

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

Case IPR2024-00241
U.S. Patent 10,687,743

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

TABLE OF CONTENTS

I.	CLAIM CONSTRUCTION	1
II.	IWAMIYA-SARANTOS RENDERS OBVIOUS A “SURFACE COMPRISING A DARK-COLORED COATING” (ELEMENTS [1e] and [14e]).....	3
III.	IWAMIYA-SARANTOS (WITH OR WITHOUT UTTER) RENDERS OBVIOUS AN “OPENING DEFINED IN THE DARK-COLORED COATING” THAT ALLOWS LIGHT TO “PASS THROUGH THE SURFACE” (ELEMENTS [1E] AND [14E]).....	7
IV.	IWAMIYA-SARANTOS (WITH OR WITHOUT UTTER AND HAN) RENDERS OBVIOUS DETERMINING A PHYSICAL PARAMETER THAT IS OXYGEN SATURATION (CLAIMS 11, 18, AND 24).....	11
A.	Sarantos discloses and renders obvious determining oxygen saturation	11
B.	A POSITA would have known how to make predictable adaptations to Iwamiya’s device that would allow the device in the Iwamiya- Sarantos combination to measure oxygen saturation.....	12
C.	The POR mischaracterizes Iwamiya in asserting that it teaches away from measuring blood oxygen saturation using red and infrared light	13
D.	A POSITA would have been motivated to apply Sarantos’s suggestions to Iwamiya	14
E.	A POSITA would have reasonably expected success in modifying Iwamiya to measure oxygen saturation at the wrist.....	15
V.	IWAMIYA-SARANTOS RENDERS OBVIOUS AN OPENING DEFINED IN THE DARK-COLORED COATING WITH A DIFFERENT LENGTH AND WIDTH AS RECITED IN CLAIMS 13 AND 20.....	25
VI.	IWAMIYA-SARANTOS (WITH OR WITHOUT UTTER) RENDERS OBVIOUS CLAIMS 5 AND 21 AND ELEMENT [22D].	26

VII. IWAMIYA AND SARANTOS DISCLOSE A LENGTH AND A WIDTH OF THE OUTPUT LIGHT PATTERN (CLAIM 9).....	29
VIII. MASIMO CONCEDES THAT IWAMIYA DISCLOSES AN OVAL-SHAPED PATTERN (CLAIM 10).....	32
IX. DR. MADISETTI’S TESTIMONY IS ENTITLED TO LITTLE OR NO WEIGHT.....	33

LIST OF EXHIBITS

APPLE-1001	U.S. Patent No. 10,687,743
APPLE-1002	U.S. Patent No. 10,687,743 File History
APPLE-1003	Declaration of Dr. Brian Anthony
APPLE-1004	U.S. Pat. No. 8,670,819 (“Iwamiya”)
APPLE-1005	U.S. Pat. No. 9,392,946 (“Sarantos”)
APPLE-1006	U.S. Pat. No. 8,446,275 (“Utter”)
APPLE-1007	U.S. Pat. No. 6,483,976 (“Shie”)
APPLE-1008	U.S. Pat. Pub. No. 2016/0058312 (“Han”)
APPLE-1009	U.S. Pat. No. 7,349,726 (“Casciani”)
APPLE-1010	RESERVED
APPLE-1011	RESERVED
APPLE-1012	The American Heritage Dictionary of the English Language, 5th Ed., Houghton Mifflin Company, 2000, pg. 411-412
APPLE-1013	Design of Pulse Oximeters, J.G. Webster; Institution of Physics Publishing, 1997 (“Webster”)
APPLE-1014	Pang et al., A Neo-Reflective Wrist Pulse Oximeter, IEEE Access, Volume 2 (January 12, 2015)
APPLE-1015 – APPLE-1016 RESERVED	
APPLE-1017	U.S. Pat. No. 10,470,695 (the “695 patent”)
APPLE-1018	<i>Apple Inc. v. Masimo Corporation</i> ,, IPR2020-01722, Paper 29 (Final Written Decision for U.S. Patent 10,470,695) (PTAB May 5, 2022) (the “695 FWD”)
APPLE-1019	U.S. Patent No. 5,663,264 to Kawai
APPLE-1020	U.S. Patent No. 5,449,731 to Suzuki

- APPLE-1021 U.S. Patent No. 4,149,776 to Everett
- APPLE-1022 U.S. Patent No. 5,171,085 to Jaksich
- APPLE-1023 Definition of “resin” from Chambers Dictionary of Science and Technology, Chambers Harrap Publishers Ltd. (2007)
- APPLE-1024 Definition of “resin” from Concise Encyclopedia of Science & Technology, Sixth Edition, McGraw Hill (2009)
- APPLE-1025 Definition of “resin” from A Dictionary of Chemistry, Sixth Edition, Oxford University Press (2008)
- APPLE-1026 Definition of “resin” from Longman Dictionary of American English, Fifth Edition, Pearson Education Ltd. (2014)
- APPLE-1027 Definition of “resin” from Dictionary of Science and Technology, Second Edition, A&C Black Publishers Ltd. (2007)
- APPLE-1028 U.S. Patent Pub. No. 2006/0253010 (“Brady”)
- APPLE-1029 RESERVED
- APPLE-1030 Institution Decision, *Apple Inc. v. Masimo Corporation*, IPR2022-01291 (Institution Decision for U.S. Patent 10,687,745), Paper 15 (PTAB Feb. 1, 2023).
- APPLE-1031 *Masimo Corporation, et al. v. Apple Inc.*, Redacted Complaint, ITC Inv. No. 337-TA-1276
- APPLE-1032 U.S. Patent No. 6,580,086 to Schulz
- APPLE-1033 U.S. Patent No. 7,468,036 to Rulkov et al.
- APPLE-1034 Li et al., A Wireless Reflectance Pulse Oximeter With Digital Baseline Control for Unfiltered Photoplethysmograms, IEEE Transactions on Biomedical Circuits and Systems, Vol. 6, No. 3 (June 2012)
- APPLE-1035 Cai et al., Implementation of a Wireless Pulse Oximeter Based on Wrist Band Sensor, 3rd International Conference on Biomedical Engineering and Informatics, 2010

- APPLE-1036 Maattala et al., Optimum Place for Measuring Pulse Oximeter Signal in Wireless Sensor-Belt or Wrist-Band, 2007 International Conference on Convergence Information Technology
- APPLE-1037 U.S. Patent No. 5,164,858 to Aguilera
- APPLE-1038 U.S. Patent No. 5,830,137 to Scharf
- APPLE-1039 U.S. Patent Pub. No. 2005/0267346 (“Faber”)
- APPLE-1040 ITC Inv. No. 337-TA-1276 Exhibit RX-0508 (Jianchu Yao and Steve Warren, Stimulating Student Learning with a Novel “In-House” Pulse Oximeter Design (2005))
- APPLE-1041 U.S. Patent Pub. No. 2014/0323829 (“LeBoeuf”)
- APPLE-1042 Fontaine et al., Reflectance-Based Pulse Oximeter for the Chest and Wrist, Worcester Polytechnic Institute (April 2013) *available at* <https://digital.wpi.edu/show/6969z2326>
- APPLE-1043 RESERVED
- APPLE-1044 International Publication No. WO 2011/051888 (“Ackermans”)
- APPLE-1045 International Publication No. WO 2012/140559 (“Shmueli”)
- APPLE-1046 U.S. Patent No. 7,650,176 to Sarussi
- APPLE-1047 U.S. Patent Pub. No. 2002/0095092 (“Kondo”)
- APPLE-1048 U.S. Patent Pub. No. 2015/0355604 (“Fraser”)
- APPLE-1049 U.S. Patent No. 6,398,727 to Bui
- APPLE-1050-1059 RESERVED
- APPLE-1060 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_dlistprofile0630.2023.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 (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 RESERVED
- APPLE-1071 U.S. Patent No. 10,687,745 to Al-Ali (“the ’745 patent”)
- APPLE-1072 Institution Decision, *Apple Inc. v. Masimo Corp.*, IPR2022-01291 Pap. 15 (PTAB Feb. 1, 2023)
- APPLE-1073 U.S. Patent No. 10,470,695 to Al-Ali (“the ’695 patent”)

- APPLE-1074 Final Written Decision, *Apple Inc. v. Masimo Corp.*, IPR2020-01722 Pap. 28 (PTAB May 5, 2022)
- 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 \(uscourts.gov\)](#)
- APPLE-1078 *Sotera* Stipulation by Apple Inc.
- APPLE-1079 CONFIDENTIAL - Supplemental Declaration of Dr. Brian Anthony
- APPLE-1080 CONFIDENTIAL - Transcript of the Deposition of Dr. R. James Duckworth (August 9, 2023)
- APPLE-1081 U.S. Patent Application Pub. No. 2010/0324387 to Moon et al. (“Moon”)
- APPLE-1082 CONFIDENTIAL - ITC Inv. No. 337-TA-1276 Hearing Transcript of Dr. Saahil Mehra
- APPLE-1083 CONFIDENTIAL – Transcript of Testimony of Dr. Vivek Venugopal from June 6-10, 2022 Hearing Transcript, *Masimo Corp. et al. v. Apple Inc.*, ITC Inv. No 337-TA-1276
- APPLE-1084 CONFIDENTIAL - ITC Inv. No. 337-TA-1276 Hearing Transcript of Dr. Ueyn Block

- APPLE-1085 ITC Inv. No. 337-TA-1276 Exhibit RX-0498 (Takatani et al., Optical Oximetry Sensors for Whole Blood and Tissue, IEEE Engineering in Medicine and Biology (June/July 1994))
- APPLE-1086 CONFIDENTIAL - Transcript of the Deposition of Dr. Madisetti (February 4, 2025)
- APPLE-1087 CONFIDENTIAL - Transcript of the second session of the Deposition of Dr. Vijay K. Madisetti (February 7, 2025)
- APPLE-1088 International Publication No. WO 2001/17421 to Lindberg et al.
- APPLE-1089 U.S. Patent No. 6,801,799 to Mendelson
- APPLE-1090 Mendelson et al., A Wearable Reflectance Pulse Oximeter for Remote Physiological Monitoring, Proceedings of the 28th IEEE EMBS Annual International Conference (Sept. 3, 2006)
- APPLE-1091 U.S. Patent Pub. No. 2013/0267854 (“Johnson”)
- APPLE-1092 U.S. Patent Pub. No. 2005/0116820 (“Goldreich”)
- APPLE-1093 Excerpt of Collins Dictionary, HarperCollins Publishers (2010)
- APPLE-1094 Excerpt of Merriam-Webster’s Collegiate Dictionary, Eleventh Edition, Merriam-Webster, Incorporated (2014)
- APPLE-1095 Excerpts from The American Heritage College Dictionary (1993)

Masimo's POR re-hashes arguments that were previously presented unsuccessfully in its POPR, and that were earlier rejected by both the ITC and the PTAB with respect to the highly similar claim language of related Patent No. 10,687,745; for example, regarding Iwamiya's circular diode arrangement, the applicability of Sarantos's dark-colored coating to Iwamiya's light shielding frame, and reasonable expectation of success in wrist-based blood oxygenation measurement. As discussed below, the challenged claims are unpatentable.

I. CLAIM CONSTRUCTION

Apple asserted that the claims in this proceeding should be given their ordinary meaning under *Phillips* and thus has satisfied its burden under 37 C.F.R. § 42.104(b)(3). Pet., 7. For the term "opening," Apple properly applied the prior art to the challenged claims consistent with the positions taken by Masimo for infringement purposes. Pet., 30, 47; EX2037, 307-308 (reproducing an image from Dr. Madisetti's opening report, in which he labeled transparent material an "Opening in Dark-Colored Coating," and opined that an "opening" is an area through which light is configured to pass, which could be empty space or transparent material).

The Board has repeatedly emphasized that "37 C.F.R. §104(b)(3) does not require Petitioner to express its subjective agreement regarding correctness of its proffered claim constructions or to take ownership of those constructions."

Western Digital Corp. v. SPEX Techs., Inc., IPR2018-00084, Paper 14 at 10-11 (PTAB April 25, 2018). Rather, ***an explicit statement relying on Patent Owner’s litigation constructions suffices.*** *Id.*; *Apple Inc. v. CPC Patent Techs. Pty, Ltd.*, IPR2022-00601, Paper 11 at 12-14 (PTAB Sept. 28, 2022). Indeed, a Petitioner can “rely[] on claim constructions that it believes are incorrect.” *Philip Morris Products, S.A. v. Rai Strategic Holdings, Inc.*, IPR20204 00921, Paper 13 at 42-44 (Aug. 5, 2021). Thus, Masimo cannot reasonably complain of the Petition’s express application of Masimo’s litigation interpretations for purposes of IPR. 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).

Furthermore, construction positions for “opening” that Masimo attributes to Apple are based on an initial non-infringement report submitted in the related litigation, rather than a full record from that proceeding. Masimo’s arguments are based on its characterization of a construction that has not yet, and may never be, adopted in the District Court, and that neither party has adopted in the present proceeding.

Moreover, Apple’s application of Masimo’s District Court interpretation of “opening” in this proceeding is consistent with IPR proceedings involving related Patent No. 10,687,745, which found similar claim language unpatentable based on

similar grounds. IPR2022-01291, Paper 75, 26, 34; IPR2022-01465, Paper 72, 29, 37-38.

Finally, Masimo’s assertion that “Apple never raised” the argument that Iwamiya’s optical filter 17 satisfies the claim term “opening” is at odds with the Petition’s express discussion that, when Sarantos’s teachings are applied to Iwamiya, the “light travel[ing] through window regions” in the dark-colored coating “when applied to Iwamiya’s light shielding frame 18” sufficiently “satisfies the definition of ‘opening’ that Masimo has advanced for purposes of infringement.” Pet., 30, 10, 12, 13, 47.

II. IWAMIYA-SARANTOS RENDERS OBVIOUS A “SURFACE COMPRISING A DARK-COLORED COATING” (ELEMENTS [1e] and [14e])

Masimo offers a baseless argument that Apple’s implementation of Iwamiya’s light shielding frame 18 requires “ignor[ing] the teachings of Iwamiya to instead look to another reference”.¹ POR, 12. As noted in the Petition,

¹ Masimo’s substantially similar argument with respect to element [1.4] of the related ’745 patent was rejected by both the PTAB and the ITC, as it was in the Institution Decision in the present proceeding. IPR2022-01291, Paper 81, 37-43; EX2093, 226-228; Paper 12, 24-29.

“Iwamiya is silent as to the material or coating used to implement the light shielding frame 18” and therefore a POSITA would have looked to Sarantos to identify a suitable material (Sarantos’s dark-colored mask or in-mold label) to achieve the light shielding function described by both Iwamiya and Sarantos. APPLE-1003, ¶51; Pet., 15. Apple has never disputed that “Iwamiya’s light shielding frame 18 is itself made of a material that shields light” as Masimo asserts. POR, 14; APPLE-1004, 8:38-42. What Iwamiya lacks is express disclosure of materials that would be suitable to achieve the desired “light shielding” function of frame 18. Pet., 12-17; APPLE-1080, 88:12-94:8.

Iwamiya left the selection of a suitable material for frame 18 to a POSITA, and the Petition specifically explained that “[a] POSITA would have recognized that the black or dark-colored mask or in-mold label would have enhanced the light blocking function of Iwamiya’s light shielding frame 18.” Pet., 15.

Sarantos and other references demonstrate the common practice of implementing light shields beneficially “formed from or coated with a light absorbing material” to “further mitigate[] the effects of ambient light, as well as stray (i.e., ‘secondary’) reflected light” by reducing unwanted light from reaching the photodetector and reducing optical interference. APPLE-1032, 9:58-10:23;

Pet. 14; APPLE-1005, 17:1-25; APPLE-1013, 96-97²; APPLE-1079, ¶¶6-9; APPLE-1003, ¶¶46-53, 38, 69. This “minimize[es] the amount of light that reaches the photodiodes 9 from LEDs 6 without first being reflected off the user’s skin, thus increasing accuracy of the sensor.” *Id.*

Furthermore, it is long-established that the motivation-to-combine prior art references need not come from the references themselves but rather “can come from the knowledge of [a POSITA].” *Acoustic Tech., Inc. v. Itron Networked Sols., Inc.*, 949 F.3d 1366, 1375 (Fed. Cir., 2020).

² Numbers refer to page numbers of the PDF document.

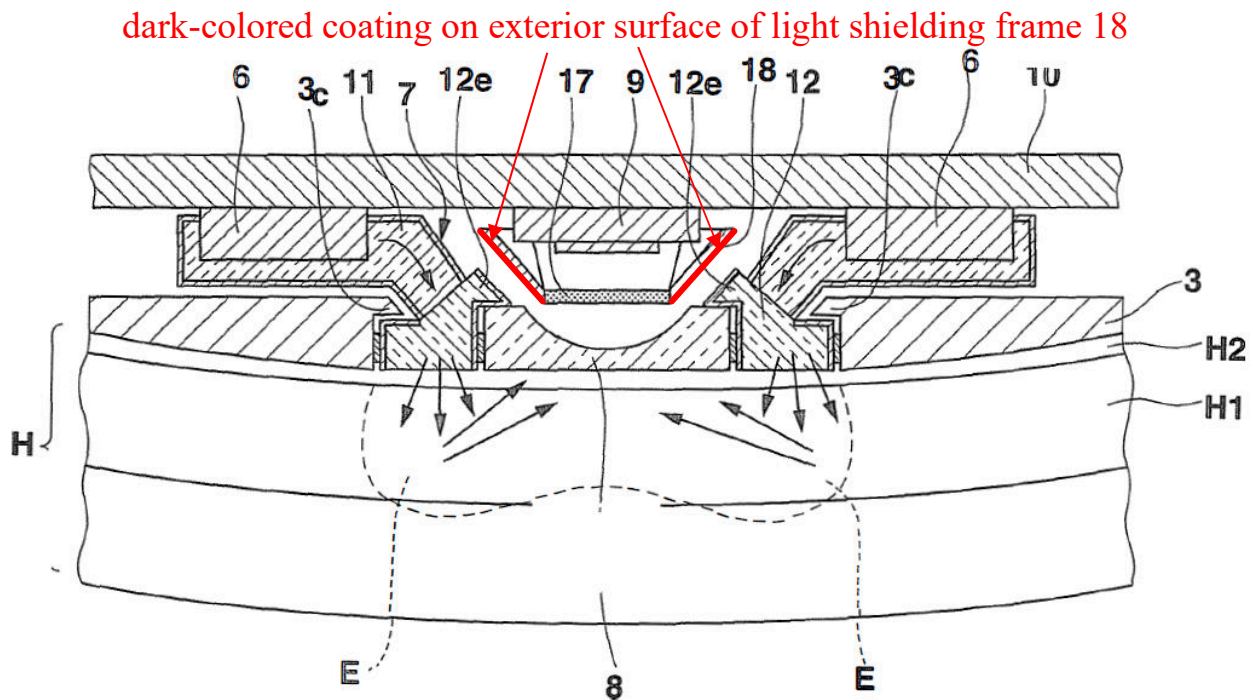


FIG.4

A POSITA also would have found the selection of a light-absorbing material for frame 18 to merely involve a routine design choice, especially given that light-shielding materials must either (1) absorb or (2) reflect light, and the use of a “dark” coating would be obvious to absorb the broadest spectrum of light. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007); APPLE-1079, ¶¶6-13; APPLE-1080, 94:14-95:10.

Masimo incorrectly suggests that a POSITA would be led by Iwamiya to select a reflective rather than absorptive material. POR, 12-18.

First, Sarantos’s dark-colored coating that absorbs light would be preferable

to a reflective material for shielding light with Iwamiya's frame 18 since the absorptive material would *reduce* reflections and light scatter in the empty space surrounding frame 18, and reflections were known to increase noise and reduce sensor accuracy. APPLE-1079, ¶¶6-9; APPLE-1003, ¶¶46-53.

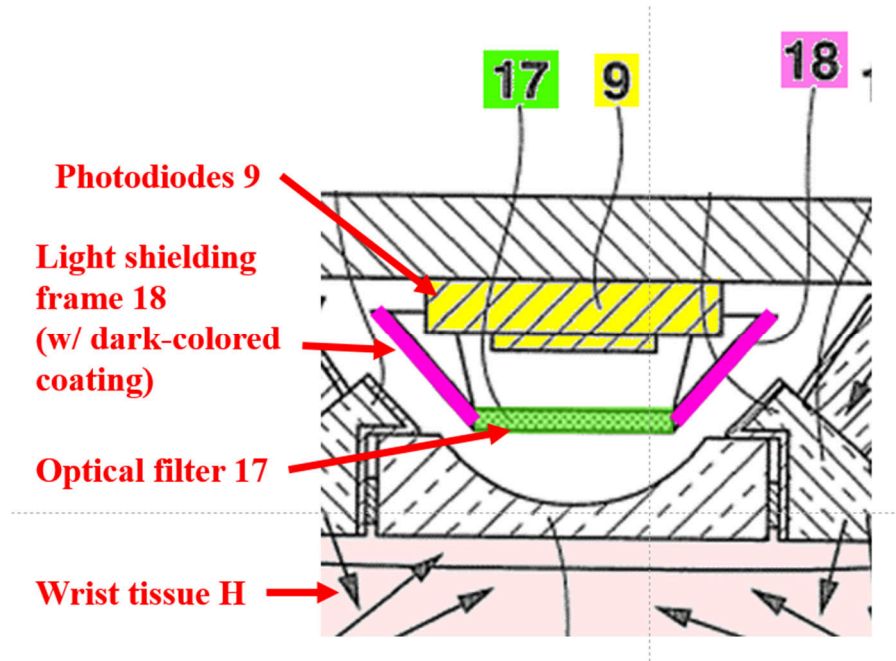
Second, Masimo's argument that a POSITA would select a reflective material for frame 18 merely because Iwamiya's components include reflective layers does not follow. POR, 14-17. These other components serve different functions or, in the case of holder portion 43, are not even used in the same embodiments. APPLE-1004, 6:67-7:3, 7:45-49, 18:61-65, FIGS. 4, 13; APPLE-1080, 88:1-94:8; APPLE-1079, ¶¶10-12.

Even if design tradeoffs exist between the selection of a dark-colored coating and a reflective material, these tradeoffs would only render each option obvious—not preclude obviousness of the first option as Masimo would have it. *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016); APPLE-1079, ¶13.

III. IWAMIYA-SARANTOS (WITH OR WITHOUT UTTER) RENDERS OBVIOUS AN “OPENING DEFINED IN THE DARK-COLORED COATING” THAT ALLOWS LIGHT TO “PASS THROUGH THE SURFACE” (ELEMENTS [1E] AND [14E])

Iwamiya's light shielding frame 18 is positioned between the photo

diodes/light receiving units 9 and the tissue and “surround[s] the light receiving unit 9.” APPLE-1004, 8:38-47; APPLE-1079, ¶14.



APPLE-1004, Detail of FIG. 4 (annotated)

FIG. 4 (above) is a “cross-sectional view.” APPLE-1004, 4:13-15. As shown in FIG. 2 (below), the light shielding frame 18 “surround[s]” the light receiving units 9 and has an opening that allows light to pass through the surface:

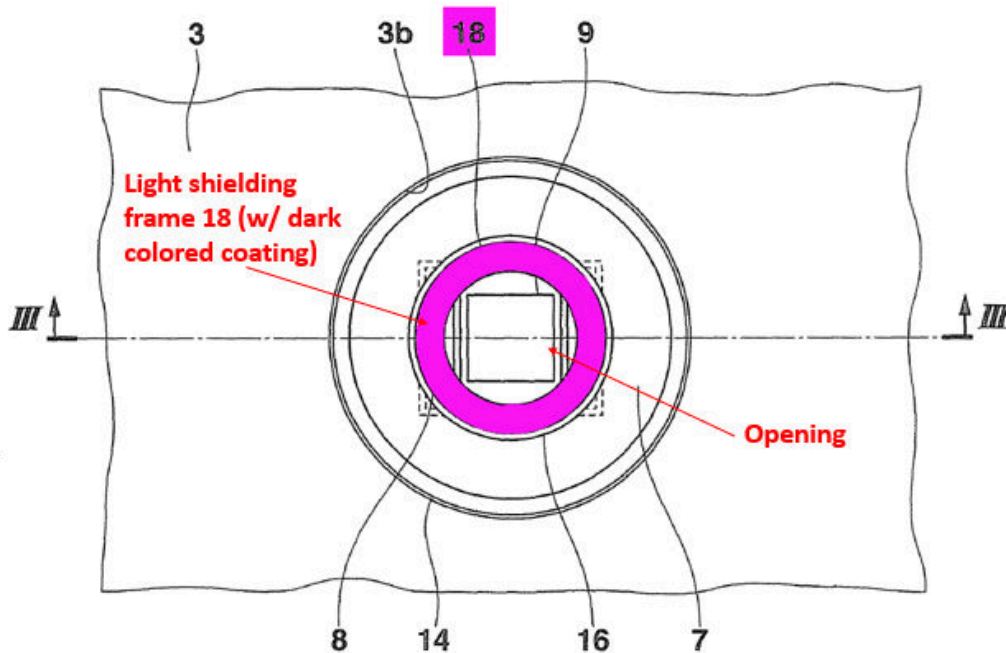
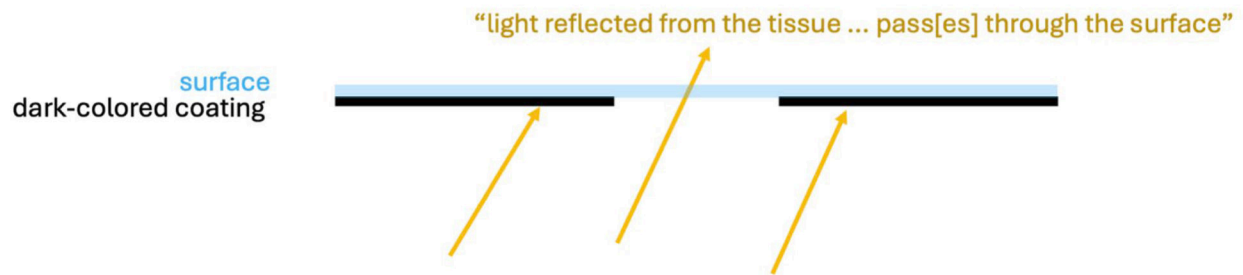


FIG.2

APPLE-1004, FIG. 2 (annotated); APPLE-1079, ¶¶16-17.

Because Sarantos's dark-colored coating is applied to Iwamiya's light shielding frame 18, there is an opening defined in the dark-colored coating that allows light to pass through the surface. APPLE-1003, ¶¶67-72; APPLE-1079, ¶¶15-17.

Masimo's arguments, as demonstrated by their drawing shown below, imply that the claimed opening is *required* to include a transparent or translucent material:



POR, 25; APPLE-1079, ¶18.

However, Masimo's POR drawing has no support from the '743 patent. APPLE-1079, ¶19. The plain language of claims 1 and 14 include no requirement that the opening include material. Further, there is not a single embodiment within the '743 patent that describes the opening as including material. APPLE-1079, ¶20. Rather, the ' 743 Patent describes "a planar surface having an opening 402 through which the emitted light may pass." APPLE-1001, 8:32-53, 9:31-10:10; APPLE-1079, ¶20.

However, even if the claims were improperly interpreted to *require* material within the opening (as Masimo asserts), the combination of Iwamiya's light shielding frame 18 and optical filter 17 provides such a surface. APPLE-1079, ¶21.

IV. IWAMIYA-SARANTOS (WITH OR WITHOUT UTTER AND HAN) RENDERS OBVIOUS DETERMINING A PHYSICAL PARAMETER THAT IS OXYGEN SATURATION (CLAIMS 11, 18, AND 24)

A. Sarantos discloses and renders obvious determining oxygen saturation

The Petition does not rely on Sarantos for specific structures, but rather for its reference to well-known techniques for measuring oxygen saturation (i.e., using red and infrared wavelengths). Pet., 43-46 (citing APPLE-1005, 13:34-14:22, 18:48-51); *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc); *accord In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012).

Sarantos contemplates embodiments where its device would measure blood oxygenation levels using red and infrared light, and describes structural adaptations that can be made to accommodate multiple LEDs of different wavelengths.

APPLE-1005, 13:34-36, 13:44-14:22; APPLE-1079, ¶25; APPLE-1003, ¶¶89-93.

Masimo's narrow focus on Saranto's use of the word "or" ignores both Sarantos's disclosures and the POSITA's knowledge regarding common wavelengths of light for determining blood oxygen saturation. Pet., 43-46; APPLE-1079, ¶¶26-27; APPLE-1003, ¶¶89-93; APPLE-1013, 94-96; APPLE-1028, ¶[0052]-[0054]; APPLE-1088, 49-50.

Sarantos measures "blood oxygenation levels" by implementing each individual LED of the resulting device to "predominantly emit[] light in the red or

infrared spectrum” such that multiple LEDs would collectively emit red and infrared light. APPLE-1005, 13:44-14:5, 18:44-51; APPLE-1079, ¶¶26-27; APPLE-1003, ¶¶89-93. Indeed, Sarantos expressly describes embodiments having “two light-emitting devices that predominantly emit light of different wavelengths.” APPLE-1005, 3:60-62.

Furthermore, the ’743 patent’s *background* section states that it was known in the prior art to “derive oxygen saturation” by transmitting light “of *one or more* wavelengths into a tissue site.” APPLE-1001, 1:65-2:3.

Furthermore, Sarantos’s use of “green/yellow” light in some embodiments does not constitute a teaching away. *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017); *In re Mouttet*, 686 F.3d 1322, 1331 (Fed. Cir. 2012). A POSITA reviewing Sarantos’s alternative embodiments for measuring blood oxygen levels would have understood that the ratios/dimensions of Sarantos’s HAR photodetectors could and would be suitably optimized for red/infrared light detection. APPLE-1079, ¶25; APPLE-1003, ¶91.

B. A POSITA would have known how to make predictable adaptations to Iwamiya’s device that would allow the device in the Iwamiya-Sarantos combination to measure oxygen saturation

The evidence confirms that a POSITA would have known how to adapt Iwamiya’s device to measure blood oxygen levels using red/infrared light as taught by Sarantos. *Facebook, Inc. v. Windy City Innovations, LLC*, 973 F.3d 1321, 1343

(Fed. Cir. 2020) (quoting *KSR*, 550 U.S. at 421); APPLE-1003, ¶¶89-93; Pet., 43-46. Iwamiya's device already includes 940 nm infrared LEDs and it would have been obvious and straightforward to augment the device with one or more red LEDs. Pet., 44-45; APPLE-1079, ¶¶28-31.

Optimizing sensitivity of the photodiodes for oxygen saturation, adapting the optical filter to pass both red and infrared light (or implementing an oximeter without a filter), and performing signal processing for calculating oxygen saturation were all known, obvious, and within the skill of a POSITA. APPLE-1003, ¶¶89-93; APPLE-1013, 94, 96; APPLE-1037, Abstract; APPLE-1039, [0052]; APPLE-1041, [0137]; APPLE-1028, [0052]-[0054], [0058].

C. The POR mischaracterizes Iwamiya in asserting that it teaches away from measuring blood oxygen saturation using red and infrared light

Iwamiya discloses detecting pulse rate using a single wavelength of infrared light at 940 nm. APPLE-1004, 1:62-2:6, 6:32-35. Iwamiya never criticizes, discredits, or otherwise discourages the use of **two** wavelengths of red and infrared light **for the purpose of measuring oxygen saturation**. *Meiresonne*, 849 F.3d at 1382; APPLE-1079, ¶32.

A POSITA looking to adapt Iwamiya would not have been led away from the use of red and infrared LEDs that would allow determination of oxygen saturation apart from pulse rate. APPLE-1003, ¶99. Indeed, Iwamiya's preferred

940 nm wavelength for pulse rate measurements could be retained in the Iwamiya-Sarantos combination since 940 nm light is also commonly used for determining oxygen saturation. *Id.*; APPLE-1013, 16, 52, 62-63, 73, 79-80; APPLE-1040, 4; APPLE-1042, 16; APPLE-1014, 1; APPLE-1035, 3-4; APPLE-1028, [0007]. The resulting device would have retained the advantages of the original with respect to measuring pulse rate of users with high melanin in the skin. APPLE-1079, ¶33.

Additionally, even if such a teaching away existed (it does not), it applies only to users having “a large amount of melanin[] pigment” and therefore the proposed modifications would be suitable for other users. APPLE-1004, 1:53–2:6, 6:31–34, 10:34–38, 11:43–49, 1:28-52. A POSITA’s desire to achieve known benefits by adding a red wavelength to measure oxygen saturation in addition to pulse rate would have justified such reasonable design tradeoffs. *Pet.*, 45; *Winner*, 202 F.3d at 1349 n.8; *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014); APPLE-1079, ¶34.

D. A POSITA would have been motivated to apply Sarantos’s suggestions to Iwamiya

Masimo’s assertions that Apple presented only “a generic motivation” (POR, 38) are rooted in a mistaken assumption that the evidence and arguments in the present proceeding are identical to those in the related ITC proceedings. But the evidentiary record and even expert in this IPR proceeding are different. For

example, the instant Petition articulated numerous evidence-backed reasons for the combination. Pet., 43-46; APPLE-1003, ¶¶89-93; *Acoustic Tech.*, 949 F.3d, 1375; APPLE-1079, ¶35. Additionally, Masimo’s assertion that measuring blood oxygenation “while jogging or exercising” would require measuring “continuously through motion” has no basis as a POSITA would have been aware that users could easily and briefly pause workouts or conduct periodic measurements to measure blood oxygenation. APPLE-1079, ¶36.

E. A POSITA would have reasonably expected success in modifying Iwamiya to measure oxygen saturation at the wrist

Even apart from Sarantos, over a dozen references of record demonstrate feasibility of measuring oxygen saturation at the wrist.³ Pet., 45-46. Sarantos and these references demonstrate that a POSITA would have reasonably expected success implementing the combinations to determine oxygen saturation at the wrist before the ’743 Patent. APPLE-1003, ¶93 (citing APPLE-1033–APPLE-1036);

^aThe bulk of these references were not previously submitted during the ’745 patent ITC proceeding. In addition, while Masimo devotes an entire section on the alleged deficiency of the references in not determining oxygen saturation at the wrist, claims 11, 24, and arguably even claim 18 of the ’743 patent do not require determining oxygen saturation *at the wrist*.

APPLE-1014, APPLE-1088, APPLE-1008, APPLE-1028, APPLE-1092, APPLE-1038, APPLE-1042–APPLE-1048); APPLE-1079, ¶¶37-49.

A POSITA would have known of these references as the law “presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” *In re Carlson*, 983 F.2d 1032, 1037-38 (Fed. Cir. 1993); *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

For example, Maattala identified an “optimum place” on a user’s “wrist so that it would provide reliable oxygen saturation (SpO₂) readings” for its wrist band to achieve “many benefits”:

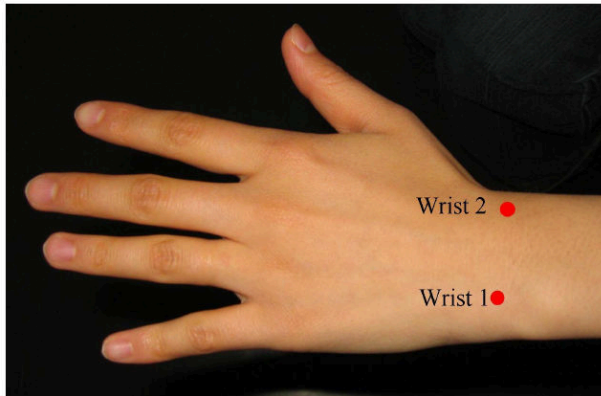


Figure 8. Measurement spots on the outer wrist

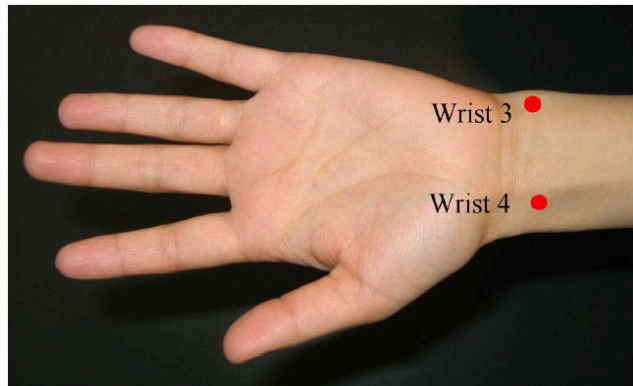


Figure 9. Measurement spots on the inner wrist

APPLE-1036, Abstract, 3-5; APPLE-1079, ¶38.

In Cai, the authors “confirmed the feasibility of our oximeter” that employed “[a] wrist located reflectance sensor.” APPLE-1035, 1-2, (“...effectively detect the change of oxygen saturation.”); APPLE-1003, ¶93; APPLE-1079, ¶39.

Pang describes a “wrist pulse oximeter... that *detected the pulse wave signal efficiently*” (confirmed by “experimental results”) such that “*oxygen saturation can then be calculated.*” APPLE-1014, 1, 5; APPLE-1079, ¶43.

Li’s pulse oximeter “gather[ed] high integrity data at...wrist...locations from a group of 48 subjects.” APPLE-1034, Abstract. Li’s “experimental data from the wrist” confirmed “suitable PPGs” for measuring blood oxygenation at the wrist. *Id.*, 8; APPLE-1003, ¶93; APPLE-1079, ¶40.

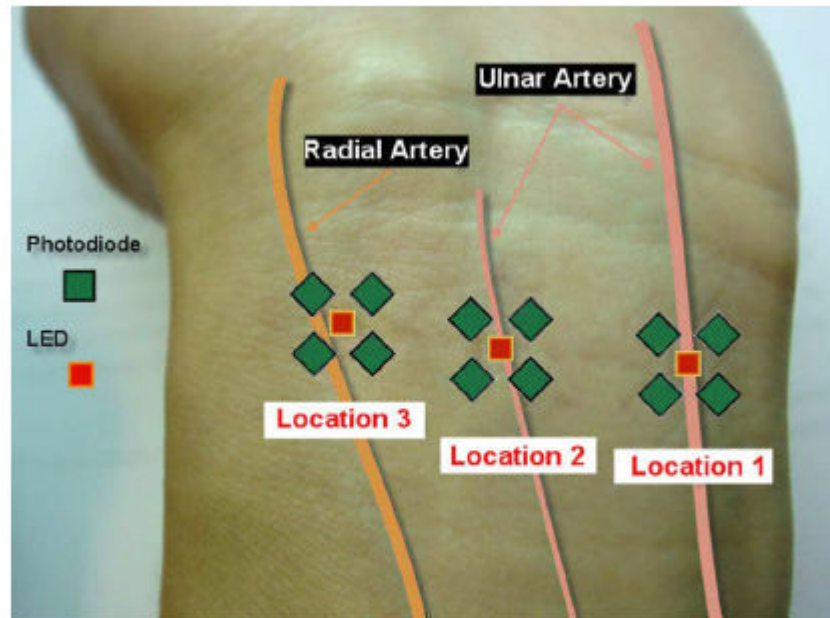


Fig. 14. Pulse oximeter measurement locations on the left wrist.

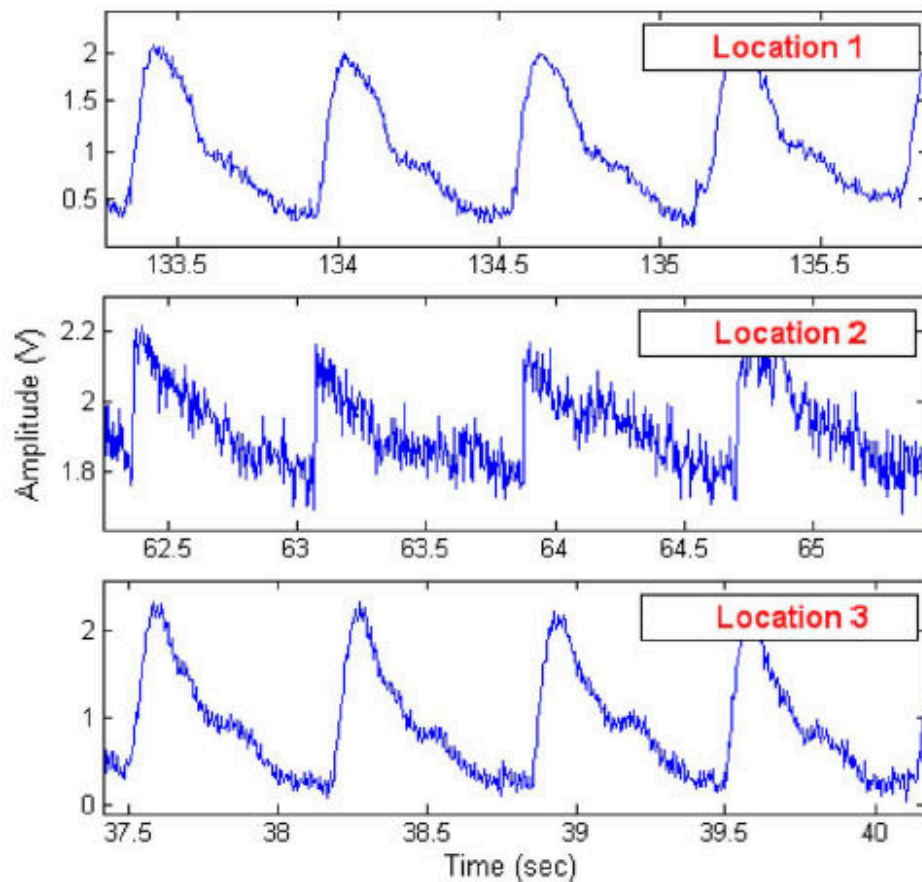


Fig. 13. Wrist PPGs corresponding to the placement locations in Fig. 14.

APPLE-1034, 8.

Notably, claims 11, 18, and 24 do not require any degree of consistency or “high quality PPG” signals and thus Li sufficiently demonstrates a reasonable expectation of success with respect to determining oxygen saturation to the degree required by the ’743 patent claims. APPLE-1079, ¶41.

Fontaine demonstrates that in 2013, a group of undergraduates were “able to accurately measure within an error of + 1% and $\pm 3\%$ for SpO_2 and PR [pulse rate] respectively from the wrist.” APPLE-1042, Abstract; APPLE-1079, ¶44.

Table 7.1: Calculated accuracy for the average SpO₂ and PR for each data set

Average Measurements	Reference		Prototype		Percent Errors	
	SpO ₂ (%)	PR (bpm)	SpO ₂ (%)	PR (bpm)	SpO ₂	PR
Wrist Standing	97.9	92.6	97.3	92.8	0.6	0.2
Wrist Sitting	98.2	82.4	98.4	83.3	0.2	1.1
Chest Standing	98.1	96.7	98.5	96.5	0.4	0.1
Chest Sitting	97.8	83.8	98.1	83.9	0.3	0.1

APPLE-1042, 60-101.

Brady demonstrates that as of 2006, a POSITA knew techniques for implementing “a wrist worn article for monitoring a user’s vital signs” including “oxygen saturation level data.” APPLE-1028, [0004], [0033], [0046]-[0048]; APPLE-1079, ¶¶45-46.

Numerous other references demonstrate a reasonable expectation of success in determining oxygen saturation at the wrist by 2015. APPLE-1088, 10, 18, 49, 52, 80-81; APPLE-1033, Abstract, 4:1-22, 6:30-63, 7:14-35; APPLE-1044, 1:2-5, 2:12-14, 3:8-12, 6:15-18, 10:30-11:3, FIG. 7; APPLE-1092, [0002], [0014]-[0015], [0035]-[0036], [0104], [0124], FIG. 5; APPLE-1045, Abstract, 2, 9, 12, FIGS. 1A-

4; APPLE-1046, 3:55-61, 4:14-21, 6:63-7:22, 12:36-43, 14:50-15:3, FIGS. 15A-15C; APPLE-1038, Abstract, 3:66-5:7, 9:15-17, 17:43-45, FIGS. 3-4; APPLE-1047, [0010], [0014], [0025], [0086], [0108]-[0109], FIGS. 1, 5A-5B; APPLE-1048, [0015], [0020]; APPLE-1079, ¶¶47-48.

Notably, a finding of obviousness “does not require absolute predictability of success.” *Almirall, LLC v. Amneal Pharms. LLC*, 28 F.4th 265, 275 (Fed. Cir. 2022).

And Masimo’s assertions that “none of the researchers involved with Apple’s cited references ever” marketed a wrist-worn device for measuring oxygen saturation are of no import. The motivations and resources of researchers are not inherently aligned with market forces and companies having the available capital for bringing such a product to mass market. Indeed, with respect to Fitbit and other companies mentioned in the POR, the evidence is equivocal concerning the *reason* why such devices were not commercially available in 2015.

Masimo’s arguments about the alleged shortcomings of the prior art stand directly at odds with the ’743 patent’s limited disclosure.⁴ APPLE-1079, ¶¶49-50. The ’743 patent makes only passing reference to pulse oximetry at the wrist. *Id.*;

⁴ The majority of the ’743 Patent describes an attenuation oximeter for a finger. APPLE-1001, FIGs. 1-5, 8, 5:41-10:10.

APPLE-1001, 2:57-60; 10:45-49; 12:16-20.

Masimo's '745 Patent IPR expert conceded that the forehead would provide a much stronger signal for measuring oxygen saturation than the wrist (APPLE-1080, 37:6-8), and yet the '743 Patent discloses no reflectance sensor adaptations that would be made to successfully determine oxygen saturation from a weaker signal at the wrist. APPLE-1079, ¶50. The '743 Patent instead assumes that a POSITA would have known how to implement such measurements at the wrist despite the weaker signal. *Id.* Masimo's expert in the related '745 Patent IPR agreed. APPLE-1080, 17:19-22, 29:2-31:17, 48:17-22; APPLE-1086, 211:8-223:6. Masimo's '745 IPR expert was likewise unable to identify any specific feature or combination of features recited in the claims that allows for pulse oximetry at the wrist. APPLE-1080, 33:12-19, 37:9-38:7⁵, 39:9-45:22, 47:10-16; APPLE-1079, ¶51.

To the extent a POSITA would have understood the '743 Patent as enabling oxygen saturation determinations at the wrist, a POSITA would also have had a level of skill sufficient to enable corresponding prior art techniques for determining oxygen saturation at the wrist that are disclosed with at least the same level of

⁵ Duckworth identified FIG. 7A's "light concentrator 708," which does not correspond to any claimed feature.

detail. *In re Epstein*, 32 F.3d 1559, 1568 (Fed. Cir. 1994); *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020); APPLE-1079, ¶51.

Masimo diverts attention from the '743 specification's sparse treatment of wrist-based measurements by citing evidence of challenges that Apple successfully overcame to develop pulse oximetry. But the fact that Apple's engineers [REDACTED]

[REDACTED]

[REDACTED] demonstrates that a POSITA would have had a reasonable expectation of success. EX2085, 13 ,4-9.

Masimo cites testimony from Apple engineers in the ITC proceeding in an effort to support its narrative. POR, 39-50. But the engineers' testimony regarding their subjective experiences developing pulse oximetry for the Apple Watch does not bear on whether a POSITA would have reasonably expected success in performing the claimed function of "determining" an oxygen saturation parameter at the wrist (with no claimed degree of accuracy, time-frame for gathering signals, or exact location). APPLE-1079, ¶52.

As noted above, a POSITA is attributed knowledge of all the prior art. The engineers did not testify at the ITC from the perspective of a POSITA, and indeed, there is no evidence that the engineers were even aware (as a POSITA would have been) of the majority of prior art references and studies that had established the feasibility of determining oxygen saturation at the wrist before the '743 Patent. *In*

re Sneed, 710 F.2d 1544, 1550 (Fed. Cir. 2012).

The POR also fails to place the Apple engineers' testimony in its proper context, instead cherry-picking soundbites. APPLE-1079, ¶53. But when the engineers' testimony and related evidence is considered in its entirety, it is clear that the challenges confronting the engineers with respect to the Apple Watch did not merely entail determining an oxygen saturation parameter [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Unlike the Watch, the claims do not require regulatory approval, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] To the

contrary, the claims merely refer to “determin[ing] a physiological parameter of a user responsive to the one or more signals” “wherein the physiological parameter is oxygen saturation”—features which could be satisfied by far more rudimentary functions than that implemented on the Watch. APPLE-1079, ¶54.

In this context, Masimo’s reliance on evidence of Apple’s own successes is not probative of a lack of reasonable expectation of success in the instituted grounds. Challenges overcome in Apple Watch development involved design constraints that are not required by the claims, and the related evidence is therefore not legally relevant to assessing reasonable expectation of success in achieving the oxygen saturation feature claimed without those design constraints. *Intelligent Bio-Systems, Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016); *Sound View Innovations, LLC v. Hulu, LLC*, 818 F. App’x 1009, 1013 (Fed. Cir. 2020). Masimo’s expert admitted that he did not consider such design constraints when forming his opinions. APPLE-1086, 169:3-170:18, 215:17-216:11.

That the challenges addressed by Apple engineers stemmed from features not required by the claims is apparent from portions of the engineers’ ITC testimony not cited in the POR. And the challenges involved in developing pulse oximetry for the Apple Watch extended far beyond anything required by the ’743 Patent claims. APPLE-1079, ¶¶54-63; APPLE-1083, 832:23-833:10; APPLE-

1082, 878:4-16; EX2076, 958:19-24, 963:19-964:1, 964:7-11, 965:15-22, 970:15-972:5; APPLE-1084, 902:13-19; EX2078, 925:6-12, 949:10-16; EX2081, 167:18-169:10, 173:13-174:8; EX2082, 108:15-109:20; EX2080, 136:19-137:1, 160:21-161:2; EX2077, 999:7-11, 1000:6-1001:1, 1006:6-21, 1015:13-1016:1; EX2085, 4-5; EX2083, 7, 23.

V. IWAMIYA-SARANTOS RENDERS OBVIOUS AN OPENING DEFINED IN THE DARK-COLORED COATING WITH A DIFFERENT LENGTH AND WIDTH AS RECITED IN CLAIMS 13 AND 20.

In the Iwamiya-Sarantos combination, the optical filter is positioned in the opening in the dark-colored coating, as described above (Section III, *supra*) and in the Petition, the opening is an opening in Sarantos's dark-colored coating as applied to Iwamiya. Pet., 28-32, 47-49.

The Petition addressed Iwamiya's plural light receiving units embodiments. Pet., 7-8, 25-31, 36-40, 11-15. The Petition describes the benefits known to a POSITA of applying Sarantos's teachings regarding the dark-colored coating to Iwamiya's device, including Sarantos's teachings regarding the shape of the opening in the dark-colored coating. Pet., 11-17, 47-49; APPLE-1079, ¶64. The Petition also identified the benefits of using Sarantos's photodetectors to achieve a "high-aspect-ratio." Pet., 47-49 (citing APPLE-1005, 9:48-10:26). As the cited

portion of Sarantos explains, “a *significant performance increase* may be realized by deviating from the typical square” photodetectors “of conventional PPG sensors.” APPLE-1005, 9:48-67, 7:3-11. The opening(s) in the dark-colored coating are configured to have a different length and width to match this non-square shape of the HAR photodetectors to best achieve light blocking functionality. Pet., 47-49; APPLE-1003, ¶¶95-97; APPLE-1079, ¶65.

VI. IWAMIYA-SARANTOS (WITH OR WITHOUT UTTER) RENDERS OBVIOUS CLAIMS 5 AND 21 AND ELEMENT [22D].

Iwamiya’s photodiodes 9 are “disposed...on the same circumference centered on an optical axis” of the circular light taking unit 8 and thus have a shape corresponding the measurement site encircled by the circular light block.⁶ APPLE-1004, 14:36-41; APPLE-1003, ¶¶80-84; Pet., 36-40; APPLE-1079, ¶22.

⁶ Masimo’s substantially similar argument was also rejected at the ITC, where the ALJ found that Iwamiya “clearly” discloses these features. EX2093, 232-233.

photodiodes 9 arranged “on the same circumference centered on an optical axis” of the circular light taking unit 8

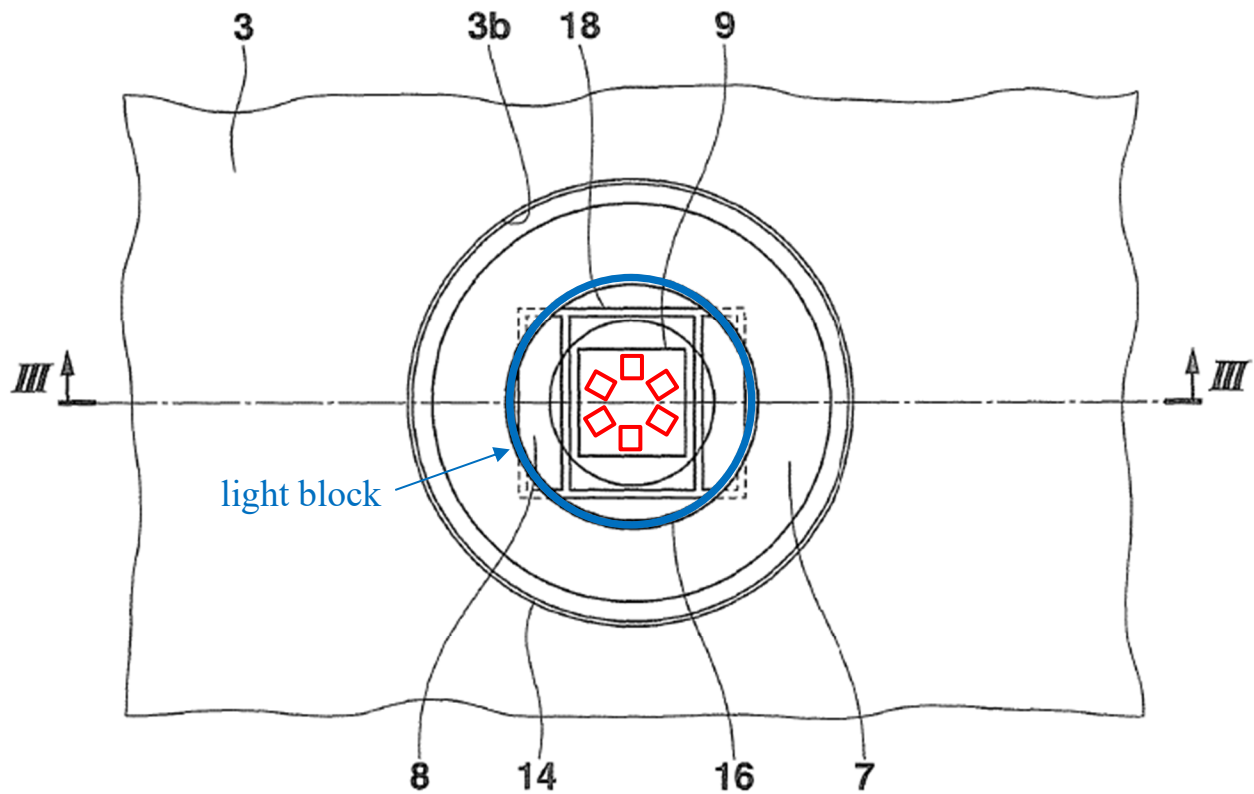


FIG.2

APPLE-1004, FIG. 2 (annotated according to Iwamiya’s teachings).

Iwamiya leaves the choice of the number of photodiodes to a POSITA, who would have known that more than just a “small plurality” of photodiodes (e.g., more than 2-3) were commonly employed in pulse oximeters before the ’743 patent (and would have found it obvious to use a greater number of photodiodes (e.g., six or more) to achieve known benefits such as increasing the detection area and light sensitivity). APPLE-1003, ¶82; APPLE-1013, 107; APPLE-1089, 4:6-9,

4:59-62; APPLE-1090, 4; APPLE-1035, [0022], FIG. 1A.

Notably, the '743 specification never expressly discloses a minimum or critical number of photodiodes that must be present to form the claimed array. APPLE-1003, ¶83. Masimo thus improperly seeks to hold the prior art to a higher standard of disclosure than the '743 patent itself. APPLE-1001, 9:27-30, 11:37-43; APPLE-1080, 97:22-102:17; APPLE-1079, ¶¶23-24.

The specific number of photodiodes alleged to be required by the claims is also not a patentable distinction. *E.I. du Pont de Nemours & Co. v. Synvina C.V.*, 904 F.3d 996, 1006 (Fed. Cir. 2018). A claimed range is rendered obvious both when the prior art range overlaps and even when it does not in the absence of criticality or unexpected results. *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003); MPEP §2144.05.

The claim term “correspond” also has broader meanings than those represented to the Office during prosecution of the parent application. APPLE-1092, 3; APPLE-1093, 3; APPLE-1094, 3. Iwamiya’s photodiodes arranged “on the same circumference centered on an optical axis” of circular light taking unit 8 is consistent with the plain meaning of “correspond” at least because the photodiodes are in agreement, harmony, or conformity with the circular shape of the light taking unit 8 bounded by the circular light block. APPLE-1003, ¶¶80-84.

Masimo proposes hypothetical configurations involving three or four

photodetectors, but these hypotheticals demonstrate, at best, configurations that could conceivably, technically fall within the broadest scope of Iwamiya's disclosure while ignoring the most evident teaching that a POSITA would have discerned from the word "circumference": namely, a circular arrangement of diodes. APPLE-1004, 14:36-41; APPLE-1079, ¶¶23-24; POR, 63-66. A POSITA would have readily recognized that Iwamiya's description of multiple light receiving units arranged "on the same *circumference* centered on an optical axis" brings to mind a circle, not a triangle or square, thus at least rendering obvious claims 5 and 21 and element [22D]. APPLE-1079, ¶24.

VII. IWAMIYA AND SARANTOS DISCLOSE A LENGTH AND A WIDTH OF THE OUTPUT LIGHT PATTERN (CLAIM 9)

Claim 9 recites that "the output light pattern *comprises* a width and a length." APPLE-1001, 16:19-21. Claim 9 does *not* specify where the length or width must be, or impose any limitation other than *any* width and *any* length *comprised in* in the output light pattern being different.

Iwamiya teaches that the "annular light guide unit 7 [] guides the observation light emitted from the light emitting units 6 and annularly diffuses and irradiates the observation light with respect to a skin H." APPLE-1004, 6:7-14. APPLE-1079, ¶66. It would have been obvious to a POSITA that 1) the shape and

dimensions of the output light pattern correspond to the shape and dimensions of the guide unit 7, and 2) while the guide is annular in shape, the corresponding light *pattern* (and any portions thereof) *includes* numerous lengths and widths as depicted in the example below. APPLE-1079, ¶67.

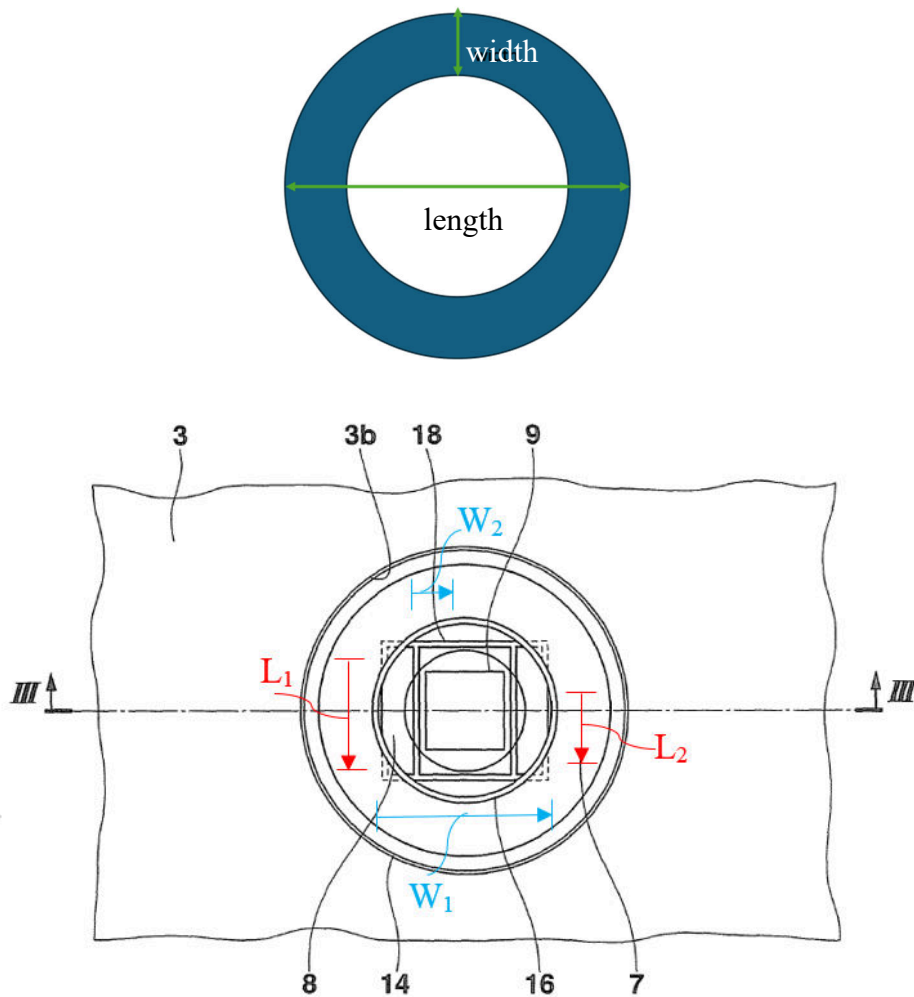
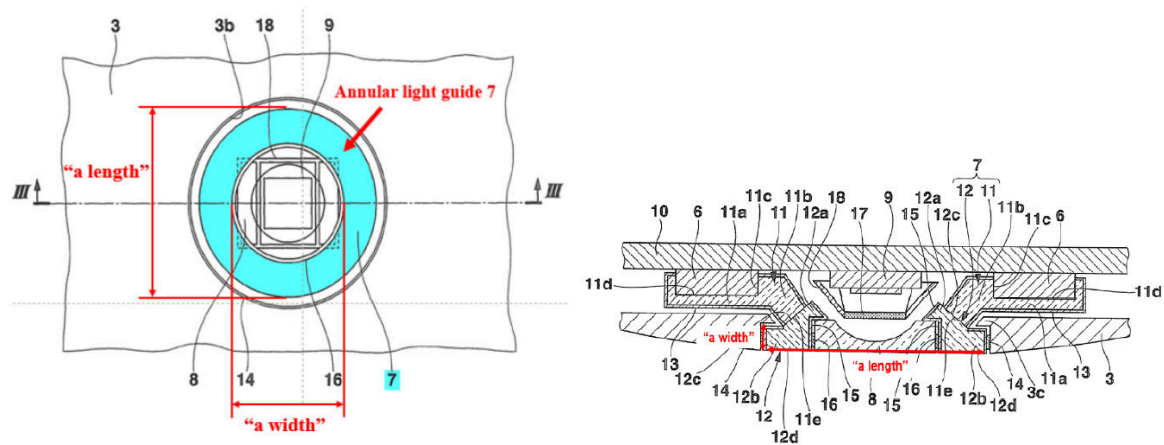


FIG. 2

APPLE-1004, FIG. 2.

The Petition presented two example mappings (shown below) of how

Iwamiya and Sarantos satisfy claim 9. Pet., 40-42; APPLE-1079, ¶68.



APPLE-1004, FIGS. 2 (left), 4 (right).

In the first example (shown on the left above), one possible length and width are shown under a plan view of Iwamiya’s device. APPLE-1004, FIG. 2, 4:9-10. The length stretches between two ends of the light pattern. The width stretches between two points of the light pattern. In the second mapping of claim 9 (shown on the right above), the Petition provided another example in which the width of the output light pattern is provided in a different dimension than in the first mapping. APPLE-1079, ¶69.

A length is defined as “the measurement of the extent of something along its greatest dimension,” and a width is defined as “the distance across something from one side to the other.” APPLE-1095, 776, 1542. Consistent with these definitions, a POSITA would have understood that Iwamiya and Sarantos disclose a length and width of an output light pattern that are different, as shown in the figures above.

APPLE-1079, ¶70.

VIII. MASIMO CONCEDES THAT IWAMIYA DISCLOSES AN OVAL-SHAPED PATTERN (CLAIM 10)

Masimo acknowledges that Iwamiya discloses an annular light guide unit. POR, 27 (“As shown in Iwamiya, the annular light guide”), 26. Iwamiya discloses that “[t]he light guide unit 7 comprises a light guiding ring portion 11 ... [that] is formed in *almost a ring shape*” including a flat ring portion 11a and inclined ring portion 11b. APPLE-1004, FIGS. 2, 3, 6:40-52. Moreover, the dictionary definition of “annular” is “shaped like or forming a ring.” and a POSITA would have understood that a ring encompasses an oval shape. APPLE-1095, 55. This understanding of “ring” is consistent with the use of “ring,” for example when describing oval-shaped rings around planetary objects or describing jewelry around a finger. APPLE-1079, ¶71. And because a POSITA would have understood that the shape of the output light pattern would correspond to the shape of the guide unit 7 (as noted above in Section VII), a POSITA would have found it obvious that an annular guide unit would generate an annular output light pattern, which encompasses, *by definition*, an oval shaped light pattern. *Id.*

IX. DR. MADISETTI'S TESTIMONY IS ENTITLED TO LITTLE OR NO WEIGHT

Dr. Madisetti's testimony is entitled to little or no weight because (1) it is insufficiently supported by objective evidence or analysis, (2) Dr. Madisetti was repeatedly non-responsive during deposition, and (3) Dr. Madisetti's answers revealed that he was either unable or unwilling to identify how the '743 patent's specification examples relate to claim terms on which he had opined and premised alleged distinctions over the applied prior art. 37 C.F.R. § 42.65(a); *Nobel Biocare Services AG v. Intradent USA, Inc.*, 903 F.3d 1365, 1382 (Fed. Cir. 2018); *10X Genomics, Inc. v. The University of Chicago*, IPR2015-01157, Paper 30 at 2 (PTAB May 26, 2016) ("...non-responsiveness of a witness...would go to the weight given to that witness's direct testimony.").

Despite having previously appeared in numerous IPR proceedings, Dr. Madisetti incorrectly insisted during deposition that he was only required to answer questions "if asked by the court to do so." APPLE-1086, 144:6-146:17, 158:6-159:8. Consistent with that erroneous view, Dr. Madisetti repeatedly refused to answer straightforward questions regarding evidence of record, responding that he would "defer to the specification" or "defer to whatever is in my declaration" or had "no opinion." APPLE-1086, 22:14-24:8, 44:1-46:7, 47:2-19, 65:13-22, 73:2-16, 74:22-75:15 (refusing to answer questions because "*Anything that is not in my*

declaration is not part of my opinions in this particular matter.”), 96:3-16, 228:3-19, 236:12-242:8, 283:17-284:10; APPLE-1087, 448:2-449:8, 370:9-18, 386:14-22, 388:12-17, 391:9-15, 392:9-395:6, 396:2-398:7, 400:17-401:10, 406:4-12.

As another example, Dr. Madisetti was unwilling or unable during deposition to address whether the ’743 specification’s “opening 402” was an example of the claimed “opening defined in the dark-colored coating.” APPLE-1086, 70:15-73:16, 79:12-86:19, 88:22-90:16, 99:15-101:10.

Dr. Madisetti further refused to identify examples of the “surface comprising a dark-colored coating” in the ’743 specification (APPLE-1086, 104:1-117:10), and would not answer questions about what configurations would fall within the scope of the claimed “opening defined in the dark-colored coating.” APPLE-1086, 48:1-20, 50:10-58:22, 67:22-70:7.

Dr. Madisetti was similarly unwilling or unable to say whether specific ’743 Patent embodiments were compatible with a light block. APPLE-1087, 396:2-399:16, 370:9-18, 374:14-379:21, 382:21-386:6. Dr. Madisetti also would not opine on the meaning of terms such as “annular” or “circumference,” and appeared to not know that annular refers to a specific shape. APPLE-1087, 442:11-443:18, 445:4-446:7, 446:12-450:7, 450:15-460:9.

Respectfully submitted,

Dated: February 14, 2025

/Andrew B. Patrick/

W. Karl Renner, Reg. No. 41,265
Patrick J. Bisenius, Reg. No. 63,893
Andrew B. Patrick, Reg. No. 63,471
Usman A. Khan, Reg. No. 70,439
Nicholas Stephens, Reg. No. 74,320
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
T: 202-783-5070
F: 877-769-7945

Attorneys for Petitioner

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petitioner's Reply to Patent Owner's Response totals 5,541, which is less than the 5,600 allowed under 37 CFR § 42.24.

Respectfully submitted,

Date: February 14, 2025

/Andrew B. Patrick/

W. Karl Renner, Reg. No. 41,265
Patrick J. Bisenius, Reg. No. 63,893
Andrew B. Patrick, Reg. No. 63,471
Usman A. Khan, Reg. No. 70,439
Nicholas Stephens, Reg. No. 74,320
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
T: 202-783-5070
F: 877-769-7945

Attorneys for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(1) and 42.6(e)(4)(iii), the undersigned certifies that on February 14, 2025, a complete and entire copy of this Petitioner's Reply to Patent Owner's Response and exhibits were provided via email to the Patent Owner by serving the email correspondence addresses of record as follows:

Brian C. Claassen (Reg. No. 63,051)
Carol Pitzel Cruz (Reg. No. 61,224)
Perry D. Oldham (Reg. No. 52,082)
Daniel C. Kiang (Reg. No. 79,631)
Irfan A. Lateef (Reg. No. 51,922)

KNOBBE, MARTENS, OLSON & BEAR, LLP
2040 Main Street, Fourteenth Floor
Irvine, CA 92614
Tel.: (949) 760-0404
Fax: (949) 760-9502

E-mail: AppleIPR743-1@knobbe.com

/Crena Pacheco/
Crena Pacheco
Fish & Richardson P.C.
60 South Sixth Street
Minneapolis, MN 55402
pacheco@fr.com