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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

Case IPR2024-00294
U.S. Patent 10,736,507

PATENT OWNER MASIMO CORPORATION'S SUR-REPLY

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2002	March 27, 2024 Expert Declaration of R. James Duckworth, Ph.D.
2003	Commission Opinion (Public), <i>Certain Light-Based Physiological Measurement Devices and Components Thereof</i> , Inv. No. 337-TA-1276, EDIS No. 808521 (ITC Oct. 26, 2023)
2004	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-01271, Paper 15 (PTAB Jan. 24, 2023)
2005	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-01272, Paper 16 (PTAB Jan. 24, 2023)
2006	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-01273, Paper 15 (PTAB Jan. 24, 2023)
2007	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-01274, Paper 15 (PTAB Jan. 24, 2023)
2008	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-01275, Paper 15 (PTAB Jan. 30, 2023)
2009	Decision Denying Institution of <i>Inter Partes</i> Review, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-01276, Paper 15 (PTAB Jan. 30, 2023)
2010	Plaintiff Apple Inc.'s Opposition to Defendants' Motion for Stay Pending <i>Inter Partes</i> Review (Public), <i>Apple Inc. v. Masimo Corp.</i> , No. 22-1378-MN-JLH (D. Del. Jan. 10, 2024), D.I. 457
2011	Plaintiff Apple Inc.'s Opening Brief in Support of Its Motion for an Expedited Trial, <i>Apple Inc. v. Masimo Corp.</i> , No. 22-1377-MN-JLH (D. Del. Feb. 10, 2023), D.I. 50
2012	Transcript of May 5, 2023 Hearing in <i>Apple Inc. v. Masimo Corp.</i> , Nos. 22-1377-MN-JLH, 22-1378-MN-JLH (D. Del. May 5, 2023)

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2014	Amended Scheduling Order, <i>Apple Inc. v. Masimo Corp.</i> , No. 22-1378-MN-JLH (D. Del. Sept. 21, 2023), D.I. 359
2015	Lex Machina Patent Case Timeline Statistics for the District of Delaware between December 12, 2022 and December 12, 2023
2016	Lex Machina Case Statistics for Magistrate Judge Jennifer Hall
2017	Lex Machina Case Statistics for Judge Colm Connolly, Judge Maryellen Noreika, Judge Richard Andrews, Judge Gregory Williams, and Magistrate Judge Jennifer Hall
2018	Transcript of September 14, 2023 Markman Hearing, <i>Apple Inc. v. Masimo Corp.</i> , Nos. 22-cv-1377-MN-JLH, 22-cv-1378-MN-JLH
2019	Aaron Tilley, <i>The Entrepreneur Who Bet His Company on a Fight With Apple</i> , Wall Street J., Dec. 30, 2023, https://www.wsj.com/tech/joe-kiani-entrepreneur-apple-warning-52eb09a9
2020	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1271, Paper 20 (PTAB June 20, 2023)
2021	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1272, Paper 20 (PTAB June 20, 2023)
2022	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1273, Paper 19 (PTAB June 20, 2023)
2023	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1274, Paper 19 (PTAB June 20, 2023)
2024	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1275, Paper 19 (PTAB June 26, 2023)

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2025	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1276, Paper 20 (PTAB June 26, 2023)
2026	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1292, Paper 17 (PTAB Mar. 7, 2023)
2027	Notice of Refund, <i>Apple Inc. v. Masimo Corp.</i> , IPR2022-1466, Paper 17 (PTAB Apr. 5, 2023)
2028	Correspondence from counsel for Apple to counsel for Masimo regarding Apple's prior art grounds in the Delaware Litigation, dated November 16, 2023
2029	Joint Claim Construction Briefing (August 31, 2023) in <i>Apple Inc. v. Masimo Corp et al.</i> , C.A. 22-1378-MN-JLH
2030	Excerpts of the Transcript of the Deposition of Steven Warren in <i>Apple Inc. v. Masimo Corp et al.</i> , C.A. 22-1378-MN-JLH
2031	Excerpts of the Rebuttal Expert Report of Steven Warren in <i>Apple Inc. v. Masimo Corp et al.</i> , C.A. 22-1378-MN-JLH
2032	Blood Oxygen App On Apple Watch, Apple (retrieved March 12, 2024)
2033	CC1100 Single Chip Low Cost Low Power RF Transceiver, Texas Instruments (June 20, 2006)
2034	Exhibit D-1 to Apple's June 8, 2023 Initial Invalidity Contentions, <i>Apple Inc. v. Masimo Corp.</i> , No. 22-1378-MN-JLH (D. Del.)
2035	Exhibit D-3 to Apple's June 8, 2023 Initial Invalidity Contentions, <i>Apple Inc. v. Masimo Corp.</i> , No. 22-1378-MN-JLH (D. Del.)
2036	Excerpts of Masimo's June 22, 2023 Responses to Apple Inc.'s Initial Invalidity Contentions, <i>Apple Inc. v. Masimo Corp.</i> , No. 22-1378-MN-JLH (D. Del.)

Exhibit No.	Description
2037	October 10, 2024 Expert Declaration of R. James Duckworth, Ph.D.
2038	Declaration of Bilal Muhsin
2039	Prototype Video (last modified August 31, 2011)
2040	User Interface Summary (last modified August 31, 2011)
2041	<i>Masimo iSpO2™ Pulse Oximeter for iOS Platform (iPhone, iPad & iPod touch) for Consumers to Debut at CES, Jan. 3, 2013,</i> https://investor.masimo.com/news/news-details/2013/Masimo-iSpO2supsup-Pulse-Oximeter-for-iOS-Platform-iPhone-iPad--iPod-touch-for-Consumers-to-Debut-at-CES/default.aspx
2042	iSpO2 Image cited in Exhibit 2041, available at http://photos.prnewswire.com/prnh/20130103/LA36252
2043	IEEE Xplore Webpage for D'Angelo, available at https://ieeexplore.ieee.org/document/6090368/citations?tabFilter=papers#citations
2044	Deposition Transcript of Thomas Kenny, Ph.D.
2050	Deposition Errata of R. James Duckworth, Ph.D.
2051	Subpoena to Testify issued to Gordon MacPherson
2052	IEEE Webpage describing Conferences and Events Contacts, available at https://www.ieee.org/about/contact.html
2053	Curran Associates, Inc. Webpage for DVD copy of Proceedings for IEEE Engineering in Medicine and Biology Society Annual International Conference 2011 (EMBC 2011) (DVD), available at https://www.proceedings.com/13298.html

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2056	Web Archive Webpage for the 33 rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, available at https://web.archive.org/web/20110902130207/http://embc2011.embs.org:80/
2057	Deposition Transcript of Gordon MacPherson

I. ALL GROUNDS FAIL TO DEMONSTRATE OBVIOUSNESS**A. Mendelson Does Not Disclose “One Or More Signals Responsive To Light” Under That Phrase’s Plain And Ordinary Meaning****1. Masimo Explained The Correct Plain And Ordinary Meaning Of This Phrase; Apple Has No Affirmative Position**

The parties agree the claimed phrase “one or more signals responsive to light” should be given its plain and ordinary meaning, but only Masimo articulated the plain meaning of that phrase. Pet., 3; POR, 18-20. As Masimo’s expert (Dr. Duckworth) explained, “a POSITA would have understood that the plain and ordinary meaning of ‘one or more signals responsive to light’ output by the optical sensor refers to *data that is actually acquired with the optical sensor.*”¹ EX2037 ¶123-124; EX1087, 71:21-72:8, 94:3-14, 101:3-21. Duckworth further explained the output of the claimed optical sensor would be “some varying analog signal...based on the light it detected.” EX1087, 22:17-23:17. Duckworth also explained why the output of analog-to-digital conversion falls outside the scope of “one or more signals responsive to light.” *Id.*, 72:2-73:9. Masimo thoroughly explained the phrase’s plain meaning (i.e., “data that is actually acquired with the optical sensor”) and the supporting evidence. POR, 18-20.

¹ Emphases added unless indicated otherwise.

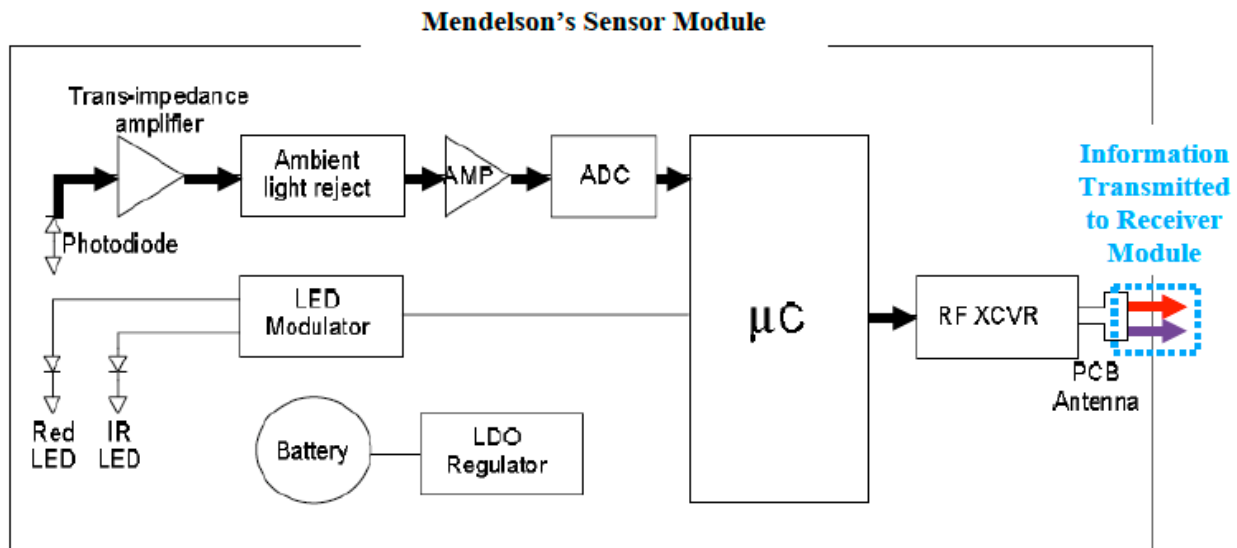
Apple carefully avoids taking any position on the plain meaning of this phrase. Reply; EX1083 ¶13 (“Without expressing agreement or disagreement with this articulation of the plain and ordinary meaning of the term....”). Apple merely refers to whatever it “demonstrated in the Petition.” *See, e.g.*, Reply, 7 (citing Pet., 6-7, 10-13, 44). But Apple, in the cited Petition pages or otherwise, never articulates its view of the plain meaning of “one or more signals responsive to light.” *See generally* Pet.; Reply. Instead, Apple merely invokes an unspecified plain meaning that allegedly encompasses Mendelson. Reply, 7; Pet., 10-13.

Because only Masimo articulated the phrase’s plain meaning, the Board should adopt Masimo’s interpretation. And because Apple never articulated its view of the phrase’s plain meaning, Apple failed to meet its burden to show “[h]ow [each] challenged claim is to be construed.” 37 C.F.R. §42.104(b)(3).

2. Mendelson Does Not Disclose “One Or More Signals Responsive To Light” Under That Phrase’s Plain And Ordinary Meaning

Without applying Masimo’s interpretation of the phrase’s plain meaning, Apple argues Mendelson discloses it. Reply, 8-9. Apple argues Mendelson discloses “the information acquired by the Sensor Module is transmitted...[to the] Receiver Module.” *Id.* (quoting EX1011, 2). Apple also argues ““information” or “[s]ignals acquired by the Sensor Module” are received by Mendelson’s Receiver Module, ““which synchronously converts the corresponding PD output [into] PPG signals.”” *Id.* Apple is wrong for many reasons.

First, Apple ignores the analog signal actually acquired with Mendelson’s optical sensor is not what is transmitted by Mendelson’s Sensor Module or received by its Receiver Module. *Id.*; EX2037 ¶130. Mendelson’s optical sensor, a photodiode, outputs an analog signal proportional to light it detects. POR, 20-21; EX1011, 2; EX2037 ¶¶125-126. But that analog signal is **never** transmitted by Mendelson’s Sensor Module or received by its Receiver Module. *Id.* Instead, Mendelson explains the analog signal actually acquired with its photodiode is converted into digital information by an analog-to-digital converter (“ADC”), processed by a microcontroller (“ μ C”), and then used by the RF transceiver (“RF XCVR”) to generate packets of information that are then transmitted to the Receiver Module. *Id.*; EX1011, 2 (below).



From Mendelson’s disclosure, a POSITA would have understood the Sensor Module outputs processed information only, not the analog signal actually acquired with its

optical sensor. POR, 20-21; EX1011, 2; EX2037 ¶¶125-26. Thus, Mendelson does not disclose outputting the claimed “one or more signals responsive to light” under the plain meaning of that phrase. *Id.*

A POSITA would not have ignored these details in Mendelson about how the analog signal actually acquired with the optical sensor is processed before the Sensor Module outputs any information. POR, 20-21; EX2037 ¶¶125-26. Apple does not argue otherwise. Reply, 8-9. Instead, Apple focuses on Mendelson’s high-level mentions that the overall “Sensor Module” outputs acquired “information”/“signals.” *Id.* (quoting EX1011, 1-2). But Mendelson expressly confirms the processed “information”/“signals” output by its Sensor Module are not the analog signal actually acquired with its optical sensor, as explained above.

Second, Apple relies on the ’507 Patent itself to argue Mendelson discloses this limitation. Reply, 9. Apple argues “[t]hese disclosures of Mendelson are consistent with [an] inventor’s [(Muhsin’s)] description of how the claimed optical sensor operates.” *Id.* (citing EX2038 ¶13). But this is “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). Apple cannot use the ’507 Patent, or an inventor’s testimony, as its guide for arguing obviousness. *In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011).

Third, the inventor testimony supports Masimo’s position. Muhsin repeatedly explains that Masimo’s prototype sensor directly outputs the data acquired with its detector to a separate processing board via a cable, with all processing occurring **after** the data reaches the processing board. EX2038 ¶¶13 (“The detector of the sensor generated one or more signals...and output those one or more signals to the processing module...through the cable.”), 14 (same), 15 (the prototype’s “processing board receives the one or more signals output by the detector of the finger sensor”), 22 (confirming prototype “[p]erform[ed] all of the signal processing with the processing board”). Unlike the ’507 Patent’s optical sensor, Mendelson’s Sensor Module processes the acquired photodiode signal **before** outputting information to the alleged processing board (Receiver Module). POR, 20-24; EX1011, 2; EX2037 ¶¶125-129.

Fourth, Apple argues “Mendelson’s Sensor Module outputs ‘information acquired by the Sensor Module’ representing the data output by the photodetector [i.e., optical sensor].” Reply, 9. But Apple never explains its basis for reading the claim to cover data “representing” what was acquired. *Id.* Apple’s conclusory assertion fails to show obviousness. *In re Magnum Oil Tools, Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016). Apple’s assertion also fails because the claims’ plain meaning requires outputting **data actually acquired with the optical sensor**, not data merely “representing” what was acquired. POR, 18-20.

Fifth, Apple argues Mendelson is inconsistent with Duckworth’s descriptions of the PPG sample averaging performed by Mendelson’s Sensor Module. Reply, 11-14. But as Duckworth explained, the Sensor Module outputs only average red and infrared PPG samples to the Receiver Module. EX2037 ¶¶126-129. He then explained that by the time of the ’507 Patent, years after Mendelson, a POSITA would have understood Mendelson’s Sensor Module used PPG sample averaging because that was “a commonly used technique...to try and reduce the effects of noise.” EX1087, 104:14-106:2. Apple does not even argue otherwise. Reply, 12-13. Instead, Apple merely relies on Kenny’s testimony that PPG sample averaging “would not have been inherent” in or “the only obvious implementation” for Mendelson. *Id.* (citing EX1083 ¶¶25-31). But even if true, that fails to show a POSITA would not have understood Mendelson’s Sensor Module employed this undisputedly common noise reduction technique.

Finally, Apple argues it relies on the Mendelson paper only and speculates Duckworth’s assertions about PPG sample averaging rely on “secret knowledge” or “appear to be based on his access to non-public information regarding Mendelson’s system.” Reply, 13-14. But, even ignoring the PPG sample averaging, Duckworth explained why the Mendelson paper does not satisfy the plain meaning of the claimed “one or more signals responsive to light.” For example, Duckworth testified Mendelson’s Sensor Module performs analog-to-digital conversion on the analog

signal actually acquired with its photodiode. EX2037 ¶125; EX1011, 2. He explained that after analog-to-digital conversion, the data “would no longer be the data actually acquired with the optical sensor” and thus “fall[s] outside of the scope of one or more signals responsive to light.” EX1087, 71:2-73:9. Therefore, Duckworth showed Mendelson’s paper does not satisfy the plain meaning of this limitation because its Sensor Module at least performs analog-to-digital conversion on the acquired signal before outputting anything. EX1087, 71:2-73:9; EX2037 ¶125-29; POR, 20-21. This failure of Mendelson is apparent from the paper itself—not any “secret knowledge” about Mendelson’s system.

3. Apple Misstates Masimo’s District Court Arguments, Which Support Masimo’s Arguments Here

Apple argues Mendelson satisfies the plain meaning of “one or more signals responsive to light” asserted by Masimo in the district court. Reply, 9-11. But Apple repeatedly misstates Masimo’s district court positions, all of which support Masimo’s arguments here.

First, Apple argues that in the district court Masimo asserts “data in the form of an output signal” from a photodetector “falls within the scope of the claimed one or more signals.” *Id.*, 9-10. But Apple misstates Masimo’s position. Masimo merely explained the flaws with Apple’s construction that “one or more signals” means “raw detected signals.” EX2029, 34-35. Regardless, a photodiode’s “output signal” is not what Mendelson’s Sensor Module outputs. Rather, Mendelson’s

photodiode-output signal is run through analog-to-digital conversion and other processing before the resulting information is output by the Sensor Module. POR, 20-24; EX2037 ¶¶125-29.

Second, Apple argues that in the district court Masimo “asserts that signals that have undergone ‘preprocessing’ by the sensor fall within the scope of the claims.” Reply, 10. Again, Apple misstates Masimo’s position because Masimo was explaining the flaws in Apple’s construction. EX2029, 38-39. Regardless, a preprocessed photodiode signal (i.e., analog signal from the photodiode) is not what Mendelson’s Sensor Module outputs. Instead, the Sensor Module (1) **converts** the analog photodiode signal into a digital signal, (2) the microcontroller uses that digital signal to **calculate** PPG sample averages, (3) and the RF transceiver uses those sample averages to **generate** the information packets that are transmitted the Receiver Module. POR, 20-24; EX2037 ¶¶125-29; EX1087, 71:2-73:9.

Third, Apple argues that Masimo asserts in the district court that “digital and analog signals fall within the scope of the plain and ordinary meaning of ‘one or more signals.’” Reply, 10. Apple again misstates Masimo’s position. Masimo explained that in a ’507 Patent embodiment with both a “digital processing board” and an “analog processing board” (FIG. 1C), the digital board received digital signals and the analog board received analog signals. EX2029, 38-39. But Masimo never asserted digital signals “fall within” the plain meaning of the claimed signals.

Id. Indeed, they do not. In the embodiment (FIG. 1C) Masimo addressed, the processing module (130) has an analog processing board (136) that receives analog data from the optical sensor (110) via the cable (120), and the digital processing board (134) receives data from the analog board (136). EX1001, FIG. 1C, 9:1-20. That processing module never receives digital signals from the optical sensor. *Id.*

Masimo’s discussion of ’507 Patent FIG. 1C in the district court is consistent with its argument here that the plain meaning of “one or more signals responsive to light” refers to what is actually acquired with the optical sensor before processing. POR, 18-20. As Duckworth explained, the signal actually acquired with an optical sensor is analog. EX1087, 71:2-73:9. And once the analog signal is converted to digital information, it is “no longer [] the data actually acquired with the optical sensor” and “fall[s] outside of the scope of one or more signals responsive to light.” *Id.* Thus, Mendelson does not disclose the claimed signals, under their plain meaning, because its Sensor Module performs analog-to-digital conversion and other processing before outputting any information. *Id.*; POR, 20-24; EX2037 ¶¶125-29.

Apple argues Masimo’s plain meaning interpretation of “one or more signals responsive to light” is “arbitrary line drawing” unsupported by “any” evidence. Reply, 14-15. But the specification supports Masimo’s interpretation. POR, 18-20. FIG. 1C shows the claimed signals are analog, as explained above. EX1001, FIG.

1C, 9:1-20. Consistent with the specification, Duckworth explained why the claims cover analog signals actually acquired with the optical sensor. EX1087, 71:2-73:9. He also explained the processed output of analog-to-digital signal conversion falls outside the claims because once signals are digitized, they “would no longer be the data actually acquired with the optical sensor.” *Id.*, 71:2-73:9. Thus, Masimo’s interpretation is supported by both the ’507 Patent and expert testimony. Mendelson’s Sensor Module does not satisfy the plain meaning of the claimed signals because it performs analog-to-digital conversion and outputs to the Receiver Module only digital information that was *not* actually acquired with the optical sensor. *Id.*; EX2037 ¶125; POR, 21-25.

Fourth, Apple cites Duckworth’s testimony in arguing the claims can cover digital signals. Reply, 10. But Duckworth never said that. The cited Duckworth testimony discusses Muhsin’s declaration (EX1087, 23:20-[24]:7) or responds to Apple’s vague and hypothetical questions about “if the output signal were an analog signal....” *Id.*, 65:20-21, 66:4-12. Apple omits Duckworth’s relevant testimony, where he explained the claims do not cover digital signals because they are “no longer” the analog data actually acquired with the optical sensor. *Id.*, 71:2-73:9; EX2037 ¶125.

Fifth, in an ill-explained one-sentence paragraph, Apple argues Mendelson discloses the claimed one or more signals “under the plain and ordinary meaning

(the construction adopted by both parties here and asserted by Masimo in the district court proceeding).” Reply, 10-11. But here, there is no agreement as to the “plain and ordinary meaning.” Masimo proposes a construction; Apple argues Masimo’s proposal is wrong but never takes its own position. Further, Masimo’s district court positions support its plain-meaning construction here and Mendelson’s failure to disclose the claimed signals, as discussed above. Apple also cites Mendelson, ten paragraphs of testimony, and three dictionary definitions, but explains none. *Id.* Instead, Apple invites the Board to divine its argument from these five documents, which is improper and should be rejected. *See, e.g.,* 37 C.F.R. §42.6(a)(3); *Clim-A-Tech Indus., Inc. v. Ebert*, 2018 WL 851888, *11 (PTAB Feb. 12, 2018).

4. The Board Should Not Disregard Apple’s District Court Interpretation Of The Disputed Phrase

Apple argues in the district court that the claimed “one or more signals” means the “signals” that are “output from the optical sensor.” EX2029, 34-40. Yet Apple now argues the Board should “disregard” Apple’s prior constructions as “irrelevant” because “neither party” adopts them here. Reply, 15-16. Apple is wrong. Masimo agrees the claimed “one or more signals” are the signals actually output from the optical sensor (photodiode). POR, 18-20. Thus, at least this aspect of Apple’s district court construction should be adopted here.

Apple also argues in district court that “one or more signals” refers to “raw detected signal(s)” from an optical sensor. EX2029, 34-40. The dispute about that

construction was whether “raw” should be read into the claims because it was unclear what Apple means by “raw.” *Id.*, 38-39. But if by “raw” Apple means the signals actually output from the optical sensor (photodiode), the parties also agree on this aspect of Apple’s district court construction and it should be adopted here.

II. EVERY GROUND BASED ON D’ANGELO FAILS TO DEMONSTRATE OBVIOUSNESS

A. Apple Fails To Show D’Angelo Is §102(b) Prior Art

Apple argues the D’Angelo paper is §102(b) art. Reply, 1-3; Pet., 3. Therefore, Apple bore the burden to show D’Angelo was publicly accessible more than a year before the ’507 Patent’s effective filing date (i.e., pre-September 20, 2011). Apple fails to meet its burden for many reasons.

Apple’s Petition includes a one-sentence argument on this issue: D’Angelo was publicly accessible “on or shortly after” the August 30-September 3, 2011 conference, or in “September 2011.” Pet., 2-3. But Apple’s vague assertions encompass dates after September 20, 2011 and do not show D’Angelo was publicly accessible *before* that date. POR, 29. The Petition also cites 13 paragraphs of testimony from Munford and Kenny. Pet., 2. But their testimony suffers several shortcomings, including speculating about a conference neither declarant attended. POR, 29-32. Further, the parties’ experts agree that IEEE conference proceedings are usually made available sometime “*after*” the conference. EX2044, 45:19-47:10; EX1087, 78:22-79:6. As Masimo’s expert Dr. Duckworth explained, IEEE papers

are typically unavailable until after the conference because “in most cases authors are still revising them right up to the conference and even after the conference.”

EX1087, 141:18-142:14. Apple has no response to these arguments. Reply, 1-3.

Masimo also explained, and Apple’s new declarant (MacPherson) confirms, that IEEE’s “regular practice” and “ordinary course” is to publish its proceedings and articles on IEEE Xplore. POR, 28; EX1082 ¶¶7-9. Masimo thus showed D’Angelo is not §102(b) art because it was not publicly accessible until being “added to IEEE Xplore” on **December 1, 2011**. POR, 28; EX2043. Again, Apple does not address Masimo’s argument or even mention IEEE Xplore. Reply, 1-3.

Apple now focuses on MacPherson’s testimony. *Id.* But like Apple’s other declarants, MacPherson did not attend the 2011 conference yet speculates about what occurred there. EX1082; EX2057, 12:10-13:2; 18:8-17. MacPherson’s declaration states the conference’s proceedings “were made available no later than the last day of the conference.” EX1082 ¶11. But at his deposition, MacPherson revealed he based that statement on IEEE’s “business rule.” EX2057, 20:8-21:13. He admitted IEEE’s “business rule” treats a conference’s start date as an article’s publication date “[e]ven if an article was **not distributed** during the conference.” *Id.*, 21:3-8. MacPherson based that on general familiarity with larger IEEE conferences, and he does not recall handling the EMBS annual meetings. *Id.*, 18:8-17. MacPherson could only speculate based on IEEE’s “business rule” because he

admittedly did not know if D'Angelo was made available at the conference. *Id.*, 27:22-28:3. Indeed, he had virtually no personal knowledge of the conference.

MacPherson agreed IEEE's "standard practice" is for a "publication chair" to decide what gets distributed at the conference, but did not know who the 2011 conference's publication chair was or if they decided to distribute anything there. *Id.*, 24:17-28:3. He also did not know Hurricane Irene prevented several individuals from presenting, and had no knowledge of how the hurricane otherwise disrupted the conference. *Id.*, 28:15-29:11. And he provided no evidence that an interested POSITA could have reasonably located D'Angelo before September 20, 2011. *See generally id.* For these reasons, the Board should "accord little weight" to MacPherson's speculative and unhelpful testimony about D'Angelo. *See, e.g., Smart Microwave Sensors GmbH v. Wavetronix LLC*, 2017 WL 3034507, *12 (PTAB July 17, 2017) (finding petitioner failed to show paper's publicly availability despite nearly identical declaration from IEEE employee).

Further, Apple argues papers "are prior art as of the date of their presentation." Reply, 2. But Apple misstates the law. Even if D'Angelo was presented at the conference (which is unknown), it would not automatically be a prior art printed publication usable here. *In re Klopfenstein*, 380 F.3d 1345, 1349-50 & n*4 (Fed. Cir. 2004). Indeed, whether a document is a prior art printed publication requires a "case-by-case" inquiry. *Id.*, 1350. And "[t]he key inquiry is whether the reference

was made sufficiently accessible to the public” that an interested POSITA could reasonably locate it before the critical date. *Hamamatsu Photonics v. SEMICAPS Pte Ltd.*, 2019 WL 1292463, *14 (PTAB Mar. 18, 2019).

Despite having the burden, Apple fails to address this inquiry for D’Angelo. Apple ignores that the 2011 IEEE EMBS conference proceedings comprise 8,500+ pages across 17 volumes, and were not available on DVD until March 2012. EX2057, 15:6-16:20; EX2053-EX2054. And Apple never shows when those proceedings were indexed. Thus, even if the proceedings were indexed and available by the conference’s end, Apple fails to show an interested POSITA reasonably could have located D’Angelo within the massive conference proceedings before September 20, 2011. *See, e.g., Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773 (Fed. Cir. 2018) (affirming indexed reference not publicly accessible where finding it required POSITA to skim through hundreds of titles).

Because Apple fails to show D’Angelo was publicly accessible before September 20, 2011, Apple fails to show D’Angelo is §102(b) art.

B. D’Angelo Is Not §102(a) Prior Art

1. Masimo’s Earlier-Reduction-to-Practice Argument Was Not Improperly Incorporated by Reference

Masimo’s POR argues D’Angelo is not §102(a) art because of Masimo’s earlier reduction to practice. POR, 32-33. Apple now asserts this reduction-to-

practice argument was incorporated into the POR by referencing declaration testimony. Reply, 3-4. Apple is wrong.

First, Masimo’s reduction-to-practice argument is expressly included **in the POR**: “the inventions recited in Claims 1 and 13 were reduced to practice by August 31, 2011,” months “before the reference date of D’Angelo.” POR, 32-33. The argument is not incorporated by reference to other documents.

Second, Masimo supported its reduction-to-practice argument with Duckworth’s testimony. *Id.* (citing EX2037 ¶¶41-88). Duckworth details the technical support for Masimo’s argument, including a prototype system, a video and document about that prototype, and the testimony of an inventor (Muhsin) who developed that prototype. EX2037 ¶¶41-88 (discussing EX2038-EX2040). And parties are routinely permitted “to support [their] contention with expert testimony.” *See, e.g., Gene Co. Pty Ltd. v. Trustees of Columbia Univ.*, 2024 WL 3104511, *18 (PTAB June 24, 2024) (permitting reliance on expert’s declaration that “do[es] not provide wholly new arguments not found in the [briefing]” and instead provides “technical details underlying” the brief’s arguments); *Expedia, Inc. v. IBM Corp.*, 2019 WL 2511366, *2 (PTAB June 17, 2019) (permitting reliance on declaration).

Third, Apple argues Masimo violated Rule §42.6(a)(3) by citing Duckworth’s declaration. Reply, 3-4. But that rule prohibits incorporation of “arguments,” and

an expert declaration is “evidence, not argument.” *Silicon Labs., Inc. v. Cresta Tech. Corp.*, 2016 WL 8969909, *7 (PTAB Aug. 11, 2016).

Fourth, 37 C.F.R. § 42.6(a)(3) was intended to prevent the Board from having to “play[] archaeologist with the record.” *Xilinx, Inc. v. Arbor Global Strategies LLC*, 2022 WL 685889, *21 (Mar. 2, 2022). And Apple does not even argue that Masimo citing Duckworth’s testimony forces the Board to play archaeologist. Reply, 3-4. Nor could it, because the cited Duckworth testimony directly supports the POR’s argument—Claims 1 and 13 were reduced to practice by August 31, 2011. POR, 32-33 (citing EX2037 ¶¶41-88).

Apple asserts Masimo provided “no explanation or analysis” of the relevance of Duckworth’s testimony to Masimo’s reduction-to-practice argument. Reply, 3-4. But the relevance of the cited Duckworth testimony is apparent starting with its very first sentence, which explains “every limitation of independent Claims 1 and 13 of the ’507 Patent was actually reduced to practice on or before August 31, 2011.” EX2037 ¶41. Duckworth describes relevant technical details based on documents and Muhsin’s testimony. EX2037 ¶¶41-88. No additional “explanation or analysis” of relevance for Duckworth or Muhsin’s testimony was required.

Fifth, Apple’s incorporation-by-reference argument is “incomplete” and fails because Apple “does not address the interplay with 37 C.F.R. § 42.24.” *Silicon*, 2016 WL 8969909, *7. Indeed, Apple ignores “the Board often analyzes whether

incorporation by reference is improper based on whether such incorporation would circumvent [word] limits.” *Id.* Here, Masimo’s 10,608-word POR was far below the 14,000-word limit. Thus, unsurprisingly, Apple never even argues Masimo cited Duckworth’s testimony to circumvent the word limit.

2. D’Angelo Is Not §102(a) Prior Art Because Claims 1 and 13 Were Reduced to Practice Before D’Angelo

Masimo showed D’Angelo is not §102(a) art because of the earlier reduction to practice of Claims 1 and 13. POR, 32-33. Apple challenges the corroboration for one aspect of Masimo’s reduction-to-practice evidence. Reply, 4-6. Specifically, Apple argues there is no evidence corroborating inventor’s (Muhsin’s) testimony that the “processing board depicted in [the] ‘Prototype Video’ functioned ‘to generate the SpO2 measurement values.’” *Id.* In doing so, Apple assumes every aspect of Masimo’s reduction to practice must be corroborated by information independent of the inventor. *Id.*, 4-6. But Apple’s assumption is legally erroneous.

Apple ignores the sufficiency of corroboration “is evaluated under a ‘rule of reason,’ considering all pertinent evidence.” *Medtronic, Inc. v. Teleflex Innovations S.A.R.L.*, 68 F.4th 1298, 1306 (Fed. Cir. 2023). And contrary to Apple’s assumption, the rule of reason ***does not*** require “every individual aspect of reduction to practice be corroborated.” *Id.* Indeed, “requiring every point of a reduction to practice be corroborated by evidence having a source totally independent of the inventor...***is the antithesis of the rule of reason.***” *Id.*, 1307 (cleaned up). Because the rule of reason

does not require corroboration of the single aspect of reduction to practice Apple challenges, Apple’s argument fails.

Further, under the rule of reason, “the corroborative evidence simply needs to be sufficient to support the credibility of the inventor’s story.” *Id.*, 1306-07. And here, the corroborative evidence amply supports Muhsin’s testimony. Contrary to Apple’s misstatement (Reply, 5), the collaborative evidence includes more than the Prototype Video and User Interface Summary. Indeed, Muhsin relied extensively on the physical prototype shown in the Prototype Video—the prototype he helped develop being demonstrated in the video he took. EX2038 ¶¶6-23. This evidence supports the credibility of Muhsin’s testimony, and together it shows Claims 1 and 13 were reduced to practice before D’Angelo. EX2037 ¶¶47-88. Accordingly, D’Angelo is not §102(a) art. *Id.*; POR, 32-33.

C. Even If D’Angelo Were Prior Art, A POSITA Would Not Have Been Motivated To Modify Mendelson Based On D’Angelo

Apple now argues that “[a]s identified in the Petition, multiple reasons would have prompted a POSITA to apply D’Angelo to Mendelson.” Reply, 16 (citing Pet., 40-43). But the Petition alleges just one reason: providing the PDA with “backup functionality” by allowing it to “read out” measured data “even when [the Receiver Module’s] battery is empty.” Pet., 42. Masimo responded with seven reasons why a POSITA would *not* have been motivated to modify Mendelson’s PDA to power its Receiver Module as Apple proposes. POR, 33-44. On Reply, Apple argues

Masimo did not show a POSITA would have been “dissuaded” from Apple’s proposed modification. Reply, 16. But this is improper burden shifting. Apple had to show affirmative reasons to modify Mendelson as proposed yet failed to do so.

1. First Reason

Apple argues its modification provides “backup functionality” that “would not impede the resulting system’s ability to provide remote monitoring.” Reply, 17. But physically connecting the PDA to the Receiver Module worn by an injured person is the opposite of the “remote” monitoring. POR, 35. Further, Apple’s proposal would require the medic with the PDA to travel into the dangerous setting where the injured person was located. EX2044, 66:1-7; EX2037 ¶144. Thus, Apple’s proposal would not only impede, but defeat, Mendelson’s intended purpose of providing remote monitoring while keeping medics out of harm’s way. POR, 34-37.

Apple also asserts that Mendelson describes “non-hazardous use cases” like training exercises. Reply, 17-18. But Mendelson’s describes monitoring “*soldiers* during training exercises,” which are hazardous. EX1011, 2, 4. Indeed, military training exercises mimic combat, making them dangerous enough that monitoring soldiers should be done remotely, as Mendelson teaches. EX1011, 1-4. And regardless of hazards, Mendelson repeatedly explains its system’s primary purpose and benefit is providing “remote monitoring” using “wireless” Sensor Modules,

Receiver Modules, and a PDA. *Id.*; POR, 34-35. Physically connecting the PDA and Receiver Module is incompatible with Mendelson’s teachings and thus, a POSITA would not have been motivated to do so. POR, 35-36.

Apple further asserts Mendelson “describes” using its system in close proximity to medical personnel, including “with ‘patients during emergency transport’” and to “‘distribute sensors’” to combat casualties. Reply, 18 (quoting EX1011, 2-3). But Mendelson mentions that “some companies” make devices used during patient transport—Mendelson is not one of them. EX1011, 2. Mendelson describes using its system for remote monitoring “in the field” only. *Id.*, 1. And just because sensors are initially distributed does not mean a medic would later enter the combat area to power someone’s Receiver Module with their PDA. Indeed, doing so would defeat Mendelson’s intended purpose, which is why a POSITA would not have been motivated to modify Mendelson as Apple proposes. POR, 34-36.

Moreover, a POSITA would have understood that even if a medic were close to an injured person, the medic would have monitored the person directly, with typical medical equipment (not Mendelson’s system), and applied the appropriate care. *Id.*, 37. Apple implies a medic would not carry “this additional” equipment. Reply, 18. But there would be nothing “additional”—medics already carry “typical” medical equipment. POR, 37. Apple also argues a medic would not use “the same equipment on multiple different casualties” due to the risk of spreading blood or

body fluids between people. Reply, 18; EX1083 ¶41. Given the contamination risk Apple identifies, a POSITA would not have modified Mendelson such that the same PDA was used to power the Receiver Modules attached to different casualties. *See id.*

Apple relies on a “teaching away” case (*SightSound*) to argue Masimo does not identify disclosure “*criticiz[ing]* D’Angelo’s solution.” Reply, 17. Apple also argues its proposed solution need not be the best option. *Id.* But Apple’s criticisms are misplaced—Masimo never argued teaching away or that a motivation had to be the best option. POR, 34-37. Rather, Masimo showed Apple’s proposed modification would have defeated Mendelson’s intended purpose, which confirms a POSITA would not have been motivated to do what Apple proposes. *Id.*

2. Second Reason

The Petition relied on the following D’Angelo disclosure as motivation for Apple’s proposed combination: “allowing to read out the management device with the smartphone even when [the device’s] battery is empty.” Pet., 37, 42 (quoting EX1007, 2-3). Apple now argues that sentence refers reading out both stored and “current measurements” (Reply, 20), but it does because current measurements cannot be read out when the “battery is empty.” Further, stored data can only be “read out” of nonvolatile memory, which Mendelson lacks and Apple’s Petition never proposed adding. *Id.*, 42; POR, 38-39. Apple now proposes combining

D'Angelo's microSD card with Mendelson's Receiver Module. Reply, 20. But Apple's untimely new theory should not be considered. *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1365-67 (Fed. Cir. 2023) (affirming Board's refusal to consider new combination raised on reply). But even if considered, this new theory fails because Apple shows no motivation for the additional modification. Reply, 20.

3. Third Reason

Apple does not dispute its proposed modification would limit Mendelson's PDA to monitoring the one Receiver Module to which it is connected. POR, 40; Reply, 20. Instead, Apple argues "Mendelson's unmodified system only functions to monitor one person at a time." Reply, 20. Apple is wrong. While the PDA's screen shows data from one person at a time, Mendelson explains the "PDA can monitor *multiple wearable pulse oximeters simultaneously*" to allow medics to care for "*those [people]* with the most urgent needs." EX1011, 2; EX1087, 85:1-3 (Mendelson's PDA "collected information from *multiple devices*, but [] only show[ed] one individual on the screen at a time."). Thus, a POSITA would not have been motivated to modify Mendelson as proposed because doing so would eliminate Mendelson's ability to monitor multiple people simultaneously. POR, 40.

4. Fourth Reason

Apple criticizes Masimo's fourth reason by arguing it would be wasteful to replace the Receiver Module's batteries "before every use." Reply, 21-22. But

replacing batteries before every use is not Masimo’s argument. Instead, Masimo argues the Receiver Module’s existing batteries provide power for days of operation, which is plenty for the transient hazardous events the system was designed to monitor. POR, 41. Therefore, using the PDA to provide backup power would be redundant of the Receiver Module’s existing power supply. *Id.* Apple does not disagree. Reply, 21-22.

Apple also relies on its expert to vaguely assert providing backup power could be “helpful in applicable scenarios.” *Id.* (citing EX1083 ¶¶50-51). But such “conclusory and unsupported expert testimony” fails to show obviousness. *TQ Delta*, 942 F.3d at 1360-61. Further, Apple repeats its no-teaching-away and not-the-best-option arguments (Reply, 22), which are misplaced as explained above.

5. Fifth Reason

Apple now assumes any power drawn by the PDA would be “negligible” in the “one or two minutes” it takes to measure a person’s vital signs. Reply, 22-23. But the Petition proposes using the PDA to provide power for measuring whenever the Receiver Module’s battery is dead—without any one-or-two-minute limitation. Pet., 42. Apple’s belated new attempt to insert a temporal limitation on its modification should not be considered. *See, e.g., Yita*, 69 F.4th at 1365-67. And Masimo already explained why the option to provide “backup power” would not

have motivated Apple's modification. POR, 34-44. Apple also repeats its no-teaching-away argument (Reply, 23), which is misplaced as explained above.

6. Sixth Reason

Apple argues the Receiver Module already includes "a serial port for connecting to the PDA" (*id.*, 24), but Mendelson never discusses that port or explains it connects to the PDA. EX1011. Apple also repeats its no-teaching-away and not-the-best-option arguments (Reply, 24), which are misplaced as explained above.

7. Seventh Reason

Apple does not dispute its expert's opinions were steeped in speculation about what a POSITA "might," "can," or "could" do. POR, 43-44; Reply, 25. Apple merely dismisses this as "nitpicking," but Kenny's speculative testimony fails to show what a POSITA *would have been motivated* to do. *Id.*

**III. EVERY GROUND BASED ON GOLDSMITH
FAILS TO DEMONSTRATE OBVIOUSNESS**

For its Goldsmith grounds, Apple repeats its arguments for the "Mendelson-D'Angelo combination" (Reply, 25-27), which fail to show obviousness as explained above. Apple also now relies on Goldsmith's mention of "an internal backup battery." *Id.* (citing EX1009, ¶¶41, 53). But in the Petition, Apple did not identify that disclosure, much less propose combining with Goldsmith's backup battery. Pet., 64. Thus, this new argument should be rejected. *See, e.g., Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1367 (Fed. Cir. 2015) (rejecting

reliance on “previously unidentified portions of a prior-art reference” to make new argument). Apple’s new argument is also improperly incorporated by reference to pages of expert testimony, pushing Apple’s 5,598-word Reply beyond the 5,600-word limit. Reply, 26 (citing EX1083 ¶60); 37 C.F.R. §42.6(a)(3).

IV. CONCLUSION

For the above reasons and those in the POR, Petitioner has not shown by a preponderance of the evidence that the challenged claims are unpatentable.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 6, 2025

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), Counsel for Patent Owner Masimo Corporation hereby certifies that this document complies with the type-volume limitation of 37 C.F.R. § 42.24(c)(4). According to Microsoft Office Word 2010's word count, this document contains approximately 5,569 words, including any statement of material facts to be admitted or denied in support, and excluding the table of contents, table of authorities, mandatory notices under § 42.8, exhibit list, certificate of service or word count, or appendix of exhibits or claim listing.

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 6, 2025

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CERTIFICATE OF SERVICE

I hereby certify that, pursuant to 37 C.F.R. § 42.6(e) and with the agreement of counsel for Petitioner, a true and correct copy of **PATENT OWNER MASIMO CORPORATION'S SUR-REPLY AND EXHIBITS 2051-2057** are being served electronically on March 6, 2025, to the e-mail addresses shown below:

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