

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner

IPR2024-00294
Patent 10,736,507

**PETITIONER'S REPLY
TO PATENT OWNER'S RESPONSE**

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LIST OF EXHIBITS

APPLE-1001	U.S. Patent No. 10,736,507 (“the ’507 patent”)
APPLE-1002	U.S. Patent No. 10,736,507 File History
APPLE-1003	Declaration of Dr. Thomas Kenny
APPLE-1004	RESERVED
APPLE-1005	U.S. Patent Application Pub. No. 2008/0004904 to Tran (“Tran”)
APPLE-1006	U.S. Patent No. 6,658,276 to Kianl et al. (“Kianl”)
APPLE-1007	Lorenzo T. D’Angelo, et al., A Sensor Network to iPhone Interface Separating Continuous and Sporadic Processes in Mobile Telemedicine, 33rd Annual International Conference of the IEEE EMBS Boston, Massachusetts USA, August 30 - September 3, 2011 (“D’Angelo”)
APPLE-1008	U.S. Patent No. 7,812,826 to Ording et al. (“Ording”)
APPLE-1009	U.S. Patent Application Pub. No. 2007/0093786 to Goldsmith et al. (“Goldsmith”)
APPLE-1010	U.S. Patent Application Pub. No. 2010/0324387 to Moon et al. (“Moon”)
APPLE-1011	Y. Mendelson, et al., A Wearable Reflectance Pulse Oximeter for Remote Physiological Monitoring, Proceedings of the 28th IEEE EMBS Annual International Conference New York City, USA, Aug 30-Sept 3, 2006
APPLE-1012	Declaration of June Munford
APPLE-1013	U.S. Patent No. 8,195,848 to Jones (“Jones”)

- APPLE-1014 Exemplary Infringement Claim Chart for the '507 patent from *Apple Inc. v. Masimo Corporation et al.*, Case No. 1-22-cv-01378 (D. Del. Oct. 20, 2022)
- APPLE-1015 Exemplary Infringement Claim Chart for the '911 patent from *Apple Inc. v. Masimo Corporation et al.*, Case No. 1-22-cv-01378 (D. Del. Oct. 20, 2022)
- APPLE-1016 – 1059 [RESERVED]
- APPLE-1060 U.S. District Courts–Combined Civil and Criminal Federal Court Management Statistics (Sep. 30, 2023) | United States Courts (uscourts.gov), https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distprofile0630.2023.pdf
- APPLE-1061 Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) (“Director’s Guidance”)
- APPLE-1062 Apple’s Complaint for Patent Infringement (Design), *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01377 (D. Del. Oct. 20, 2022)
- APPLE-1063 Apple’s Complaint for Patent Infringement (Utility), *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01378 (D. Del. Oct. 20, 2022)
- APPLE-1064 Defendant Masimo Corporation’s Answer to Complaint and Counterclaims, *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01378 (D. Del. Dec. 12, 2022)
- APPLE-1065 Order Granting Joint Motion to Amend the Case Schedule, *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01378 (D. Del. Sep. 21, 2023)
- APPLE-1066 Stipulation by Apple Inc.

APPLE-1067 Email Identifying Masimo's District Court Invalidity Grounds (Nov. 16, 2023)

APPLE-1068 Excerpt of Apple's District Court Expert Invalidity Report, *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01378 (Nov. 22, 2023)

APPLE-1069 Order Granting Unopposed Motion to Stay Certain Patent Counterclaims, *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01378 (Jan. 10, 2023)

APPLE-1070 – 1074 [RESERVED]

APPLE-1075 Joint Letter for March 20, 2024 Case Management Conference, *Apple Inc., v Masimo Corporation, et al.*, Case No. 1-22-cv-01378 (Mar. 16, 2024)

APPLE-1076 Combined Civil and Criminal Federal Court Management Statistics (Dec. 31, 2023) | United States Courts (uscourts.gov), available at: https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf

APPLE-1077 Median Time to Disposition in Cases Terminated After Hearing or Submission | United States Court of Appeals for the Federal Circuit (Sep. 30, 2023), available at: [MedDispTimeMERITS-Table-FY23.pdf \(uscourts.gov\)](https://www.uscourts.gov/sites/default/files/MedDispTimeMERITS-Table-FY23.pdf)

APPLE-1078 *Sotera* Stipulation by Apple Inc.

APPLE-1079 Board Email Authorizing Motion to Strike and Evidence

APPLE-1080 Email Record of Meet-and-Confer Regarding Patent Owner Response, Petitioner Reply, and Patent Owner Sur-Reply Deadline Extensions

APPLE-1081 Email Record of Meet-and-Confer Regarding Motion to Strike

APPLE-1082 Declaration of Gordon MacPherson

APPLE-1083 Second Declaration of Dr. Thomas Kenny

APPLE-1084	Definition of “responsive” from Chambers Concise Dictionary, Chambers Harrap Publishers Ltd. (2009)
APPLE-1085	Definition of “responsive” from Bloomsbury English Dictionary, Bloomsbury Publishing Plc (2004)
APPLE-1086	Definition of “response” from The New Penguin Dictionary of Civil Engineering, Penguin Books (2005)
APPLE-1087	Transcript of the Deposition of Dr. R. James Duckworth (December 20, 2024)
APPLE-1088	RESERVED
APPLE-1089	RESERVED
APPLE-1090	RESERVED
APPLE-1091	U.S. Patent Application Pub. No. 2006/0253010 to Brady et al. (“Brady”)
APPLE-1092	U.S. Patent No. 7,598,878 to Goldreich (“Goldreich”)
APPLE-1093	U.S. Patent Application Pub. No. 2013/0069431 to Tseng et al. (“Tseng”)
APPLE-1094	J. Hudson, et al., Usability Testing of a Prototype Phone Oximeter with Healthcare Providers in High- and Low-Medical Resource Environments, 67 Anaesthesia 957-67 (2012) (“Hudson”)
APPLE-1095	Joseph A. Sankman, et al., Development of a Remote Pulse Oximeter, Bachelor’s thesis, University of Arizona (2010)
APPLE-1096	RESERVED
APPLE-1097	Walter Karlen, et al., Human-Centered Phone Oximeter Interface Design for the Operating Room, Proceedings of the International Conference on Health Informatics, Rome, Italy, SciTePress, 433-38 (2011)

APPLE-1098	Press Release, EDN, Nonin Medical Launches Low Power Xpod® Model 3012LP, OEM Pulse Oximeter Globally (May 3, 2011) available at https://www.edn.com/nonin-medical-launches-low-power-xpod-model-3012lp-oem-pulse-oximeter-globally/
APPLE-1099	Nonin, Xpod®: External EOM Pulse Oximeter (February 9, 2011) available at http://www.nonin.com/OEMSolutions/Xpod
APPLE-1100	U.S. Patent Application Pub. No. 2010/0146463 to Cho et al.
APPLE-1101	U.S. Patent No. 7,650,176 to Sarussi et al.
APPLE-1102	U.S. Patent No. 7,468,036 to Rulkov et al.
APPLE-1103	U.S. Patent Application Pub. No. 2009/0231960 to Hutcheson
APPLE-1104	U.S. Patent Application Pub. No. 2007/0173705 to Teller et al.
APPLE-1105	U.S. Patent Application Pub. No. 2007/0016053 to Lo et al.
APPLE-1106	Arpita Shah, PDA based ambulatory pulse oximeter, New Jersey Institute of Technology, May 2006 (“Shah”)
APPLE-1107	Transcript of the Deposition of Bilal Muhsin (January 8, 2025)
APPLE-1108	Second Declaration of June Munford

CLAIM LISTING

Claim 1	
[1pre]	A mobile pulse oximetry system for informing a user of mobile measurement of oxygen saturation (“SpO2”), the mobile pulse oximetry system comprising:
[1a]	an SpO2 measurement system including:
[1b]	an optical sensor configured to output one or more signals responsive to light from a light source attenuated by tissue of the user at a measurement site, said one or more signals responsive to an oxygen saturation of said tissue; and
[1c]	a processing board in data communication with the optical sensor and a mobile computing device including a display and cellular communication, wherein the processing board is configured to:
[1d]	receive said one or more signals from the optical sensor;
[1e]	process said one or more signals to generate SpO2 measurement values; and
[1f]	output the SpO2 measurement values to the mobile computing device; and
[1g]	one or more hardware processors of the mobile computing device configured to execute an application, the application configured to execute commands to:
[1h]	generate a graphical user interface having a plurality of display portions;
[1i]	display, in at least one portion of the plurality of display portions, a representation of a physiological parameter of a plurality of physiological parameters comprising at least the SpO2 measurement values; and

[1j]	display, in a different portion of the plurality of display portions, a plurality of user inputs configured to allow the user to interact with at least one of the plurality of display portions or the application;
[1k]	wherein the processing of the one or more signals to generate SpO2 measurement values is performed only on the processing board, thereby freeing up memory available to the mobile computing device; and
[1l]	wherein the processing board is configured to draw power for operation from the mobile computing device.
Claim 2	
[2pre]	The mobile pulse oximetry system of claim 1, wherein the application is configured to execute commands to:
[2a]	perform a trend analysis on received SpO2 measurement values; and
[2b]	display results of the trend analysis in at least one portion of the plurality of display portions.
Claim 3	
[3]	The mobile pulse oximetry system of claim 2, wherein the display is touch-sensitive, and wherein the application is configured to execute commands to narrow or expand the displayed results of the trend analysis in response to the user using a pinch gesture.
Claim 4	
[4]	The mobile pulse oximetry system of claim 1, wherein the application is configured to execute commands to set reminders to take future measurements.
Claim 5	
[5]	The mobile pulse oximetry system of claim 1, wherein the application is configured to execute commands to output one or more alarms associated with SpO2 measurement values that are above or below threshold SpO2 measurement values.
Claim 6	

[6]	The mobile pulse oximetry system of claim 1, wherein the application is configured to execute commands to output one or more reminders to use the optical sensor to take measurements of SpO2 measurement values at predetermined times or cycles.
Claim 7	
[7]	The mobile pulse oximetry system of claim 1, wherein the application is configured to execute commands to update the representation of the physiological parameter to comprise one or more of a plurality of graphical representations of the SpO2 measurement values, the plurality of graphical representations comprising at least one of bar graphs or charts.
Claim 8	
[8]	The mobile pulse oximetry system of claim 1, wherein the application is configured to execute commands to output an alert, via a network to a designated physician or other care provider, regarding abnormal SpO2 readings.
Claim 9	
[9]	The mobile pulse oximetry system of claim 1, wherein the mobile computing device comprises a smartphone.
Claim 10	
[10]	The mobile pulse oximetry system of claim 1, wherein the mobile computing device comprises a wearable computing device.
Claim 11	
[11]	The mobile pulse oximetry system of claim 1, wherein the mobile computing device comprises a wristwatch.
Claim 12	
[12]	The mobile pulse oximetry system of claim 1, wherein the SpO2 measurement system is configured to wirelessly transmit the SpO2 measurement values to the mobile computing device.

Claim 13	
[13pre]	A computer-implemented method of informing a user of mobile measurement of oxygen saturation (“SpO2”), the computer-implemented method comprising:
[13a]	outputting, from an optical sensor of an SpO2 measurement system, one or more signals responsive to light from a light source attenuated by tissue of the user at a measurement site, said one or more signals responsive to an oxygen saturation of said tissue; and
[13b]	via a processing board of the SpO2 measurement system, the processing board in data communication with the optical sensor and a mobile computing device including a display:
[13c]	receiving said one or more signals from the optical sensor;
[13d]	processing said one or more signals to generate the SpO2 measurement values; and
[13e]	outputting the SpO2 measurement values to the mobile computing device; and
[13f]	via an application configured to execute commands on the mobile computing device:
[13g]	generating a graphical user interface having a plurality of display portions;
[13h]	displaying, in at least one portion of the plurality of display portions, a representation of a physiological parameter of a plurality of physiological parameters comprising at least the SpO2 measurement values; and
[13i]	displaying, in a different portion of the plurality of portions, a plurality of user inputs configured to allow the user to interact with at least one of the plurality of display portions or the application.
Claim 14	
[14pre]	The computer-implemented method of claim 13, further comprising, via the application:

[14a]	performing a trend analysis on received SpO2 measurement values; and
[14b]	displaying results of the trend analysis in at least one portion of the plurality of display portions.
Claim 15	
[15]	The computer-implemented method of claim 13, further comprising, via the application, outputting one or more alarms associated with SpO2 measurement values that are above or below threshold SpO2 measurement values.
Claim 16	
[16]	The computer-implemented method of claim 13, further comprising, via the application, outputting one or more reminders to use the optical sensor to take measurements of SpO2 measurement values at predetermined times or cycles.
Claim 17	
[17]	The computer-implemented method of claim 13, further comprising, via the application, updating the representation of the physiological parameter to comprise one or more of a plurality of graphical representations of the SpO2 measurement values, the plurality of graphical representations comprising at least one of bar graphs or charts.
Claim 18	
[18]	The computer-implemented method of claim 13, further comprising, via the application, outputting an alert, via a network to a designated physician or other care provider, regarding abnormal SpO2 readings.
Claim 19	
[19]	The computer-implemented [method of] claim 13, further comprising wirelessly transmitting the SpO2 measurement values from the SpO2 measurement system to the mobile computing device.
Claim 20	

[20]	The computer-implemented method of claim 13, further comprising, via the application, enabling the user to set reminders to take future measurements.
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I. INTRODUCTION

Masimo's arguments rely on a claim construction that Masimo has refused to adopt and draw arbitrary lines regarding the types of signal processing that fall within the scope of the claims. But these arbitrary distinctions drawn by Masimo find no support in the '507 patent or anywhere else in the record. The arguments in the POR also fail because the evidence of record demonstrates that D'Angelo *is* prior art to the '507 patent and would have been properly combined with the other prior art of record to achieve predictable benefits.

II. D'ANGELO IS PRIOR ART TO THE '507 PATENT

A. D'Angelo is Pre-AIA §102(b) Prior Art and Cannot Be Sworn Behind

D'Angelo qualifies as prior art under Pre-AIA §102(b) as a "printed publication" publicly available "more than one year prior to" the earliest effective filing date of the '507 patent and therefore cannot be sworn behind. Pre-AIA 35 U.S.C. §102. D'Angelo is a paper that was presented at the IEEE EMBS Annual International Conference held August 30th to September 3rd, 2011. Pet., 2; APPLE-1007, 1; APPLE-1082, ¶¶8-11; APPLE-1003, ¶114; APPLE-1012, ¶¶12, 16-20, 22. As Gordon MacPherson (Director, Board Governance & Policy Development at IEEE) testifies, D'Angelo "*was published in* the 33rd Annual International Conference of the IEEE EMBS Boston, Massachusetts, USA, held on *August 30-September 3, 2011*" and "[c]opies of the conference proceedings were *made*

*available no later than the last day of conference.*¹ APPLE-1082, ¶¶1-12; *see also* APPLE-1012, ¶¶12, 22 (“...was first made available to the public at the 2011 IEEE EMBS Annual International Conference.”) APPLE-1003, ¶114. As such, D’Angelo was publicly available “no later than” September 3, 2011, more than one year prior to the September 20, 2012 earliest effective filing date of the ’507 patent, and is therefore prior art under Pre-AIA §102(b). The conference was advertised to the general public and practitioners in the relevant subject matter would have known of the conference. APPLE-1012, ¶¶16-17; APPLE-1003, ¶114.

Papers that are presented at and published in the proceedings of such conferences are prior art as of the date of their presentation, which in this case is no later than September 3, 2011. *See, e.g., Medtronic Inc., v. Barry*, 891 F.3d 1368 (Fed. Cir. 2018); *Mass. Inst. of Tech. v. AB Fortia*, 774 F.2d 1104, 1108-09 (Fed. Cir. 1985); *GoPro, Inc. v. Contour IP Holding LLC*, 908 F.3d 690 (Fed. Cir. 2018); *In re Carol F. Klopfenstein and John L. Brent, Jr.*, Slip Op. No. 03-1583 (Fed. Cir. August 18, 2004); *see also, Provisur Techs., Inc.*, 92 F.4th 1059, 1067-68 (Fed. Cir. 2024); (“Where, as here, ‘a publication's purpose is dialogue with the intended audience, that purpose indicates public accessibility.’”) *Microsoft Corp. v. Bradium Tech. LLC*, IPR2016-00448, Paper 9 at 13-14 (PTAB July 25, 2016)

¹ All emphasis added unless otherwise noted.

(journal articles “are distributed widely and intended to be accessible to the public”); APPLE-1082, ¶¶1-12.

B. The POR Fails to Establish an Earlier Date of Invention for Any Claims of the ’507 Patent

Because D’Angelo is Pre-AIA §102(b) prior art, Masimo’s arguments regarding an alleged earlier reduction to practice of Claims 1 and 13 are moot. POR, 32-33. Moreover, Masimo’s proof for establishing an earlier date of invention for any claims of the ’507 patent is utterly lacking.

1. *The POR improperly incorporates by reference all arguments regarding alleged earlier reduction to practice*

Masimo asserts that “D’Angelo is not prior art,” alleging that “the inventions recited in the independent Claims 1 and 13 were reduced to practice by August 31, 2011.” POR, 26, 32-33. Yet the POR includes *no analysis* whatsoever to support this assertion. *Id.* Instead, the POR cites *49 paragraphs* of the Duckworth Declaration with explanation as to their relevance. *Id.*, 32-33. Worse yet, Dr. Duckworth has no personal knowledge regarding an alleged earlier reduction to practice, but rather incorporates *17 additional paragraphs* from a declaration submitted by named inventor Bilal Muhsin. *See* EX2037, ¶¶41-88. The Muhsin Declaration (EX2038) is never mentioned nor cited in the POR.

Both the mere citation to 49 paragraphs of the Duckworth Declaration with no analysis or explanation of their relevance and the two-layered incorporation by

reference of 17 additional paragraphs from the Muhsin Declaration are an improper incorporation by reference and as such, should be ignored by the Board. *See e.g.*, 37 C.F.R. §42.6(a)(3); *Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1370-72; *Blackberry Corp. v. Mobilemedia Ideas LLC*, Case No IPR2013-00016, Paper No. 32 at 21 (PTAB Feb. 25, 2014); *Google LLC v. Zipit Wireless Inc.*, IPR2019-01567, Paper 38, 32 (PTAB March 9, 2021) (“We acknowledge the claim chart in the Heredia Declaration...but consider this improper incorporation by reference of a declaration into a brief.”).

As such, the POR fails to establish an earlier date of invention for any claims.

2. *The improperly incorporated portions of the Duckworth and Muhsin Declarations fail to demonstrate that all elements of Claims 1 and 13 were earlier reduced to practice*

Even if the relevant portions of the Duckworth and Muhsin declarations were properly included in the POR (which they were not), the evidence of record fails to demonstrate that all elements of Claims 1 and 13 were present in the prototype shown in “Prototype Video” (EX2039). Claims 1 and 13 recite multiple distinct components, including “an optical sensor,” “a processing board” and “a mobile computing device,” with each component performing specific recited functions. *See* APPLE-1001, Cls. 1, 13. In particular, Claims 1 and 13 recite that the processing board “process[es] said one or more signals to generate the SpO2

measurement values.” *Id.*

By contrast, “Prototype Video” (which is never mentioned in the POR), shows a system having various components, but includes no details on what data is output by any of the components or which component(s) actually “generate the SpO2 measurement values.” EX2039, 0:00-0:44. The “User Interface Summary” does not correct this deficiency. EX2040, 1-12. As such, the only evidence of record regarding what information is output and/or generated by the various prototype components is the testimony of named inventor Bilal Muhsin.

Such a reliance on the uncorroborated testimony of Mr. Muhsin alone, even if not improperly incorporated by reference, is insufficient to demonstrate earlier invention or reduction to practice. “Inventor testimony of conception ***must be corroborated by other, independent information.***” *Kolcraft Enters. v. Graco Children's Prods.*, 927 F.3d 1320, 1324 (Fed. Cir., 2019) (citing *Apator Miitors ApS v. Kamstrup A/S*, 887 F.3d 1293, 1295 (Fed. Cir. 2018) *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996); *Hahn v. Wong*, 892 F.2d 1028, 1032-33 (Fed. Cir. 1989)); *Kridl v. McCormick*, 105 F.3d 1446, 1450 (Fed. Cir. 1997); *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985).

Here, “[t]here is no evidence in the record independently corroborating” that the alleged processing board depicted in “Prototype Video” functioned “to generate the SpO2 measurement values” as required by Claims 1 and 13. *Kolcraft*,

927 F.3d,1324-26. Such independent corroboration is required because an inventor may “be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another's patent.” *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996).

III. CLAIM CONSTRUCTION

Both parties agree that all claim terms should be given their ordinary meaning under the *Phillips* standard in this proceeding. Pet., 3; POR, 14 (“...the claims have their plain meaning...”). As such, all claim terms should be given their ordinary meaning under *Phillips*. See *SAS Inst., Inc. v. ComplementSoft, LLC*, 825 F.3d 1341, 1351-52 (Fed. Cir. 2016); *Qualcomm Inc. v. Intel Corp.*, 6 F.4th 1256, 1262-63 (Fed. Cir. 2021).

While it is true that Petitioner has the burden to set forth how the challenged claims are to be construed, Petitioner has satisfied that burden by identifying the plain and ordinary meaning under the *Phillips* standard for all claim terms.

Additionally, it is proper for a Petitioner to rely on claim interpretations advanced by Patent Owner for purposes of infringement to establish unpatentability in an IPR. *Apple Inc. v. CPC Patent Techs. Pty, Ltd.*, IPR2022-00601, Paper 11 at 12-14 (PTAB Sept. 28, 2022); *Western Digital Corp. v. SPEX Techs., Inc.*, IPR2018-00084, Paper 14 at 10-11 (PTAB April 25, 2018).

IV. MENDELSON’S SENSOR MODULE OUTPUTS “ONE OR MORE

**SIGNALS” UNDER THE PLAIN AND ORDINARY MEANING OF
THAT TERM**

As demonstrated in the Petition, Mendelson’s sensor module outputs “one or more signals” under the plain and ordinary meaning of that claim language and therefore provides elements [13a] and [1b]. Pet., 10-13, 44, 6-7. Masimo’s arguments regarding elements [13a] and [1b] are based on alleged functionality of Mendelson’s sensor module that is not actually described anywhere in Mendelson, but rather fabricated whole cloth by Masimo’s expert. POR, 20-24; EX2037, ¶¶125-129. Additionally, Masimo’s arguments rely on arbitrary line drawing as to what types of signal processing fall within and what types of signal processing fall outside the scope of the claimed “one or more signals.” There is no support within the ’507 patent itself nor anywhere else in the record to support Masimo’s arbitrary categorization as to which types of signal processing performed by the optical sensor fall within the scope of the claims under the “plain and ordinary meaning” of the term “one or more signals.”

Finally, Masimo’s arguments relying on Apple’s proposed claim interpretation in the related district court proceeding should be disregarded because Masimo has refused to adopt that construction in this or any other forum.

A. Mendelson Provides Elements [13a] and [1b] Because Its Sensor Module Outputs the Data that is Actually Acquired by the Sensor Module

1. Mendelson provides Elements [13a] and [1b] under the plain and ordinary meaning of “one or more signals” asserted by Masimo in this proceeding

As discussed above, the parties agree that all claim terms should be given their ordinary meaning under the *Phillips* standard in this proceeding. Pet., 3; POR, 14; APPLE-1087, 119:15-120:6 (“no construction is needed, so again it is the same plain and ordinary meaning”). Masimo asserts 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.” POR, 18 (emphasis original); EX2037, ¶124. Even if this pseudo construction were adopted, Mendelson provides this element because, when describing the functions of the Sensor Module, Mendelson expressly discloses that “[t]he *information acquired by the Sensor Module* is transmitted wirelessly via an RF link over a short range to a body-worn Receiver Module.” APPLE-1011, 2. In a similar example, Mendelson describes that “[s]ignals *acquired by the Sensor Module* are received by the embedded microcontroller [of the Receiver Module] which synchronously converts the corresponding PD output to R and IR PPG signals.” *Id.* Here, “PD” refers to the “photodetector (PD) in the sensor.” *Id.*, 1; APPLE-1083, ¶¶15-17. Therefore, Mendelson expressly describes that its Receiver Module

receives, from the Sensor Module, the “information *acquired by* the Sensor Module” which is the information output by the photodetector of the sensor. APPLE-1083, ¶¶9-17; APPLE-1003, ¶¶43, 55, 59; APPLE-1011, 2. These disclosures of Mendelson are consistent with the inventor’s description of how the claimed optical sensor operates. Specifically, he described that the prototype provided Elements [13a] and [1b] because “the sensor *generated one or more signals based on* the light it detected, and output those one or more signals” without distinguishing any form of processing from the described “generat[ing]” by the sensor. EX2038, ¶13; APPLE-1083, ¶18.

Therefore, under Masimo’s proposed plain and ordinary meaning for the term “one or more signals” of “data that is actually acquired with the optical sensor,” Mendelson provides elements [13a] and [1b] because Mendelson’s Sensor Module outputs “information acquired by the Sensor Module” representing the data output by the photodetector. APPLE-1083, ¶¶13-18; APPLE-1003, ¶¶43, 55, 59; APPLE-1011, 2.

2. Mendelson provides Elements [13a] and [1b] under Masimo’s district court interpretation of the plain and ordinary meaning of “one or more signals”

Mendelson also provides elements [13a] and [1b] under the plain and ordinary meaning as expressed by Masimo in the related district court proceeding. In the Joint Claim Construction Brief from the related district court proceeding,

Masimo asserts that “data in the form of an output signal indicative of an amount of attenuation of predetermined wavelengths (ranges of wavelengths) of light by body tissues” falls within the scope of the claimed “one or more signals.” EX2029, 34. Mendelson’s disclosure that the “[s]ignals acquired by the Sensor Module” representing the photodetector output used by the Receiver Module to determine “R and IR PPG signals” fall directly within this scope expressed by Masimo. APPLE-1011, 2; APPLE-1083, ¶¶19-21. Masimo further asserts that, signals that have undergone “preprocessing” by the sensor fall within the scope of the claims because, according to Masimo, “[p]reprocessed signals are ‘responsive to’ detected light.” EX2029, 38. Masimo also asserts that both digital and analog signals fall within the scope of the plain and ordinary meaning of “one or more signals.” *Id.* 38-39 (“The specification does not limit the signals to one type only.”); APPLE-1087, 23:20-7, 65:20-21 (“The ’507 patent doesn’t characterize or limit what that signal may be”), 66:4-12 (“the claims requires...one or more signals responsive to light without trying to limit it”).

As such, under the plain and ordinary meaning (the construction adopted by both parties here and asserted by Masimo in the district court proceeding), the signals output by Mendelson’s Sensor Module are responsive to light from a light source attenuated by tissue of the user at a measurement site because the signals are indicative of (i.e., a reaction to) the light detected by the photodetector of the

Sensor Module. APPLE-1011, 2; APPLE-1083, ¶¶12-21; APPLE-1084 (definition of “responsive”), APPLE-1086, APPLE-1085.

B. Dr. Duckworth’s Descriptions of the Processing Performed by Mendelson’s Sensor Module are Not Supported by Mendelson

In the POR, Masimo asserts that “Mendelson’s Sensor Module does not output data actually acquired with the Sensor Module” because, according to Masimo and its expert, “the Sensor Module computes and outputs average red and infrared PPG samples to the Receiver Module.” POR, 21. Ignoring for now whether such average red and infrared PPG values would fall within the scope of the claimed “one or more signals,” Masimo’s arguments regarding alleged averaging of sensed values by Mendelson’s Sensor Module should be disregarded because such functionality is described nowhere in Mendelson. APPLE-1083, ¶¶22-24. Rather, the descriptions of summing and averaging of PPG samples detected by Mendelson’s photodetector are fabricated whole cloth by Masimo’s expert, Dr. Duckworth. POR, 20-24; EX2037, ¶¶125-129²; APPLE-1083, ¶¶22, 25.

² Dr. Duckworth’s testimony should be given no weight due to improper coaching by Patent Owner’s counsel during the Dec. 20, 2024 deposition. Notably, Patent Owner’s counsel repeatedly entered speaking objections identifying key words from Petitioner’s questions prior to Dr. Duckworth’s response. *See e.g.*, APPLE-

As discussed in Section IV.A.1, *supra*, what Mendelson actually describes is that the Sensor Module outputs “[t]he information acquired by the Sensor Module” which corresponds to the “PD [photodetector] output.” APPLE-1011, 2. Yet, in his declaration, Masimo’s expert insists that “a POSITA would have understood” that Mendelson’s Sensor Module “only outputs *only* average red and infrared PPG samples to the Receiver Module,” despite no discussion of such averaging anywhere in Mendelson. EX2037, ¶126. Masimo’s expert then goes on to describe what he refers to as the functions of “the Sensor Module of Mendelson” when “in operation.” *Id.* However, despite using very specific numbers and functions and attributing these specific assertions to alleged express disclosures of Mendelson (e.g., “five consecutive samples of red light,” “five red PPG samples are summed,” “five infrared PPG samples,” “repeats every 12.5ms (i.e., at 80 Hz)”), Dr. Duckworth admitted under questioning that there is no actual discussion of summing or averaging of PPG samples in Mendelson, stating “[t]hat is not described in the Mendelson paper.” APPLE-1087, 104:3-18, *see also* 106:3-108:16, 110:9-112:5, 113:15-21; EX2037, ¶¶126-127. Furthermore, Dr. Kenny testified that such summing and averaging would not have been inherent in

1087, 49:11-13 (“Objection, vague as to ‘external’”), 25:5-6 (“Objection, vague as to ‘non-wireless’”), 27:1-2, 27:16-17, 38:15-16, 40:7-41:8.

Mendelson's system nor would such functionality have been the only obvious implementation to a POSITA. APPLE-1083, ¶¶25-31.

Dr. Duckworth's assertions regarding the preprocessing performed by Mendelson's Sensor Module appear to be based on his access to non-public information regarding Mendelson's system as a co-author of the Mendelson paper, rather than any actual disclosures of Mendelson. EX2037, ¶¶11, 108, 125. Indeed, Dr. Duckworth concedes that his understanding of how "the Mendelson device operated" is based on his personal knowledge "[a]s an author of the Mendelson paper." EX2037, ¶125; APPLE-1087, 108:17-109:5.

However, to be clear, Petitioner is not relying on the Mendelson *system* as prior art but rather the Mendelson paper as printed publication prior art. Indeed, unpatentability in an IPR proceeding can be established "*only* on the basis of prior art consisting of *patents or printed publications*." 35 U.S.C. § 311(b). It is long established that "[a] reference may be read *for all that it teaches*." *In re Mouttet*, 686 F.3d 1322, 1331 (Fed. Cir. 2012); *Merck & Co. v. Biocraft Labs., Inc.* 874 F.2d 804 (Fed. Cir. 1989). However, this does not extend to secret knowledge available only to the authors. Indeed, the reason prior art printed publications are not considered hearsay is because they are "offered as evidence of *what it describes* to an ordinary artisan, not for proving the truth of the matters addressed in the document." *Biomarin Pharm. Inc., v. Genzyme Therapeutic Products Ltd. P'ship*,

As such, Masimo's assertions regarding the alleged preprocessing conducted by Mendelson's Sensor Module should be disregarded because they are based on Dr. Duckworth's recollections regarding secret knowledge of the system and not what is actually described by the printed publication itself.

C. Masimo's Arguments Regarding the Amount and Types of Processing that Can Be Performed on the Claimed "one or more signals" Prior to Being Output by the Optical Sensor are Not Supported by the Record

As discussed above, Masimo asserts in the parallel district court proceeding that, under the plain and ordinary meaning of the term "one or more signals," signals that have undergone "preprocessing" by the sensor fall within the scope of the claims because, according to Masimo, "[p]reprocessed signals are 'responsive to' detected light." EX2029, 38. Masimo does not limit such "preprocessing" to specific types of processing in the Joint Claim Construction Brief. *Id.* In the POR, Masimo now draws an arbitrary line between preprocessing that involves amplifying the signal, filtering the signal, and converting the signal from analog to digital and preprocessing that involves averaging samples, insisting that the latter falls outside of the scope of the claimed "one or more signals." POR, 20-21, 23. However, Masimo identifies no portions of the '507 patent specification, or of any other evidence of record, to support such arbitrary line drawing. Rather, Masimo's

identification of which forms of preprocessing fall within the scope of “one or more signals” and which do not appear to be based on a desire to avoid the prior art while still attempting to read the claims on Apple’s accused products. The record does not support this arbitrary distinction made by Masimo. APPLE-1083, ¶¶32-35. Masimo’s arguments regarding elements [13a] and [1b] thus fail for this additional reason.

D. Masimo’s Arguments Regarding Apple’s District Court Construction for “one or more signals” Should Be Disregarded Because Masimo has not Adopted Such a Construction in Any Proceeding

The parties agree that all claim terms should be given their ordinary meaning under the *Phillips* standard in this proceeding. Pet., 3; POR, 14. As such, Masimo’s arguments based on Apple’s proposed district court construction of “one or more signals” (a construction that has not yet, and may never be, adopted by the district court) are irrelevant as they are based on a construction which neither party has adopted in the present proceeding. A patentee cannot rely on a narrow claim construction to avoid anticipation and simultaneously abandon that construction to argue infringement. *CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1299 (Fed. Cir. 2021). It is long established that a “patent may not, like a nose of wax, be twisted one way to avoid anticipation and another to find infringement.” *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir.

2001) (cleaned up) (citing *Sterner Lighting, Inc. v. Allied Elec. Supply, Inc.*, 431 F.2d 539, 544 (5th Cir. 1970); *White v. Dunbar*, 119 U.S. 47, 51, 30 L. Ed. 303, 7 S. Ct. 72 (1886)).

Federal Circuit precedent bars a patent owner from “argu[ing] one way in order to maintain...patentability and in a different way against accused infringers.” *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1360 (Fed. Cir. 2017) (citing *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995)). Masimo’s arguments based on a construction it has not adopted should not be entertained.

V. A POSITA WOULD HAVE BEEN MOTIVATED TO APPLY D’ANGELO TO MENDELSON TO ACHIEVE PREDICTABLE BENEFITS

As identified in the Petition, multiple reasons would have prompted a POSITA to apply D’Angelo to Mendelson. Pet., 40-43; APPLE-1003, ¶¶121-129. This includes applying D’Angelo to Mendelson to configure Mendelson’s Receiver Module to be capable of drawing power from the PDA/smartphone to “provide[] *crucial backup functionality* for collecting important physiological data” in situations in which “its battery is empty.” Pet. 42 (citing APPLE-1007, 1530; APPLE-1003, ¶124); APPLE-1083, ¶36.

None of Masimo’s alleged reasons would have dissuaded a POSITA from applying D’Angelo to Mendelson as proposed in the Petition. POR, 33-44;

APPLE-1083, ¶¶36-55. As provided below, deficiencies found in each of Masimo's proffered reasons reveals that a POSITA would not have dissuaded from applying D'Angelo to Mendelson. APPLE-1083, ¶¶36-55

A. Masimo's First Reason (POR, 34-37)

Masimo alleges that the proposed configuration "would defeat Mendelson's intended purpose" of "remote monitoring." POR, 34-37. However, as discussed in the Petition, and recognized by the Board in the Institution Decision, the proposed modification does not remove any of the remote monitoring capabilities from Mendelson's system but rather provides additional "backup functionality" for use in scenarios in which the Receiver Module's "battery is empty." Pet., 42; APPLE-1003, ¶124; Inst. Dec., 28-29. As such, applying this teaching of D'Angelo to Mendelson would not impede the resulting system's ability to provide remote monitoring for persons wearing the sensors. APPLE-1083, ¶¶38-39.

Masimo asserts that such backup functionality would be inapplicable to Mendelson's system because its intended use is for "combat" and other "harsh and hazardous" scenarios. POR, 34. However, Mendelson expressly describes other, non-combat, non-hazardous use cases, including "to monitor soldiers *during training exercises*." APPLE-1011, 4, 1; APPLE-1083, ¶40. Indeed, Masimo's expert confirmed that Mendelson's system was not confined to only monitoring injured persons in combat zones. APPLE-1087, 121:2-9. In fact, Mendelson

expressly contemplates additional uses for the type of wearable, portable vital sign monitoring systems that it describes, including for use with “patients during emergency transport as they are being moved from a remote location to a hospital, or between hospital wards.” APPLE-1011, 2. A POSITA would have recognized that medical personnel would be in close physical proximity to such patients during transport. APPLE-1083, ¶40. A POSITA would have readily recognized numerous other non-hazardous scenarios that would have benefited from use of Mendelson’s remote monitoring system. *Id.* Mendelson’s system is not limited to use in “dangerous scenario[s]” as Masimo asserts. POR, 35. Additionally, Mendelson also expressly describes scenarios in which “medical personnel” are in close physical proximity to casualties in combat zones to “distribute sensors.” APPLE-1011, 3; APPLE-1083, ¶40.

Masimo next asserts that a medic in close proximity to an injured person would have used “typical medical equipment” to monitor the person rather than providing backup power from the PDA. However, such a solution would have required the medic to carry this additional “typical medical equipment” in addition to the PDA/smartphone. APPLE-1083, ¶41. Masimo’s proposal also would have required using the same equipment on multiple different casualties, potentially spreading blood or other body fluids between patients. *Id.* Masimo also proposes a solution of “simply replac[ing] the Receiver Module’s AA batteries” but such a

solution would have required the medic to carry a potentially large amount of AA batteries on their person. APPLE-1083, ¶42. Furthermore, the Federal Circuit has made it clear that the fact that there are other possible solutions to a problem (such as the medic carrying additional “typical medical equipment” or carrying replacement batteries) does not affect the obviousness analysis as to one of those possible solutions. *See PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197-98 (Fed. Cir. 2014) (“Our precedent...does not require that the motivation be the best option, only that it be a suitable option from which the prior art did not teach away.”); *see also Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 738 (Fed. Cir. 2013); *Bayer Healthcare Pharms., Inc. v. Watson Pharms., Inc.*, 713 F.3d 1369, 1376 (Fed. Cir. 2013); *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (“Our case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention.”). This is especially true where, as here, the alternative solutions are not found in the prior art of record but rather spring forth only from the mind of Masimo’s expert. Nothing in the prior art criticizes D’Angelo’s solution to loss of battery power by a vital sign monitoring module and thus there is no “teaching away” from such a solution. *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1320 (Fed. Cir. 2015).

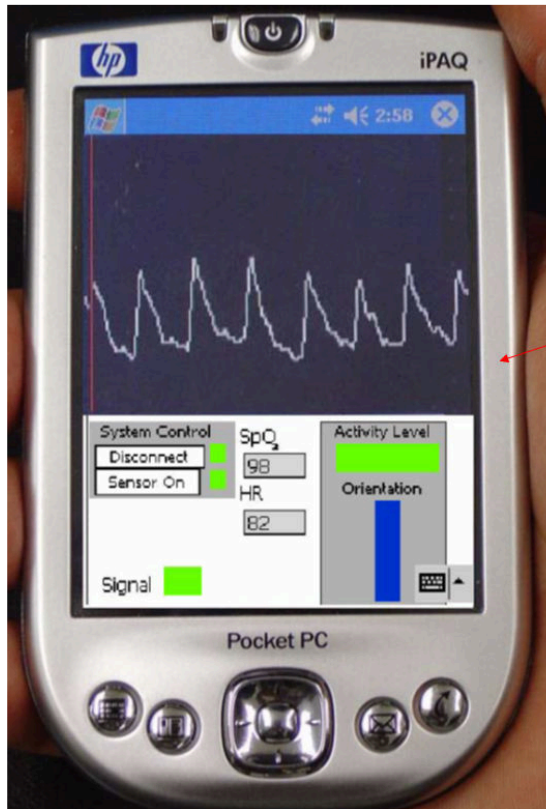
B. Masimo's Second Reason (POR, 37-40)

Masimo misrepresents the proposed modification because the Petition does not assert that the resulting Mendelson-D'Angelo system would be required to "read out 'data that's been stored.'" POR, 37; Pet., 42. Rather, Petitioner identified that the proposed modification would allow the resulting system "'to read out the' measured physiological data." Pet., 42. This includes the ability to read out "current measurements" from the Receiver Module. EX2044, 54:18-56:9 ("it could include realtime data that's flowing from the sensor"); APPLE-1083, ¶44. Furthermore, even if the proposed modification were limited to reading stored data (it is not), D'Angelo provides the solution to storing such data at the Receiver Module, a microSD card. APPLE-1007, 1-3 (describing storing vital sign data at the management device (equivalent to Mendelson's Receiver Module)); APPLE-1083, ¶45. Furthermore, Masimo's expert testified that Mendelson's Sensor module "temporarily store[s]" the sensor data. EX2037, ¶126.

C. Masimo's Third Reason (POR, 40)

Masimo alleges that the proposed modification would have "eliminated intended functionality" by limiting the PDA to monitoring only the Receiver Module to which it is connected. POR, 40. However, this assertion ignores that Mendelson's unmodified system only functions to monitor one person at a time. APPLE-1011, 3; APPLE-1087, 80:7-84:22; APPLE-1083, ¶¶46-47. As Masimo's

expert confirmed, Mendelson’s user interface only “show[ed] information for one individual” at a time. APPLE-1087, 80:7-81:10, 84:13-22.



All displayed parameters
and controls for a single
person

APPLE-1011, 3.

Indeed, Mendelson expressly describes that the user of the PDA must select “*a specific wearable unit*” and “connect[] to *the* remote device” to view “the subject’s vital signs.” APPLE-1011, 3; APPLE-1087, 84:5-12. As such, the proposed modification would not have impeded or “eliminated” any functionality of Mendelson’s system. APPLE-1083, ¶¶46-47.

D. Masimo’s Fourth Reason (POR, 41-42)

The alternative solution proposed as Masimo’s fourth argument against the

Mendelson-D'Angelo combination would have required ensuring that every Receiver Module had full batteries before every use event, including unexpected emergencies. APPLE-1083, ¶¶48-51; POR, 41-42. Such a solution would have resulted in significant waste as the batteries of all Receiver Modules would need to be replaced prior to being fully depleted to ensure that they would not become depleted during training, combat, or another use scenario. APPLE-1083, ¶49. Furthermore, even if the need for supplying backup power to the Receiver Modules from the PDA/smartphone were rare, it would still be extremely helpful in applicable scenarios. APPLE-1083, ¶¶50-51; APPLE-1003, ¶124 (“...facilitate potentially lifesaving interventions”). Furthermore, Masimo’s proposed alternative solution of “replacing the dead AA batteries with new ones” is simply a possible alternate solution and thus does not affect the obviousness analysis as to D’Angelo’s proposed solution. *See PAR Parm*, 773 F.3d, 1197-98; *Galderma Labs.*, 737 F.3d, 738; *In re Fulton*, 391 F.3d, 1201 (“Our case law does not require that a particular combination must be the preferred”); *SightSound*, 809 F.3d, 1320.

E. Masimo’s Fifth Reason (POR, 42)

Regarding Masimo’s fifth argument (POR, 42), Masimo’s expert testified that the Receiver Module could last for five days on the power from two AA batteries. EX2037, ¶152. As such, the amount of power drawn from the PDA/smartphone in the proposed combination in the, at most, one or two minutes

of time it would have taken to quickly assess the wearer's vital signs would have been negligible when compared to the overall battery capacity of the PDA/smartphone. APPLE-1083, ¶¶52-53; APPLE-1094, 8 (describing the "long battery life" of typical mobile phones during the relevant time frame); APPLE-1097, 6 ("Most phones have a substantially larger battery..."). Additionally, the proposed modification would not have *forced* the medic to provide backup power to a Receiver Module with a depleted battery in every scenario. APPLE-1083, ¶53. Rather, the proposed modification would have provided the user of the PDA with the *option* to provide backup power to a Receiver Module with a depleted battery; an option which the user could opt not to take depending on the current charge level of the PDA and the given scenario. *Id.* By contrast, Masimo proposes never giving the user the option to utilize the known prior art solution described by D'Angelo. Additionally, the concern raised by Masimo is, at most, a tradeoff and "the presence of tradeoffs does not constitute a teaching away." *L-3 Communs. Corp. v. Sony Corp.*, 2014 U.S. Dist. LEXIS 127643, *13 (D. Del. 2014) (citing *Bayer*, 713 F.3d, 1376); *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016).

F. Masimo's Sixth Reason (POR, 42-43)

Masimo alleges that the proposed modification would make the Receiver Module "larger, heavier, and more expensive to produce." POR, 42-43. However,

Mendelson’s Receiver Module already includes a serial port for connecting to the PDA and even if Masimo’s assertions were true, these are merely tradeoffs that a POSITA would have understood and would have weighed in contrast to the known benefits of the proposed combination. APPLE-1083, ¶¶43, 54. “[T]he presence of tradeoffs does not constitute a teaching away.” *L-3 Communs*, 2014 U.S. Dist. LEXIS 127643, *13; *Allied Erecting*, 825 F.3d, 1381. Furthermore, D’Angelo demonstrates that such functionality can be included in a receiver module/management device having a compact and lightweight form factor:



APPLE-1007, 3; APPLE-1083, ¶54.

G. Masimo's Seventh Reason (POR, 43-44)

Masimo's nitpicking of Dr. Kenny's specific word usage *during his deposition* does not negate the predictable benefits of the proposed combination identified in the Petition and Dr. Kenny's first declaration. Pet., 40-43; APPLE-1003, ¶¶121-129. Indeed, during his deposition, Dr. Kenny identified that a POSITA would have understood that "[i]t could be useful to read out previously captured and stored data as well as whatever the current measurements are" in at least some use scenarios. EX2044, 55:5-11.

VI. A POSITA WOULD HAVE BEEN MOTIVATED TO APPLY GOLDSMITH TO THE MENDELSON-D'ANGELO COMBINATION TO ACHIEVE PREDICTABLE BENEFITS

Masimo's arguments regarding the predictable Mendelson-D'Angelo-Goldsmith combination simply rehash arguments made with respect to the Mendelson-D'Angelo combination. POR, 45-48. Regarding Masimo's first two arguments addressing the Mendelson-D'Angelo-Goldsmith combination (applying backup power from the wristwatch/PDA would require physical proximity of the medic and person wearing the sensor; only one person is monitored at a time when providing backup power), these arguments fail for the same reasons discussed in Section V, *supra*. APPLE-1083, ¶¶56-61. As discussed above, Mendelson's system is not restricted to use in dangerous scenarios and Mendelson expressly contemplates non-hazardous uses. APPLE-1011, 4, 1-2. Furthermore,

Mendelson’s unmodified system functions to connect to a single Receiver Module and display information for only one person at any given time. APPLE-1011, 3; APPLE-1087, 80:7-84:22; APPLE-1083, ¶¶46-47, 57.

Regarding Masimo’s third reason (the alleged “small battery capacity” of a PDA having a wristwatch formfactor, such as that described in Goldsmith), the evidence of record refutes Masimo’s assertions. POR, 47-48; APPLE-1083, ¶¶59-60; APPLE-1091, ¶¶[0046]-[0058] (describing a wristwatch having a “pulse oximetry board” for calculating “blood oxygenation” powered by the watch’s battery). For example, Goldsmith expressly contemplates embodiments in which its “controller device” provides power to or is otherwise in wired connection to a “sensing device” such as a blood oxygen sensor. APPLE-1009, [0052] (describing “sensors included in” and therefore drawing power from “the device”), [0018], [0050], [0085]-[0090], [0037]-[0038]; Pet., 61-64. Goldsmith also expressly contemplates powering the various devices in its system (e.g., the “controller device” having a wristwatch formfactor, the sensors, and other components) using a single battery. *Id.*, [0041], [0053]. Goldsmith further describes that the wristwatch/PDA of the resulting system can include “a removable battery ***and an internal backup battery***” which would alleviate the power concerns raised by Masimo. *Id.*; APPLE-1083, ¶60. Furthermore, the amount of power drawn from the wristwatch/PDA in the brief amount of time needed to assess the wearer’s vital

signs would have been negligible. APPLE-1083, ¶59. The proposed modification would not have *forced* the medic to provide backup power to a Receiver Module with a depleted battery in every scenario but simply provided the *option* to do so. APPLE-1083, ¶61. Finally, all three arguments raised by Masimo with respect to Grounds 1I and 2I are, at most, tradeoffs and “the presence of tradeoffs does not constitute a teaching away.” *L-3 Communs*, 2014 U.S. Dist. LEXIS 127643, *13; *Allied Erecting*, 825 F.3d, 1381.

Respectfully submitted,

Date: January 13, 2025

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CERTIFICATION UNDER 37 C.F.R. § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioner Reply to Patent Owner Response totals 5,598 words, which is less than the 5,600 allowed under 37 CFR § 42.24(c)(1).

Date: January 13, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on January 13, 2025, a complete and entire copy of this Petitioner's Reply to Patent Owner's Response was provided by email to Patent Owner by serving the email correspondence addresses of record as follows:

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