Put Walls*, Inv. No. 337-TA-1293, Comm'n Op. at 46. Oura has the burden of establishing the need for a bond. *Id.* at 47.

When reliable price information is in the record, the Commission often sets the bond by eliminating the differential between the domestic industry product and the infringing product. *Id.* at 46. The Commission may also use a reasonable royalty rate to set the bond when such a rate can be determined from the record. *Id.* Where the record establishes that calculation of a price differential is impractical or there is insufficient evidence in the record to determine a reasonable royalty, the Commission has imposed a 100 percent bond. *Id.*

The evidence supports that RingConn and Ultrahuman compete in the market with Oura. Resp. Reply at 122–124; Wu Tr. at 784:3–5 (RingConn CEO agreeing that Oura is RingConn's main competitor in the United States)[18]; and Ultrahuman Public Interest Statement at 2 ("Oura has sued its primary competitors."). As competitors in the relevant market, the central question in the bond determination is what bond amount (if any) is sufficient to protect Oura from injury during the Presidential review period. The parties focus on price differential and provide no evidence regarding a reasonable royalty rate.

The primary dispute between the parties is whether Oura's subscription fee should be included when considering price differential and if so, for how long a subscription period. Oura Br. at 129–130; Resp. Reply at 123–124; and Staff Br. at 75–77.

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[18] Dr. Wu testified at the evidentiary hearing that RingConn does not compete within the wearable health tracker industry. Wu Tr. at 775:7–13 ("We do not compete in that industry"). When confronted with his deposition testimony in which he confirmed that "RingConn competes within the wearable health tracker industry," Dr. Wu testified that RingConn provides "more product options to the consumers, rather than competing with other products." *Id.* at 775:14–776:6.

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Oura contends that a [redacted] subscription fee term is applicable based on testimony from Mr. Chapp and an "Ultrahuman Overview 2024," which identified a [redacted] cost of ownership of the Oura ring as including a [redacted] subscription fee. Oura Br. at 130 and CX-0933C. I agree with the Staff that there is insufficient evidence showing that a [redacted] subscription fee period is appropriate. Staff Br. at 76. As noted, Oura's subscriptions are tied to [redacted], and it is not clear what portion of a [redacted] membership should be attributed to a single ring purchase. *Id.* For this reason, the Staff states that a [redacted] subscription fee period is appropriate. *Id.* at 76–77.

The problem is that the evidence does not show or even approximate what percentage of purchasers of Gen. 3 and Gen. 4 rings also purchase a subscription. While Oura presented evidence that it has [redacted] worldwide subscribers, CX-0724C, and that the turnover or "churn" rate of its subscribers is small, *id.*, the evidence does not sufficiently demonstrate that Gen. 3 and Gen. 4 customers purchase subscriptions or for how long. Because the evidence does not support the price differential based on a [redacted] subscription term urged by Oura or a [redacted] subscription term suggested by the Staff, I recommend a 0% bond during the presidential review period.

XIV. INITIAL DETERMINATION ON VIOLATION

It is my initial determination that a violation of section 337 of the Tariff Act, as amended, has occurred by the importation into the United States, the sale for importation, or the sale within the United States after importation of certain smart ring wearable devices, systems, and components thereof based on infringement of U.S. Patent No. 11,868,178. I hereby certify this Initial Determination and Recommended Determination to the Commission.

The Secretary shall serve the confidential version of this Initial Determination and Recommended Determination on counsel who are signatories to the Protective Order (Order No. 1). A public version will be served on all parties of record later.

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This Initial Determination shall become the determination of the Commission unless a party files a petition for review under 19 C.F.R. § 210.43(a) or the Commission on its own motion orders review under 19 C.F.R. § 210.44. 19 C.F.R. § 210.42(d).

XV. ORDER

Within seven days of the date of this document, the parties shall jointly submit a single proposed public version of this document with any proposed redactions prominently identified. If the parties submit excessive redactions, they may be required to provide declarations from individuals with personal knowledge, justifying each proposed redaction and specifically explaining why the information sought to be redacted meets the definition for confidential business information in 19 C.F.R. § 201.6(a). To the extent possible, the proposed redactions should be made electronically in a single PDF file with the proposed redactions submitted as "marked" but not yet "applied." The proposed redactions should be submitted via email to JohnsonHines1398@usitc.gov and not filed on EDIS.

SO ORDERED.

Doris Johnson Hines
Administrative Law Judge

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