

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE, INC., : Case Nos.
Petitioner, : IPR 2024-00296
v. :
MASIMO CORPORATION, :
Patent Owner. :

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VIDEO-RECORDED DEPOSITION OF VIJAY K.
MADISETTI, PH.D., via Zoom videoconferencing,
before Matthew Moss, RPR, FCRR, and Notary Public
of the State of Minnesota, Friday,
January 10, 2025, 12:00 p.m.

Reported By: Matthew Moss, RPR, FCRR

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1 C O N T E N T S

2 WITNESS: VIJAY K. MADISETTI, PH.D. PAGE

3 MS. LEUNG 5

4

5 E X H I B I T S

6 EXHIBIT DESCRIPTION PAGE

7 Exhibit 1001 Previously Marked, U.S. 19

8 Patent No. 10,984,911 B2

9 Exhibit 1004 Previously Marked, U.S. 33

Patent Application

10 Publication No. US

2004/0039272 A1

11 Exhibit 1005 Previously Marked, U.S. 72

12 Patent No. 6,014,576

13 Exhibit 1006 Previously Marked, U.S. 90

14 Patent No. 5,188,108

15 Exhibit 2043 Previously Marked, 37

16 Masimo - Patent

17 Information

18 Exhibit 2046 Previously Marked, 87

19 Masimo Corporation

20 Announces Masimo Rainbow

21 SET, The World's First

22 Pulse CO-Oximeter

Page 4

1 E X H I B I T S CON'T

2 EXHIBIT DESCRIPTION PAGE

3 Exhibit 2047 Previously Marked, 82

4 Measurement of

5 Carboxyhemoglobin and

6 Methemoglobin by Pulse

7 Oximetry, A Human

8 Volunteer Study

9

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1 P R O C E E D I N G S

2 VIJAY MADISETTI, PH.D.,

3 having been first duly sworn/affirmed, was

4 examined and testified as follows:

5 EXAMINATION

6 BY MS. LEUNG:

7 Q Dr. Madiseti, thank you for being here
8 today. To start I'd like to recognize that our
9 conversation today is being transcribed by the
10 court reporter, and to make his job easier and
11 make sure we can obtain an accurate record of this
12 deposition, it's important that we strive not to
13 talk over one another. So I'll ask a question and
14 then provide you with an opportunity to respond.

15 If a question is unclear, just ask me to
16 clarify, and I'll restate or rephrase a question.
17 I'll try to take a break about every hour, but if
18 you at any time need to take a break, just let me
19 know.

20 So just so we're on the same page, we're
21 here today regarding IPR proceeding number
22 IPR 2024-00296, regarding U.S. Patent

1 Number 10,984,911.

2 Now, can you please state your full name
3 for the record.

4 A It's Vijay K. Madisetti.

5 Q Dr. Madisetti, do you understand that you
6 are under oath?

7 A Yes.

8 Q Is there any reason that you can't give
9 truthful and accurate testimony today?

10 A No.

11 Q To ensure clarity for the record, I'll
12 define several terms that I'll be using throughout
13 this deposition.

14 So when I use the terms "patent owner" or
15 "Masimo," I'm referring to Masimo Corporation.

16 Do you understand?

17 A Yes.

18 Q When I use the term "Apple" or
19 "petitioner," I'm referring to Apple, Inc.

20 Do you understand?

21 A Yes.

22 Q And when I use the term "'911 Patent," I'm

1 referring to U.S. Patent Number 10984911.

2 Do you understand?

3 A I do.

4 Q And when I use the phrase "this IPR" or
5 "this proceeding," I'm referring to this IPR
6 proceeding number IPR 2024-00296 filed against
7 the '911 Patent.

8 Do you understand?

9 A Yes.

10 Q And when I use the acronym "POSITA," I'm
11 referring to a person of ordinary skill in the art
12 at the time of the alleged invention.

13 Do you understand?

14 A Yes.

15 Q Can you please describe how you prepared
16 for today's deposition.

17 A I reviewed my declaration.

18 Q Approximately how much time did you spend
19 reviewing your declaration?

20 A I don't remember the exact number, but
21 just a few hours.

22 Q And as part of your preparation for your

1 deposition today, please identify each person you
2 communicated with, either in person or via
3 telephone.

4 A I spoke with the attorney, Mr. Doug
5 Wentzel.

6 Q And as part of your preparation for
7 today's deposition, did you conduct any
8 independent searches, such as searches on the
9 internet?

10 A No.

11 Q And when did you first become aware of
12 the '911 Patent?

13 A I don't remember the exact date.

14 Q And without revealing any privileged
15 communications, can you describe the process by
16 which you prepared your declaration for the '911
17 Patent, you know, for example, did you write every
18 word throughout the process, or did counsel for
19 Masimo prepare first drafts that you revised, or
20 did you do something else?

21 A I think this '911 was part of the
22 different proceedings, and I was familiar with

1 that, and I've discussed with the attorneys as
2 part of my earlier depose (sic), I believe, on
3 the '911.

4 And for this IPR I had discussions with
5 the attorney and discussed my opinions and my
6 opinions are captured in my declaration. The
7 attorneys provided some editorial help.

8 Q And do you know approximately, you know,
9 what percentage of the words in your declaration
10 you wrote as opposed to merely reviewing the words
11 written by someone else?

12 MR. WENTZEL: Objection; relevance.

13 A The opinions are mine, and the declaration
14 has my opinions, and I think some of the legal
15 guidance came from the counsel. Some of the words
16 may have come from my earlier declarations in the
17 earlier reports.

18 But I don't remember the exact percentage
19 one way or the other. Opinions are mine, and the
20 attorneys provided editorial assistance.

21 Q (By Ms. Leung) And as part of your work
22 for this IPR, did you communicate in any way with

1 any of the named inventors on the '911 Patent?

2 A As part of the IPR? No.

3 Q As part of your work on this IPR, did you
4 ever communicate with anyone affiliated with
5 Masimo other than Masimo's attorneys?

6 MR. WENTZEL: Objection; asked and
7 answered.

8 A I just said I don't believe so.

9 Q (By Ms. Leung) Do you remember
10 approximately when you began working on this IPR?

11 A Probably sometime last year, early last
12 year or middle of last year or around that time
13 frame.

14 Q In forming your opinions in this IPR, did
15 you rely on any assumptions that are not
16 identified in your declaration?

17 A I think my declaration captures all my
18 opinions as of the time of writing.

19 Q And nothing has happened since you
20 prepared your declaration that changes any of the
21 opinions that you provided in the declaration,
22 correct?

1 A That's right. Nothing -- nothing has
2 changed.

3 Q Are you currently aware of any errors that
4 exist in your declaration?

5 A The declaration mentions Willow Labs, and
6 you refer to Masimo. I'm not sure from the legal
7 point of view whether Masimo is the same as Willow
8 Labs or something else.

9 Other than that, I don't see any...

10 Q Okay.

11 THE STENOGRAPHER: I'm sorry, other than
12 that you don't see any...

13 A Yeah, I mean, you mentioned Masimo. It
14 says Apple, Inc. vs. Masimo, the IPR, but the
15 declaration said Willow Labs on the top. So
16 that's the only comment I had so far, but
17 everything else seems okay.

18 Q (By Ms. Leung) Okay. Are you -- are you
19 saying that the -- the proceeding list, the patent
20 owner is Willow Labs, but I am referring to Masimo
21 here in the questioning?

22 A You did not mention the word Willow

1 Laboratories, which I, in my declaration,
2 identified as the patent owner on the page 1 of
3 the cover page of my declaration.

4 So that's the only comment I wanted to
5 raise.

6 Q Okay.

7 A And -- but again, I'm not sure what the
8 legal aspect is, whether Masimo is the same as
9 Willow or is a subsidiary or whatever.

10 Q Okay. But you were retained by Masimo; is
11 that correct?

12 A I believe so, yes.

13 Q Okay. So during your career,
14 approximately how many times have you been
15 retained as an expert in litigation matters,
16 either as a testifying expert or a nontestifying
17 expert?

18 A Quite a few times. I don't remember exact
19 numbers, but I believe it's quite a few times.

20 Q Do you remember how -- about how many
21 times you were retained as an expert in IPR
22 matters or other proceedings before the PTAB?

1 A Over the past ten years, again, I would
2 say quite a few times. Probably a hundred or more
3 times, but I don't know the exact number.

4 Q Okay. And during your career,
5 approximately how many times have you been deposed
6 as an expert?

7 A Again, I don't remember the exact number,
8 but over the past ten years, probably more than a
9 hundred times.

10 Q And how would you characterize your
11 reputation in your field?

12 MR. WENTZEL: Objection; relevance.

13 A My reputation in my field you mean?

14 Q (By Ms. Leung) Yes.

15 A I'm not sure what you're asking.

16 Q Your reputation in your field as a
17 professor, a technical expert, you know,
18 generally, by others in your field.

19 MR. WENTZEL: Objection; vague, relevance.

20 A I've been recognized as an IEEE Fellow,
21 and the IEEE Fellow is the highest ranked
22 designation for electrical engineers.

1 The IEEE is the largest professional body
2 in the world, and each year they select one-tenth
3 of one percent to the rank of Fellow. And so I
4 was selected as a Fellow several -- 20 years ago.

5 I also received the Terman Medal from the
6 American Society of (sic) Engineering Education
7 for my contributions to the field of electrical
8 engineering over the past 20 years.

9 I've received several other awards. You
10 know, I have hundreds of patent applications, 16
11 issued patents. I have about a dozen books, and
12 they've sold more than 75,000 copies worldwide,
13 and they're used at 400 universities. I've
14 received teaching and research awards...

15 So I believe that I've been productive,
16 and I've been recognized for my teaching and
17 research accomplishments.

18 Q (By Ms. Leung) Has a court ever precluded
19 you from offering an opinion?

20 A I'm not sure specifically what you're
21 asking.

22 Q Well, has a court ever criticized one of

1 your opinions?

2 A Again, I don't -- there are so many
3 different trials and so many different legal
4 matters. I -- I don't know one way or the other.

5 Q Okay. Do you have any documents in front
6 of you?

7 A I have just my report, my declaration from
8 your exhibits website.

9 Q Is it a clean copy of your declaration?

10 A Yes.

11 Q Okay. Let's turn to your declaration,
12 which is Exhibit 2079 in this proceeding.

13 A Okay.

14 Q So in your declaration in paragraph 14,
15 you say you worked on "developing FFT-based pulse
16 oximetry system prototypes on FPGAs."

17 Could you describe what that involved.

18 A It was a frequency domain. So it was a
19 pulse oximeter for the forehead, and it was
20 designed with algorithms that were developed by
21 Dr. Scharf.

22 THE STENOGRAPHER: Okay. I'm going to

1 interject here and ask if we can go off the record
2 for a minute.

3 (Recess from 12:13 p.m. to 12:14 p.m.)

4 Q (By Ms. Leung) Dr. Madisetti, your
5 declaration, paragraph 14, you say that you worked
6 on "developing FFT-based pulse oximetry system
7 prototypes on FPGAs."

8 Could you describe what that involved.

9 A As I described in paragraph 14, I worked
10 with Professor John Scharf, who is a doctor,
11 and -- to develop a -- a pulse oximeter for the
12 forehead that was using frequency domain
13 algorithms.

14 Q And did the prototypes lead to a
15 commercial product?

16 A It led to a prototype. It was going
17 through various measurements and testing.

18 I don't remember what happened. I
19 don't -- I don't know what was done later with
20 those prototypes. It may have. I don't remember.

21 Q Okay. Can we turn to your declaration,
22 paragraph 47.

1 Let's go to page 27.

2 A One second.

3 Okay. I'm on page 27.

4 Q Okay. So the top of that page there, you
5 say that "The devices and methods recited in the
6 claims of the '911 Patent reduce light piping and
7 improve measurement accuracy by including a light
8 block formed at least partly of black material and
9 having a top with only one opening or window
10 through which light can reach the detector, with
11 the area of the opening or window being smaller
12 than the area of the detector."

13 I read that correctly, right?

14 A One second. You're reading from the top
15 of page 27, right?

16 Q That's right.

17 A Okay. Okay.

18 So you are reading from paragraph 47 of my
19 declaration?

20 Q Yes.

21 A Yes. That's what I said in paragraph 47.

22 Q Okay. And here you're discussing the '911

1 Patent; is that right?

2 A I'm describing at a high level some of the
3 features of the '911 Patent. The claims, of
4 course, describe the invention, so this language
5 should not be seen as a substitute for any of the
6 claims.

7 Q Okay. So what's the difference between
8 this language here that you have on the top of
9 page 27 and the actual claim language?

10 A The claims are the actual language.
11 Anything else is not.

12 Q Okay. So I see you have the claim
13 language, at least of Claim 1, reproduced here in
14 paragraph 48 of your declaration; is that right?

15 A Yes.

16 Q And then you say in paragraph 49 that
17 "...Claims 1 and 10 and their dependents...require
18 an opening (or window) through which light is
19 configured to pass to the detector that has an
20 area smaller than the detection surface area of
21 the detector."

22 Is --

1 A Yes, as described in the claim.

2 Q As described in the claim, okay.

3 Can we turn to the '911 Patent. Do you
4 have a copy of that? If not, there is a copy on
5 the download link.

6 A Okay. Let me download a copy.

7 Q And in the '911 Patent is Exhibit 1001 in
8 this proceeding.

9 (Deposition Exhibit 1001, Previously
10 Marked.)

11 A So there are many exhibits here. There
12 are almost 50 exhibits or something. They're all
13 in sequential order?

14 Q They -- it looks like maybe in reverse
15 sequential order.

16 A Okay. Okay. So let me go to -- yeah, I
17 see the '911 Patent. Let me download that.

18 Okay, I've downloaded the patent, and I've
19 opened it.

20 Q Okay. Let's turn to Column 13.

21 A One second.

22 Okay.

1 Q Okay. So Column 13, lines 38 to 54. Are
2 you there? That paragraph at lines 38 to 54.

3 A Okay. I can see paragraph that starts
4 with Figure 24, yes.

5 Q Okay. So this paragraph describes
6 Figure 24; is that right?

7 A That's what it starts with, yes.

8 Q And it says, "FIG. 24 illustrates a
9 detector assembly 2400."

10 Can you read this paragraph to yourself
11 and let me know when you're done.

12 A Yes, I've read it.

13 Q In this paragraph, is there a description
14 of the light block that's recited in the claims?

15 MR. WENTZEL: Objection; outside the scope
16 of his declaration.

17 A This is referring to an example
18 embodiment. It's an embodiment of Figure 24.

19 So it's one of the embodiments discussed
20 in the specification. That's all I can say.

21 Q (By Ms. Leung) So you can't say if there's
22 a description of the light block that's recited in

1 claims in this paragraph?

2 MR. WENTZEL: Same objection.

3 A I've not discussed specifically this
4 embodiment in my declaration.

5 So are you pointing to something in my
6 declaration that discusses this paragraph or...

7 Q (By Ms. Leung) Well, your declaration
8 offers a lot of opinions about how the prior art
9 reads on the claims.

10 And so we're trying to understand how --
11 how you're interpreting the claims of the '911
12 Patent in light of the '911 Patent specification.

13 And so we would like to know whether you
14 think this paragraph describing Figure 24
15 describes a light block?

16 MR. WENTZEL: Objection; outside the scope
17 of his declaration.

18 A As I said, Counsel, I've not offered an
19 opinion on that particular paragraph in my
20 declaration, to the best of my knowledge, unless
21 you can point me to something in my declaration.

22 So I don't have a specific opinion right

1 now.

2 Q (By Ms. Leung) So if this paragraph
3 describes an EMI shield, is an EMI shield a light
4 block?

5 A I've commented on the EMI shield and other
6 aspects with respect to the prior art that was
7 discussed in my declaration.

8 And my opinions are discussed in my
9 declaration with respect to Abdul-Hafiz,
10 A-b-d-u-l, H-a-f-i-z.

11 And I do offer a discussion, to the best
12 of my knowledge, about the embodiments of the '911
13 Patent.

14 Q (By Ms. Leung) In paragraph 45 of your
15 declaration, you --

16 A One second.

17 Q Yeah.

18 A One second. Let me get there.

19 Which page are we on?

20 Q 25.

21 A Okay. I'm on paragraph 45 on page 25 of
22 my declaration.

1 Q So in paragraph 45 you cite to the '911
2 Patent at Column 15, lines 14 to 23.

3 Do you see that?

4 A In column -- sorry, in paragraph 45, I do
5 make a number of cites, and one of the cites is to
6 Column 15, lines 14 to 23.

7 Q Okay. Can we turn to the '911 Patent,
8 Column 15, lines 14 to 23.

9 A Okay. Column 15, lines 14 to 23. Okay.

10 Q And you say, "The sensor designs claimed
11 in the '911 Patent include various features to
12 measure physiological parameters more accurately
13 in difficult conditions." And you cite this
14 paragraph.

15 And what are some of these features in
16 this paragraph that you've cited that allows
17 the '911 Patent sensor designs to measure
18 physiological parameters more accurately in
19 difficult conditions?

20 A I was referring to the -- in the
21 deposition testimony of Mr. Diab and, for example,
22 Exhibit 2030, pages 122 through 129 and 138

1 through 141 of some of the deposition testimonies
2 of, I believe, the inventors.

3 It could be Mr. Ali -- Al-Ali, but I'm not
4 sure. I don't remember whose deposition was that.
5 So I rely on that, for example, to show that the
6 claimed devices are more accurate measuring
7 multiple physiological parameters.

8 Q So for this particular sentence, "The
9 sensor designs claimed in the '911 Patent include
10 various features to measure physiological
11 parameters more accurately in difficult
12 conditions," you don't cite to the inventor's
13 testimony, but you cite to the '911 Patent.

14 So is there nothing that you can point to
15 me -- point me to in the '911 Patent to support
16 this sentence in your declaration?

17 A I -- they're all part of the same
18 paragraph. So the inventors of the '911 were
19 deposed, and they identify that the claimed
20 device's insistence were the result of research
21 conducted, and Masimo's SET technology is
22 recognized worldwide as the top technology or the

1 highest ranked accuracy.

2 It has been certified by the FDA and other
3 regulatory organizations. So I rely on that
4 evidence to show that this is very accurate and
5 under very difficult conditions, for example, such
6 as motion and other types of impairments.

7 And I cite to certain portions of the
8 patent and the claims to identify that it is -- it
9 can be used at various tissue sites.

10 And it should say "other than a finger," I
11 believe, and not a "singer." It's a typo there,
12 on the last line -- second last line.

13 Q In this paragraph, you also point to
14 Figures 1, 32, and 46.

15 Is there anything shown in those figures
16 that would allow the sensor to measure
17 physiological parameters more accurately in
18 difficult conditions?

19 A Again, I rely on the testimony of the
20 inventors and -- and the claims themselves and my
21 knowledge and understanding to make those
22 statements.

1 Q Can you turn to page 50 of your
2 declaration?

3 A You said 5-0 or 1-5?

4 Q 5-0.

5 A Okay. I'm on page 50, which is referring
6 to, I believe, paragraph 87 -- starting in
7 paragraph 87 on the previous page.

8 Q So in the very last sentence of
9 paragraph 87, the last sentence there on the
10 bottom of page 50, you say, "A person of ordinary
11 skill in the art would have understood that the
12 four blue areas shown above are the detection
13 surface area of the detector/photodiode (820/821)
14 because the shield (1005) only permits
15 light to reach those four areas of the
16 detector/photodiode (820/821)."

17 How are you interpreting detection surface
18 area of the detector photodiode in making this
19 statement?

20 A As shown in Abdul-Hafiz, the -- only the
21 blue areas that are shown are receiving light.

22 And therefore in Hafiz, in Figure 11B, as

1 I annotated it, the blue areas are the -- what a
2 person of ordinary skill in the art would
3 understand as the detection surface area.

4 Q Can you point to anything in the '911
5 Patent to support your interpretation of the
6 detection surface area?

7 A I mean, I defer to the language in my
8 declaration.

9 I believe that my understanding of the
10 claims and the plain and ordinary meaning relies
11 on the disclosures of -- of the '911 Patent as
12 well.

13 So I just apply the plain and ordinary
14 meaning to the extent that there is some -- to
15 look at examples of how the claim terms could be
16 met.

17 And in my opinion, the detection surface
18 area of Figure 11B that has been pointed to by
19 Apple would be the area shown in blue in
20 Figure 11B.

21 Q Your plain and ordinary meaning
22 interpretation is in light of the -- in light of

1 the '911 specification?

2 A I've reviewed the '911 Patent and the
3 intrinsic record, and I believe that my view of
4 how a person of ordinary skill in the art would --
5 would look at Abdul-Hafiz, and they would
6 understand that the blue areas of Figure 11B are
7 the detection surface area of Abdul-Hafiz.

8 Q Is that also the case for the '911 Patent,
9 that it's only the areas that -- through the
10 shield -- it's only the areas where the shield
11 would permit light to reach the areas of the
12 detector?

13 MR. WENTZEL: Objection; vague.

14 A I don't have an opinion with respect to
15 the '911 in my declaration. So I don't -- I don't
16 want to comment on that.

17 Q (By Ms. Leung) But did you not form your
18 interpretation of detection surface area in the
19 context of the '911 Patent specification?

20 A As I said, I did not offer -- I -- I did
21 do that and -- but I've not offered a specific
22 opinion on certain embodiments of the '911 -- '911

1 Patent.

2 I did not offer any opinion in my
3 declaration. And if asked and allowed, I may do
4 that in the future. But as a part of my
5 declaration, I have not done that.

6 Q So, sitting here today, you can't point me
7 to anything in the '911 Patent specification that
8 supports your interpretation of detection surface
9 area that you have here in paragraph 87 of your
10 declaration?

11 A As I said, I believe that I did not offer
12 a specific analysis of the different embodiments
13 of the '911 Patent.

14 I don't have a specific opinion on that as
15 a part of my declaration unless you can point to
16 me something in my declaration that identifies my
17 discussions on the '911.

18 So I -- I don't have it as a part of this
19 current declaration. But if asked and allowed, I
20 may do so in the future.

21 Q Can you turn to paragraph 84 of your
22 declaration, which is on page 48.

1 A Okay.

2 Okay. It's part of section (a), which is
3 titled "Abdul-Hafiz's Figures Do Not Disclose The
4 Precise Dimensions Or Sizes That Apple Relies Upon
5 (sic)," starting on page (sic) 82.

6 Q Right. So in your opinion, when is it
7 appropriate to rely on figures as drawn to
8 scale -- precise and drawn to scale?

9 MR. WENTZEL: Objection; calls for a legal
10 conclusion.

11 A My understanding is that, as I described
12 in paragraph 84, from a technical point of view,
13 whatever is disclosed in Abdul-Hafiz is what I've
14 discussed in my report from a technical point of
15 view.

16 But my understanding is based on the
17 guidance from the counsel that "patent figures
18 should not be interpreted as precise and drawn to
19 scale unless otherwise stated."

20 So therefore, I relied in addition to my
21 technical analysis, guidance from the counsel that
22 the patent figures should not be interpreted as

1 precise and drawn to scale unless otherwise
2 stated.

3 Q (By Ms. Leung) So what kind of statement
4 would need to be in the publication for you to
5 interpret the drawings as precise and drawn to
6 scale?

7 A Again, based on the legal guidance from a
8 technical review, one of ordinary skill in the art
9 would understand that Abdul-Hafiz never discloses
10 that its figures are drawn to scale.

11 And further, I understand that the
12 petitioner has never argued otherwise.

13 Q What would Abdul-Hafiz have to say for a
14 person of ordinary skill in the art to be able to
15 interpret the drawings as precise and drawn to
16 scale?

17 MR. WENTZEL: Objection; asked and
18 answered.

19 A From a technical point of view, I've not
20 seen anything in Abdul-Hafiz that discloses --
21 that Abdul-Hafiz discloses that its figures are
22 drawn to scale.

1 Q (By Ms. Leung) So what --

2 A I don't know what would be sufficient.

3 But based on the legal guidance I've been offered
4 by the counsel, it is my understanding that patent
5 figures should not be interpreted as precise and
6 drawn to scale unless otherwise stated. But
7 there's no such statement in Abdul-Hafiz that the
8 figures are drawn to scale.

9 Q Would Abdul-Hafiz have to say the figures
10 disclosed or illustrated herein are drawn -- are
11 precise and drawn to scale for you to rely on
12 those figures as being precise and drawn to scale?

13 MR. WENTZEL: Same objection; asked and
14 answered.

15 A As I said, I mean Apple -- in my review of
16 the petition and the documents in this matter, I
17 don't believe Apple has ever argued that the
18 figures are drawn to scale.

19 Further, my own technical review shows
20 that Abdul-Hafiz never disclosed that its figures
21 are drawn to scale.

22 I've been told by counsel that patent

1 figures should not be interpreted as precise and
2 drawn to scale unless otherwise stated. I can't
3 tell more than that.

4 I defer to the language in my declaration.

5 Q (By Ms. Leung) So can we turn to
6 Abdul-Hafiz, which is Exhibit 1004 in this
7 proceeding. If you don't have a copy in front of
8 you, there is one available for download at the
9 link.

10 (Deposition Exhibit 1004, Previously
11 Marked.)

12 A Okay. I've downloaded Abdul-Hafiz, which
13 is Exhibit 1004.

14 Q Can you look at paragraph 20 of
15 Abdul-Hafiz.

16 A One second.

17 Okay.

18 Q So paragraph 20 says that "FIGS. 6A-B are
19 detailed side views of alternative embodiments of
20 a low noise optical housing enclosing a detector."

21 Is that language sufficient for a POSITA
22 to interpret Figures 6A-B as precise and drawn to

1 scale?

2 A No, I don't believe so because it just
3 shows that it is identifying the various
4 components.

5 It does not state that the figure is drawn
6 to scale.

7 Q Can we look at paragraph 26.

8 A 26, okay.

9 Q So paragraph 26 says, "FIGS. 10A-C are
10 detailed perspective views of an unassembled, a
11 partially assembled, and a fully assembled EMI
12 shield, respectively, prior to low noise optical
13 housing installation."

14 Is that language in Abdul-Hafiz sufficient
15 for a POSITA to interpret Figures 10A-C as precise
16 and drawn to scale?

17 A No. As I mentioned, from a technical
18 point of view, these just show the different
19 components of the assembly.

20 This does not tell me or state that the
21 figures are drawn to scale.

22 Q The same question for paragraph 27 of

1 Abdul-Hafiz, which says, "FIGS. 11A-B are detailed
2 top and bottom views of a neonate or infant sensor
3 optical assembly."

4 Is that language sufficient for a POSITA
5 to interpret Figures 11A-B as precise and drawn to
6 scale?

7 MR. WENTZEL: Going to object to this
8 whole line as asked and answered.

9 A So I'm looking at Figures 11A and 11B.
10 Yeah, as I said, no. The answer is no.

11 And the figures refer to the details of
12 the various components. They are not -- they
13 don't tell me that -- from a technical point of
14 view that they're drawn to scale.

15 Q (By Ms. Leung) And paragraph 28 says,
16 "FIGS. 11C-E are detailed top views of an adult or
17 pediatric sensor optical assembly."

18 Is that language sufficient for a POSITA
19 to interpret Figures 11C-E as precise and drawn to
20 scale?

21 MR. WENTZEL: Again, asked and answered.

22 A Again, the same answer, Counsel, that they

1 don't tell me that the figures are drawn to scale.
2 They just tell me that they contain a detailed
3 description of the various components -- detailed
4 listing of the components.

5 Q (By Ms. Leung) Can we turn to your
6 declaration at paragraph 53. That's on page 31.

7 A Okay.

8 Q At paragraph 53, you discuss the Masimo
9 LNOP sensor; is that right?

10 A Yes.

11 Q Do you know if the Masimo LNOP Adhesive
12 ADT sensor is disposable?

13 A I believe that it is disposable.

14 The -- sorry -- the LNOP sensor that we
15 are discussing in the -- discussed in Abdul-Hafiz
16 is disposable.

17 Q Well, is the actual LNOP Adhesive ADT
18 sensor here that you discuss here in paragraph 53
19 that embodies Abdul-Hafiz -- is that also
20 disposable?

21 A I understand that Apple has taken a
22 position that the LNOP Adhesive ADT sensor is

1 embodied by Abdul-Hafiz. And I have discussed my
2 opinions on that, that there is a suitable marking
3 as a part of paragraph 53.

4 So it is a very cheap, disposable sensor
5 that has been marketed by Masimo as early as, I
6 believe, in the 2005 time frame -- 2005 or 2006
7 time frame.

8 Q And you cite Exhibit 2043 here, or your
9 statement that Abdul-Hafiz -- or "the patent
10 issuing from Abdul-Hafiz covers the Masimo LNOP
11 Adhesive ADT sensor"; is that right?

12 A That is what the patent marking website of
13 Masimo, which is Exhibit 2043, shows.

14 (Deposition Exhibit 2043, Previously
15 Marked.)

16 Q If you open Exhibit 2043 -- or download
17 and open it -- can you tell me how many patents
18 the Masimo's website lists as covering the Masimo
19 LNOP Adhesive ADT sensor?

20 A Which exhibit should I go to?

21 Q Exhibit 2043.

22 A Okay.

1 MR. WENTZEL: Going to object as this is
2 completely irrelevant.

3 A 2043. Yeah, there are so many exhibits
4 here.

5 Okay. So I found Exhibit 2043, and I'm
6 downloading it.

7 Okay. I've downloaded Exhibit 2043.

8 And what is your question again, Counsel?

9 Q (By Ms. Leung) Can you tell me how many
10 patents the Masimo website lists as covering the
11 Masimo LNOP Adhesive ADT sensor?

12 MR. WENTZEL: Objection; relevance and
13 beyond the scope.

14 A The document speaks for itself, and you're
15 referring to -- it's "Covered by or for use under
16 one or more of the following U.S. patents." So it
17 lists a number of U.S. patents.

18 And it also describes -- for the LNOP
19 Adhesive on the next page, which is page number 2
20 of the exhibit, "Covered for (sic) or for use
21 under one or more of the following U.S. patents."
22 It lists about 10 or 12 patents.

1 So it's talking about one or more of a
2 list of patents.

3 Q (By Ms. Leung) Have you reviewed all of
4 the listed patents to determine what aspects of
5 the LNOP Adhesive ADT sensor they cover?

6 MR. WENTZEL: Objection; relevance,
7 outside the scope of his declaration.

8 A I don't believe I've offered an opinion on
9 that issue unless you can point to me somewhere in
10 my declaration.

11 My understanding is that based on my
12 review of Abdul-Hafiz that it is a -- it resulted
13 in an issued patent, 7096054, which I understand
14 covers the Masimo LNOP Adhesive ADT sensor.

15 Q (By Ms. Leung) Okay. Let's turn to your
16 declaration, paragraph 74.

17 A Which page is it?

18 Q Page 42.

19 A Okay. 74. I am on page (sic) 74, which
20 is a section that says, "Apple Fails To Establish
21 Any Reference Discloses A Light Block With 'Only
22 One Opening'" with respect to independent Claims 1

1 and 19.

2 Q So in paragraph 74, you say,
3 "Abdul-Hafiz's (sic) discloses a shielded detector
4 assembly (1000)," and you cite to
5 paragraphs 39-41, in addition to Figures 6, 7, 9,
6 11 in paragraphs 45-48.

7 But can we look at paragraphs 39 to 41 of
8 Abdul-Hafiz?

9 THE STENOGRAPHER: Just a reminder,
10 Counsel, when we're reading, we all tend to speed
11 up a bit. So if we could just pace for the
12 record. Thank you.

13 MS. LEUNG: Sure.

14 A You said paragraph 39 of Abdul-Hafiz?

15 Q (By Ms. Leung) Correct, paragraphs 39
16 to 41 of Abdul-Hafiz.

17 A Okay. I am on -- at paragraph 39 of
18 Abdul-Hafiz, which is Exhibit 1004.

19 Q So can you read paragraph 39 to yourself.

20 A Okay.

21 Q Does paragraph 39 describe what material
22 the EMI shield is made of?

1 A I believe that it's described in
2 paragraph 77 that Dr. Kenny admitted in his
3 deposition that the EMI shield in Abdul-Hafiz
4 detector would block at least some of the light
5 reaching the underlying detector.

6 I was referring to his deposition
7 testimony, paragraph -- pages 109, 110, 111, 112,
8 115, 160.

9 And I also described that, in my opinion,
10 a person of ordinary skill in the art would
11 understand that the EMI shield, which is 1005
12 and 1010, in Abdul-Hafiz detector assembly 1000,
13 blocked at least some of the stray light from
14 reaching the detector because such EMI shielding
15 is normally made of optically opaque material such
16 as copper.

17 And I refer to Exhibit 2080, pages 105
18 and 106, 112, and Exhibit 1004, Figures 10, 11,
19 and pages -- and paragraphs 46 to 47.

20 Q Does paragraph 46 say that EMI shielding
21 is normally made of optically opaque material such
22 as copper?

1 A A person of ordinary skill in the art
2 would understand that the EMI shield would
3 typically be -- typically be -- block the light.

4 And it would be built of something
5 constructed of normally opaque material such as
6 copper.

7 Q So paragraph 46 doesn't actually say that;
8 is that correct?

9 A Paragraph 46 and 47, they describe that --
10 they describe how the shield is covering the
11 detector; how it is actually folded over, enclosed
12 to the detector -- they folded over the sides and
13 the back of the detector; that it encloses the
14 detector very closely. And, therefore, it would
15 be understood by one of ordinary skill in the art
16 that this would -- as confirmed again by
17 Dr. Kenny -- that this would be optically opaque.

18 Q But paragraphs 46 and 47 don't say EMI
19 shielding is normally made of optically opaque
20 material such as copper; is that right?

21 MR. WENTZEL: Objection; asked and
22 answered.

1 A I believe that one of ordinary skill in
2 the art reading would understand that an EMI
3 shield is typically a sort of Faraday cage, some
4 sort of cage of metal that can -- can protect from
5 electromagnetic interference. And one of ordinary
6 skill in the art would also understand from the
7 discussion and the disclosure of paragraphs 46
8 and 47 that it's normally some metallic material
9 that typically is copper, and it was also
10 confirmed by Dr. Kenny.

11 Q (By Ms. Leung) Can EMI be shielded without
12 blocking light?

13 MR. WENTZEL: Objection; outside the
14 scope.

15 A As I said, Counsel, that I offered an
16 opinion with respect to the shields of
17 Exhibit 1004 based on the petition that Apple has
18 proposed in this matter.

19 My opinions are restricted to the
20 discussions that I've done in my declaration with
21 respect to Abdul-Hafiz.

22 I don't offer general statements.

1 Q (By Ms. Leung) So you don't have an
2 opinion as to whether EMI can be shielded without
3 blocking light, then?

4 A Not in my declaration, and I don't have --
5 that's not something that -- again, that depends
6 on the type of reference you're looking at.

7 I've looked at Abdul-Hafiz and looked at
8 the petition of Apple. And Apple does not propose
9 removing the EMI shield. And a person would
10 understand that in the context of Exhibit 1004, as
11 confirmed by Dr. Kenny, that Abdul-Hafiz detector
12 assembly would block at least some of the light,
13 as he confirmed in his deposition, Exhibit 2080,
14 pages 109 through 115.

15 And I agree that, with respect to the
16 Abdul-Hafiz, Exhibit 1004, the EMI shielding would
17 normally be made of optically opaque material such
18 as copper.

19 Q Are you aware of transparent EMI shields?

20 MR. WENTZEL: Objection; outside the
21 scope.

22 A As I said, I don't have an opinion on that

1 issue in my declaration.

2 Q (By Ms. Leung) Would you like to take a
3 break now, Dr. Madiseti?

4 A Yes, I can take a five-minute break.

5 MS. LEUNG: Okay. Why don't we go ahead
6 and take a five-minute break.

7 (Recess from 1:02 p.m. to 1:08 p.m.)

8 Q (By Ms. Leung) Dr. Madiseti, can we turn
9 to your declaration, paragraph 81, which is on
10 page 46.

11 A Okay. I'm on paragraph 81, which says
12 that "Apple Fails To Establish Any Reference
13 Discloses An Opening/Window With An Area Smaller
14 Than A Detection Surface Area Of The At Least One
15 Detector."

16 Q And in paragraph 81, you say, "Apple
17 relies on the aperture (470) in Abdul-Hafiz's
18 optical housing (400) as the 'opening'/'window' in
19 its grounds."

20 In this paragraph, you're not disputing
21 that the aperture (470) satisfies the claimed
22 "opening"/"window," correct?

1 MR. WENTZEL: Objection; misstates the
2 testimony.

3 A What is your question, Counsel?

4 Q (By Ms. Leung) You're not disputing that
5 the opening -- that the "opening"/"window" -- or
6 that the aperture (470) satisfies the claimed
7 "opening"/"window"; is that right?

8 MR. WENTZEL: Objection; misstates the
9 document.

10 A It is my opinion that Abdul-Hafiz does not
11 disclose an "opening"/"window" with an area
12 smaller than a detection surface area of at least
13 one detector for the various numerous reasons I
14 explain below.

15 So I dispute that there is an
16 "opening"/"window." I dispute that the alleged
17 "opening"/"window" is having an area smaller than
18 the detection surface area of the at least one
19 detector for all the reasons that I discuss in my
20 declaration.

21 Q (By Ms. Leung) So the aperture (470) in
22 Abdul-Hafiz's optical housing is not an

1 "opening"/"window"?

2 MR. WENTZEL: Objection; vague, misstates
3 his testimony.

4 A As I said, I mean, I defer to the language
5 in my declaration that, in my opinion, Abdul-Hafiz
6 does not disclose an "opening"/"window" with an
7 area smaller than the detection surface area of at
8 least one detector for the numerous reasons that I
9 explain below. And I continue paragraphs 82
10 onwards, till around -- for the next few pages.

11 Q (By Ms. Leung) So in paragraph 82 you
12 reproduce Apple's annotation of Abdul-Hafiz's
13 Figure 6A on page 47 of your declaration.

14 Do you see that?

15 A At the top of page 47, I identify Apple's
16 petition, page -- I believe -- petition at 50.
17 And I put an annotated diagram where Apple has
18 annotated Figure 6A.

19 Q So in this annotated Figure 6A, there's a
20 green line drawn to annotate the length of the
21 active area of the detector.

22 Do you see that?

1 A That is not correct. That is Apple's own
2 annotation. It's not mine.

3 As I disputed, I showed that the active
4 area of the detector is -- is different.

5 And as I described in many different
6 paragraphs, in Figure 11B, the active area is
7 shown by the blue-shaded portions that receive the
8 light through the shield because Apple improperly
9 ignores Abdul-Hafiz disclosure, paragraph 87.

10 And in paragraph 89, I show that the
11 alleged "opening"/"window" is actually larger than
12 the detection surface area for several reasons, as
13 I discuss in my declaration.

14 Q Can you see the green line in Apple's
15 annotation of Figure 6A?

16 A Yes.

17 Q Do you see the blue thick line in Apple's
18 annotation of Figure 6A?

19 A Yes.

20 Q Does the green line appear longer than the
21 blue line?

22 A As I said, I disagree that the claim

1 limitations are met for the reasons I discuss in
2 the declaration. I don't have any other opinion.

3 Q So you have no opinion as to whether the
4 green line is longer than the blue line?

5 A It is my opinion that there is no claimed
6 "opening"/"window" as discussed in the claims for
7 the reasons that are discussed in the declaration.

8 It is my opinion that the active area is
9 not as shown in the figure. There are many
10 disagreements that I've described in my
11 declaration.

12 Q But you haven't actually answered my
13 question.

14 Does the green line appear longer than the
15 blue line?

16 MR. WENTZEL: Objection; asked and
17 answered.

18 A As I said, I don't have an opinion on
19 that. The figures are not drawn to scale.

20 Apple has, in a self-serving manner, drawn
21 its own depiction. So I would dispute that the
22 figures are even -- that the figures, in my

1 opinion, and as confirmed by the PTAB and the
2 Board, the dimensions are not to be inferred from
3 the figures.

4 So I would disagree with you.

5 Q (By Ms. Leung) Let's turn to paragraph 86
6 of your declaration.

7 A Okay.

8 Q So in paragraph 86, you say, "Additionally
9 Apple states that FIG. 3 of Abdul-Hafiz 'more
10 clearly shows that the aperture 322 has a smaller
11 length than the length of the detector 310.'"

12 Did I read that correctly?

13 A You forget the quotes. So Apple states
14 that it -- "Apple states that FIG. 3" -- so that's
15 Apple's assertion that I don't believe is correct.

16 Q So you're saying now that Apple's
17 assertion that Figure 3 more clearly shows that
18 the aperture 322 has a smaller length than the
19 length of the detector 310.

20 You're saying now that you dispute that
21 assertion?

22 A Insofar as to its relevance with respect

1 to its petition, Figure 3 is a different
2 embodiment. It does not include the
3 aperture (470). It does not include the
4 photodiode (821) of Abdul -- of Apple's alleged
5 combinations and grounds.

6 Further, it is describing optical noise
7 sources and a prior art in reduced noise sensor.
8 And, in any case, Apple does not propose combining
9 these different embodiments or articulate any
10 motivation for doing so.

11 Q But you're not disputing that Figure 3
12 more clearly shows that the aperture 322 has a
13 smaller length than the length of the
14 detector 310; is that right?

15 MR. WENTZEL: Objection; asked and
16 answered.

17 A As I said, I disagree that this is
18 relevant to the inquiry here.

19 This is -- appears to be a new opinion.
20 Apple has not proposed such combination with these
21 other embodiments, nor do these embodiments
22 include an aperture (470) or a photodiode (821) of

1 the -- of at least Apple's Abdul-Hafiz + Raley
2 combination, Raley with R-a-l-e-y, as I describe
3 in paragraph 86.

4 Q (By Ms. Leung) So let's turn to the next
5 paragraph, paragraph 87. Let's look at the figure
6 you have on page 50 of your declaration, where
7 you've shaded the visible portion of the EMI
8 shield (1005, red) in this figure. And then
9 the -- the portions of the detector that are
10 visible through the EMI shield red, blue in this
11 figure?

12 A I would defer to the language in
13 paragraph 87 as describing my opinions.

14 So your question uses -- to the extent
15 your question uses language that is not from my
16 paragraph 87, I would rely and depend and defer to
17 the language in paragraph 87 to describe
18 Figure 11B that's annotated.

19 Q Okay. So in paragraph 87, you say, "a
20 fixed EMI shield (1005, red)." That's what you've
21 annotated in Figure 11B, right?

22 A I say that "a fixed EMI shield (1005, red)

1 that blocks light from reaching all but four areas
2 of the underlying photodiode (820/821, blue)," and
3 I show that.

4 And I say that the EMI shield, which
5 includes the fixed shield 1005, is directly folded
6 over the detector to create the EMI shield at
7 detector assembly (1000) and a person of ordinary
8 skill would understand that the four blue areas
9 shown above are the detection surface area of the
10 detector photodiode because the shield only
11 permits light to reach those four areas of the
12 detector.

13 Q And what is 470 in Figure 11B there?

14 A Abdul-Hafiz calls it -- the -- an aperture
15 that includes a fixed EMI shield.

16 Q So the red shading of the fixed EMI shield
17 stops at the boundary of the aperture (470).

18 Is -- is that what your figure's showing here?

19 MR. WENTZEL: Objection; misstates his
20 testimony.

21 A I would defer to the language in my
22 declaration that says that apertures --

1 Abdul-Hafiz aperture (470) includes a fixed EMI
2 shield (1005) in red.

3 Q (By Ms. Leung) So the EMI shield -- in
4 Figure 11B that you annotated here, you've only
5 shaded the EMI shield up to the aperture (470); is
6 that right?

7 A I've stated here that the annotation in
8 Figure 11B shows Abdul-Hafiz aperture (470) that
9 includes the fixed EMI shield that blocks light in
10 all but four areas of the underlying photodiode
11 that are shown in blue.

12 Q So the way that you have the EMI shield
13 shaded here in red, does the surface extend to at
14 least the boundary of the aperture (470)?

15 MR. WENTZEL: Objection; vague.

16 A My opinion which is captured in my
17 declaration is that the aperture (470) includes
18 the fixed EMI shield (1005) shown in red.

19 Q (By Ms. Leung) Does your red shading
20 represent the entire surface of the EMI
21 shield (1005)?

22 MR. WENTZEL: Objection; asked and

1 answered.

2 A Again, I -- I'm not sure what you're
3 referring to, using the word "entire" and all
4 that.

5 I -- I defer and rely upon the language
6 saying that the aperture (470) includes fixed EMI
7 shield, which is shown in red.

8 Q (By Ms. Leung) Are there portions of the
9 surface of the EMI shield (1005) that is not
10 visible in Figure 11B?

11 A The -- the EMI shield is -- as described
12 in Abdul-Hafiz -- is in the petition, and the
13 figures relied upon by Apple are as described in
14 my declaration.

15 Q Do you describe in your declaration if
16 there are portions of the surface of the EMI
17 shield (1005) that is not visible in Figure 11B?

18 A So we're looking at Figure 6A.

19 Is that what you want me to look at?

20 Q I'm asking you if -- where in your
21 declaration you describe if there are portions of
22 the surface of the EMI shield (1005) that is not

1 visible in Figure 11B.

2 Would that be Figure 6A?

3 A I'm not sure what you're asking. So what
4 I'm saying is that, as I describe in my
5 declaration, the aperture (470) includes the --
6 the fixed EMI shield (1005) in red that blocks
7 light in all but the four areas.

8 So that is the basis of my analysis in
9 paragraph 87.

10 Q And you don't know if there are portions
11 of the surface of the EMI shield (1005) that is
12 not visible in Figure 11B?

13 MR. WENTZEL: Objection; asked and
14 answered, misstates his testimony.

15 A Again, I would defer to the disclosure
16 of 1004 itself, which is Abdul-Hafiz, and how the
17 shield may be wrapped around and things like that.

18 But as a part of my analysis of
19 paragraph 87, in my opinion, the aperture (470)
20 includes a fixed EMI shield (1005) shown in red
21 that blocks light from reaching all but four areas
22 of the underlying photodiode shown in blue.

1 Q (By Ms. Leung) So you say Abdul-Hafiz's
2 aperture (470) includes a fixed EMI shield (1005,
3 red).

4 Does that mean that the fixed EMI
5 shield (1005, red) spans the entire
6 aperture (470)?

7 MR. WENTZEL: Objection; vague, asked and
8 answered multiple times.

9 A As I said -- yeah, as I said here, it
10 blocks -- I would say -- as I said here, the
11 aperture (470) includes a fixed EMI shield shown
12 in red that blocks light from reaching all but
13 four areas of the underlying photodiode that I
14 show on page 50.

15 Q (By Ms. Leung) So the fixed EMI
16 shield (1005, red) blocks the light that passes
17 through the aperture (470) except in the four
18 areas of the underlying photodiode (820/821,
19 blue); is that right?

20 A I've said clearly many times that the
21 aperture (470) includes a fixed EMI shield (1005,
22 red) that blocks light from reaching all but four

1 areas of the underlying diode --
2 photodiode (820/821).

3 So I rely on my language as precisely
4 described in this -- in paragraph 87 that the
5 aperture includes a fixed EMI shield that blocks
6 light from reaching all but four areas that are
7 shown in blue.

8 Q Can we look at your declaration,
9 paragraph 94.

10 A Okay. I'm on page --

11 Q On page 53.

12 A -- 53 and 54, which belongs to the section
13 that says, "Apple Improperly Assumes a Detection
14 Surface Area From Abdul-Hafiz," Exhibit 1004,
15 "Figures."

16 Q On the bottom of page 53, you say,
17 "FIGS. 10A-10B shows that the detector has a
18 non-square rectangular shape"; is that right?

19 A I say that it has a -- that Figures 10A
20 and 10B -- first of all I dispute that Abdul-Hafiz
21 discloses precise dimensions or sizes.

22 But to the extent that Apple argues that

1 the detector is square or rectangular, I posit
2 here that Apple's assumption is wrong. It is not
3 square. It's actually rectangular.

4 Q And then on the next page, 54, you show
5 the EMI shield wrapped around -- wrapped -- the
6 process of wrapping the EMI shield around the
7 detector in Figures 10A and 10B; is that right?

8 A I just referred to Figures 10A and 10B to
9 show that it's a rectangle. I don't show anything
10 else.

11 Q So Figures 10A and Figures 10B also show
12 the EMI shield (1010); is that right?

13 A They show a lot of components, and I do
14 not use this figure for commenting on -- on those
15 aspects for this section.

16 I show that it is a rectangular shape.

17 Q So after the detector is enclosed in the
18 EMI shield, would that EMI-shielded detector
19 assembly also have a rectangular shape?

20 A As I said, you're using a lot of words
21 that are not in my declaration. I don't have a
22 specific opinion on the question as you put it.

1 I used the figure. You're using words
2 like wrapped and all that. In my opinion, I
3 provided adequate disclosure of my opinions in
4 earlier sections.

5 Here, I'm commenting that even to the
6 extent that Apple argues that somehow the
7 dimensions are disclosed in Abdul-Hafiz, Apple is
8 incorrect in assuming that the shape is a square.
9 It is a rectangle. That's all I'm saying.

10 Q So you have no opinion as to whether the
11 EMI-shielded detector is a square or rectangle?

12 MR. WENTZEL: Objection; misstates his
13 testimony.

14 A As I said, all I'm saying is that the
15 shape that is pointed to where Apple is not
16 square, it's rectangular, for the reasons that are
17 described in the section, which is paragraphs 92
18 onwards, for the reasons that I discuss and for
19 the language that I use in this section.

20 Q (By Ms. Leung) Does enclosing the detector
21 in the EMI shield change its shape?

22 MR. WENTZEL: Objection; outside the

1 scope.

2 Sorry.

3 A Yeah, I'm sorry.

4 As I said, my opinion is one of ordinary
5 skill in the art would understand that the shape
6 here is a rectangle and Apple is incorrect in
7 assuming that it's a square for the reasons as
8 stated in paragraphs 94 and 95.

9 Q (By Ms. Leung) Let's go to your
10 declaration, paragraph 153.

11 A Which page is that?

12 Q Page -- starting on page 88.

13 A Okay. Thank you. I'm on page 88, which
14 is a section that says, "Abdul-Hafiz Does Not
15 Motivate Or Even Suggest Apple's Proposed
16 Modification Of The Abdul-Hafiz + Raley Sensor."

17 Q In paragraph 153, you say that
18 "Abdul-Hafiz does not disclose or suggest
19 otherwise in FIGS. 11A-E. Instead, those
20 embodiments simply describe techniques that allow
21 two sensors, each of which is for one patient
22 size/tissue thickness only, to 'be manufactured

1 from a single flex circuit part.'" "

2 And you cite Abdul-Hafiz paragraphs 47
3 and 49.

4 A Yes, it's a disposable sensor. It is just
5 designed for one patient size and tissue thickness
6 only. And it's manufactured from a single flex
7 circuit.

8 Q Why would Abdul-Hafiz provide these
9 techniques that allow two different sensors to be
10 manufactured from a single flex circuit part?

11 MR. WENTZEL: Objection; vague.

12 A I'm not sure what you're asking.
13 Abdul-Hafiz is a cheap low-cost disposable sensor
14 that costs about 15 to \$20.

15 Reusable sensors are very expensive. I
16 mean, they can be as much as \$200 or more.

17 And so you're trying to build something
18 that is one-tenth of the cost of a reusable
19 sensor.

20 A reusable sensor would typically be
21 designed to accommodate multiple patients, and
22 that's not Abdul-Hafiz. Abdul-Hafiz is a

1 disposable sensor, a low-cost one, that just
2 has -- that's designed for one patient.

3 Q (By Ms. Leung) In the next sentence you
4 say FIGS. 11A-B describe a technique that allows
5 one flex circuit to be made into (1) a sensor
6 'appropriate for a neonate' and (2) a sensor
7 'appropriate for an infant.'"

8 A Yes, these are for separate patients in
9 paragraph 47.

10 Q So Abdul-Hafiz is allowing one -- allowing
11 one flex circuit to be made into two different
12 sensors: one, a sensor appropriate for a neonate
13 and, two, a sensor appropriate for an infant; is
14 that right?

15 A I mean, it's as I describe in
16 paragraph 153; that Figures 11A, and 11B, they
17 describe two sensors, each of which is only for
18 one patient size and tissue thickness, to be
19 manufactured from a single flex part.

20 So therefore Figures 11A and 11B describe
21 a technique that allows one flex circuit to be
22 made into a sensor appropriate for a neonate and a

1 sensor appropriate for an infant.

2 Q So are these two different sensors that
3 are made from one flex circuit part?

4 MR. WENTZEL: Objection; asked and
5 answered.

6 A I -- I would defer to the language in my
7 declaration that they describe a technique that
8 allows one flex circuit to be made into a sensor
9 that's appropriate for a neonate and a sensor
10 appropriate for an infant.

11 So these are for different patients.

12 Q (By Ms. Leung) Do these different patients
13 have different sizes?

14 MR. WENTZEL: Objection; vague.

15 A I'm not sure what you're asking.

16 Q (By Ms. Leung) Well, you say in your
17 paragraph 53 that each of which is for one patient
18 size, so is a neonate -- does a neonate have a
19 different patient size than an infant?

20 A But this -- my opinion is that the sensor
21 is just one -- the sensor for the neonate is
22 different from the sensor for an infant.

1 So the techniques described in 1040, they
2 don't allow the sensors to accommodate -- a
3 particular sensor to accommodate multiple patient
4 sizes or tissue thicknesses.

5 So a single sensor of Abdul-Hafiz would
6 not accommodate different patient sizes, but it
7 allows a manufacturing of two different sensors:
8 The first sensor for an infant, the other sensor
9 for a neonate.

10 But the same sensor would not accommodate
11 different patient sizes. So Abdul-Hafiz does not
12 even suggest that a single sensor of what it
13 teaches could be used for two different patient
14 sizes.

15 It says you can design one sensor for a
16 neonate and a different -- another different
17 sensor for an infant.

18 Q (By Ms. Leung) Why would you need one
19 sensor for a neonate and another different sensor
20 for an infant?

21 MR. WENTZEL: Objection; outside the scope
22 of his declaration.

1 A It is a manufacturing issue here.

2 So you can design a flex circuit and build
3 different sensors. Different patients get a
4 different sensor. The same sensor does not work
5 for multiple patients. It's a throwaway sensor.
6 It's against the objective and goal and reason and
7 purpose of Abdul-Hafiz.

8 It's a low-cost sensor that is throwaway.
9 So you design it for one specific patient, which
10 could be a neonate and another sensor for another
11 patient, which is an infant, for example.

12 Q (By Ms. Leung) Are you saying that each
13 sensor is designed for a specific patient?

14 MR. WENTZEL: Objection; misstates his
15 testimony.

16 A All I say is what I said in paragraphs 152
17 and 153, Counsel, and they rely on the language
18 that one of ordinary skill in the art would not
19 understand that a single sensor of Abdul-Hafiz
20 could accommodate different patient sizes.

21 You would have a different sensor for a
22 different patient because it's a disposable

1 sensor.

2 Q (By Ms. Leung) Dr. Madisetti, are you
3 aware of the Wands factors?

4 A Could you spell?

5 Q W-a-n-d-s.

6 A I vaguely recall them, but are you
7 referring to a portion of my declaration?

8 Q Are you generally -- are you aware of
9 them? Have you heard of the Wands factors as an
10 expert?

11 A I believe at some point. I don't recall
12 specifics. I don't believe that it was a
13 technical issue, but it maybe had been more a
14 legal issue. But, again, my recollection is
15 somewhat dim.

16 But it does ring a bell somewhere.

17 Q Can we go to your declaration,
18 paragraph 108, that is on page 61?

19 A 108, okay.

20 Q And the last sentence of paragraph 108,
21 you say, "Specifically, in my opinion, the
22 teachings of Raley (and Apple's other prior art)

1 are challenged because none of that prior art
2 enabled a person of ordinary skill in the art to
3 measure the identified analytes using only four
4 different wavelengths of light."

5 What are the identified analytes you're
6 referring to in this sentence?

7 A What Apple pointed to.

8 Q And what is your understanding of what
9 Apple pointed to?

10 A I mean, I would have to refer to Apple's
11 petition and declaration.

12 Apple used, in its motivation to combine,
13 allegations that these references somehow were
14 enabled. I believe that -- I -- in my technical
15 opinion and based on my knowledge and
16 understanding and based on all the evidence that
17 I've seen on the record, even now, 10 to 15 years
18 later, you cannot identify the -- Apple's
19 identified analytes, using four different
20 wavelengths of light.

21 None of the prior art, none of the
22 companies that were associated with the prior art

1 have ever brought a product. These are
2 aspirational and not enabled for the reasons that
3 I cite with evidence in my declaration.

4 Q Do you name the identified analytes in
5 your declaration?

6 A I refer to Apple's motivation to combine,
7 and I believe I referred to -- in paragraph 107,
8 that "Apple proposes modifying Abdul-Hafiz's
9 two-wavelength pulse oximeter based on Raley into
10 a four-wavelength sensor that measures 'three or
11 more' or 'at least four' blood analytes including
12 oxygen saturation, carboxyhemoglobin, and
13 methemoglobin."

14 And I refer to petition -- Apple's
15 petition, 15 through 20 and 55 through 59.

16 Therefore, measuring at least oxygen
17 saturation, carboxyhemoglobin, and methemoglobin
18 is central to each of Apple's alleged motivations
19 to modify Abdul-Hafiz based on Raley.

20 Q Well, is it your understanding that the
21 identified analytes are oxygen saturation,
22 carboxyhemoglobin, and methemoglobin?

1 MR. WENTZEL: Objection; misstates his
2 testimony.

3 A I defer to the language in paragraph 107
4 of my declaration as capturing my opinion for the
5 reasons that I describe in that section.

6 Q (By Ms. Leung) So are you saying in
7 paragraph 107 that Apple identifies oxygen
8 saturation, carboxyhemoglobin, and methemoglobin
9 as the analytes being measured using four
10 different wavelengths of light?

11 MR. WENTZEL: Objection; misstates his
12 testimony.

13 A Again, I would refer to the language
14 of 107. "Apple proposes modifying Abdul-Hafiz's
15 two-wavelength pulse oximeter based on Raley into
16 a four-wavelength sensor that measures 'three or
17 more' or 'at least four' blood analytes including
18 oxygen saturation, carboxyhemoglobin and
19 methemoglobin. See...petition, 15-20, 55-59.
20 Therefore, measuring at least oxygen saturation,
21 carboxyhemoglobin, and methemoglobin is central to
22 each of Apple's alleged motivations to modify

1 Abdul-Hafiz based on Raley."

2 Q (By Ms. Leung) Are these the only
3 identified analytes in Apple's petition?

4 MR. WENTZEL: Objection; asked and
5 answered multiple times.

6 A As I said, I would defer to the language
7 that I read out from paragraph 107. I don't have
8 any other opinion.

9 Q (By Ms. Leung) Is oxygen saturation a
10 blood analyte?

11 A As I said, Counsel, I would refer to
12 Apple's motivation to combine, relying on these
13 alleged analytes that it cites in its petition.
14 There's nothing more I wanted to opine on.

15 Q So you have no opinion as to whether
16 oxygen saturation is a blood analyte?

17 MR. WENTZEL: Objection; relevance and
18 outside the scope of his declaration.

19 A As I said, Counsel, Apple has argued that
20 at least four blood analytes, including oxygen
21 saturation, carboxyhemoglobin, and methemoglobin
22 are central to its motivations to modify based on

1 Raley.

2 I dispute that, and I say that there has
3 been no products, even now, 15 years later, that
4 can measure these analytes with just four
5 wavelengths because of the high degree of
6 variability, the large number of unknowns, and
7 others that occur.

8 And even the companies behind these prior
9 art disclosures haven't been able to provide a
10 product even now and, therefore, confirms from a
11 technical point of view that these references are
12 not enabled as relied upon by Apple.

13 Q (By Ms. Leung) You mentioned Raley in your
14 answer. Let's turn to Raley, which is
15 Exhibit 1005 in this proceeding. If you don't
16 have a copy, there should be one at the download
17 link.

18 A Okay. I have -- I'm downloading it.

19 Okay.

20 (Deposition Exhibit 1005, Previously
21 Marked.)

22 Q Can you go to Column 3, starting at

1 line 59.

2 A Okay.

3 Q And it says, "For example, if the
4 monitor 100 is capable of measuring a plurality of
5 blood analyte concentrations such as O2Hb, RHb,
6 COHb, and MetHb." And I'm going to stop there and
7 ask you some questions about that portion of the
8 sentence.

9 What does O2Hb stand for?

10 A It would stand for oxyhemoglobin.

11 Q What does RHb stand for?

12 A It, again, stands for -- I forget the
13 exact -- exact meaning of that -- exact expansion
14 of that.

15 Q Could it be -- could RHb stand for reduced
16 hemoglobin or deoxyhemoglobin?

17 A As I said, I'm not -- I'm not sure.

18 Q What does COHb stand for?

19 A I believe that stands for
20 carboxyhemoglobin.

21 Q And what does MetHb stand for?

22 A That stands for methemoglobin.

1 Q And that portion of that sentence says, "a
2 plurality of blood analyte concentrations."

3 A plurality just means more than one; is
4 that right?

5 MR. WENTZEL: Objection; outside the
6 scope.

7 A I don't have an opinion on this particular
8 sentence.

9 Q (By Ms. Leung) So you have no opinion as
10 to what "a plurality" means?

11 A Not in the context of -- what is this --
12 disclosure of page 10 or Column 3, lines 55
13 through 65, say.

14 Because it refers to one, two, three, or
15 four different -- with an "and."

16 Q Dr. Madisetti, do you know how oxygen
17 saturation is calculated?

18 MR. WENTZEL: Objection; vague.

19 A It depends on the product, depends on the
20 application, depends on the algorithms used.
21 There are many ways.

22 Q (By Ms. Leung) In a pulse oximeter, how

1 does -- do you know how a pulse oximeter
2 calculates oxygen saturation?

3 A It depends, again, on the algorithms used,
4 the type of wavelengths, different algorithms for
5 different types of sensor configurations.

6 Q Are there any particular blood analytes
7 you would need to measure in order to calculate
8 oxygen saturation?

9 A I don't have an opinion on that. I think
10 I have provided an opinion in my declaration that
11 there is no -- there is no -- there is no
12 requirement from a technical point of view.

13 Q Can you describe one example of using
14 blood analytes to measure oxygen saturation in a
15 pulse oximeter?

16 MR. WENTZEL: Objection; vague.

17 Yeah, also outside the scope, to the
18 extent I understand what you're talking about.

19 A As I said, Counsel, in paragraph 133, I
20 say that in its institution decision, the Board
21 stated that there was a generic need to compensate
22 for oxygen saturation measurement due to presence

1 of carboxyhemoglobin and methemoglobin.

2 And in my opinion, that finding is
3 incorrect from a technical point of view. So I
4 don't see any such technical need to calculate
5 other analytes while calculating oxygen.

6 Q (By Ms. Leung) What is the minimum number
7 of wavelengths needed in a pulse oximeter to
8 calculate oxygen saturation?

9 A It all depends on the algorithms used and
10 everything else.

11 Q Could you measure oxygen saturation using
12 one wavelength?

13 A As I said, I'm not offering a general
14 opinion on oxygen saturation measurements. I'm
15 referring to the prior art raised by Apple and its
16 motivations to combine.

17 Q Can we go to Column 5 of Raley, starting
18 at line 63.

19 A Okay.

20 Q So this portion of Raley begins by
21 describing Figure 3, the Figure 3 embodiment.

22 And Raley, at line 63 (sic), says, "The

1 embodiments of FIG. 3 includes four
2 emitters, 21, 22, 23 and 24." And then at
3 line 66, Raley says, "Such an embodiment would be
4 useful in a photoplethysmographic monitor for
5 measuring three or four blood analytes such as
6 oxyhemoglobin, deoxyhemoglobin...and
7 methemoglobin."

8 Do you see that?

9 A You are reading from lines 65 through --
10 in Column 5, you're reading Exhibit 1005, which is
11 Raley from lines 65 through 68, and Column 6 from
12 lines 1 through 2.

13 Q Yes. So in line 67, Column 5, line 67 to
14 Column 6, line 1, Raley says, "three or four blood
15 analytes"; is that right?

16 A This is aspirational. It does not say
17 anything that it can do it. It just says, "would
18 be useful." So it's, to me, from a technical
19 point of view, it refers to "would" or a
20 hypothetical aspiration.

21 So it can say what it wants. As I said,
22 from a technical point of view, this is not

1 enabled by the disclosures of Raley.

2 Q But Raley doesn't say that this embodiment
3 requires measuring four blood analytes, right? It
4 just says three or four?

5 A As I said, I will not comment on what
6 Raley meant. I will just refer to the disclosure
7 of Raley.

8 It tells me here that it is aspirational
9 and it's not enabled.

10 Q So its aspiration is to measure three or
11 four blood analytes, in your opinion; is that
12 right?

13 A No, my opinion is that the language of
14 Raley speaks for itself.

15 Even now, 10 years later, 15 years later,
16 these -- there is no product out there that can do
17 what Raley aspires to do with the disclosures of
18 Raley. So Raley is not enabled.

19 MS. LEUNG: Okay. Dr. Madiseti, would
20 you like a break right now?

21 A Okay. I mean, are we going much further,
22 or is it...

1 MS. LEUNG: There's still a few questions.

2 If you need a break, I would say we'll take a
3 break now.

4 THE WITNESS: Okay. So let's take a
5 five-minute break.

6 (Recess from 2:04 p.m. to 2:12 p.m.)

7 Q (By Ms. Leung) Dr. Madisetti, let's turn
8 to your declaration, paragraph 109 on page 62.

9 A Okay. I am on paragraph 109, which is the
10 part of the section that, "Raley And The Prior Art
11 Did Not Enable Measuring Oxygen Saturation,
12 Carboxyhemoglobin, And Methemoglobin Using Only
13 Four LEDs Of Four Different Wavelengths."

14 Q So in paragraph 109, you say Masimo was
15 the first to make such a device, the Rad-57 pulse
16 CO-oximeter and that it uses eight wavelengths of
17 light?

18 A I was referring to Exhibit 2046, which is
19 Masimo's press release that it's the first device
20 to noninvasively measure carbon monoxide in the
21 blood.

22 Q Do you know if this device -- the Rad-57

1 pulse CO-oximeter, do you know if the sensor on
2 that device is disposable?

3 A I don't believe it is, but it -- exhibits
4 that I rely upon, 2047, 2048 describe that it's
5 only -- the only one prehospital device that's
6 presently capable of measuring CO and met -- the
7 Rad-57.

8 Q Does it also measure oxygen saturation?

9 A I would have to look at the documentation.
10 I believe it does, but are -- are you referring to
11 a portion of my declaration?

12 I believe that it's pulse CO-oximeter.

13 Q Well, you say that Masimo was the first to
14 make such a device, and we've been talking about
15 measuring oxygen saturation, carboxyhemoglobin,
16 and methemoglobin, so I'm asking whether Masimo's
17 device also measures oxygen saturation since
18 you've --

19 A As I --

20 Q -- already said that it measures
21 carboxyhemoglobin and methemoglobin?

22 A Again, the way I would characterize it as

1 I describe it in paragraph 109, that there is no
2 device out there that can measure these various
3 metrics using four wavelengths, even Rad-57 uses
4 eight wavelengths of light.

5 That is the main point of paragraph 109,
6 that even a product that arguably -- or through
7 its press releases -- measured certain
8 parameters -- it uses eight wavelengths.

9 So, therefore, it is additional
10 confirmation that Apple's reliance and motivations
11 to combine on its prior art are not enabled.

12 And the references, Raley and others,
13 relied upon by Apple are not reliable or enabled.
14 They're aspirational.

15 Q What features does a Rad-57 provide that
16 the Masimo LNOP sensors are lacking?

17 MR. WENTZEL: Objection; vague.

18 A I don't have an opinion on that in my
19 declaration.

20 Q (By Ms. Leung) Do you know if the Masimo
21 LNOP sensors measure carboxyhemoglobin or
22 methemoglobin?

1 MR. WENTZEL: Objection; outside the
2 scope.

3 A As I said, I don't offer an opinion on
4 that issue.

5 Q (By Ms. Leung) So in your declaration,
6 paragraph 109, you cite Exhibit 2047.

7 Can you download and open that exhibit.

8 A Okay. I have downloaded Exhibit 2047.

9 (Deposition Exhibit 2047, Previously
10 Marked.)

11 Q Okay. Hold on just a second, let me find
12 the sentence here.

13 A It shows me that it's blank.

14 Q Let me check. Did it not get uploaded
15 correctly?

16 MR. WENTZEL: There's a blank.

17 MS. LEUNG: Okay. Yeah, I see when I
18 tried to download it, it says blank too.

19 Let me see if I can send it through the
20 chat, I guess.

21 THE WITNESS: Okay.

22 MR. WENTZEL: Like, a lot of exhibits have

1 the same problem. They say blank.

2 MS. LEUNG: Looks like it didn't get
3 uploaded correctly. Okay. I'm going to send
4 Exhibit 2047 through the chat.

5 A Okay. I see that. So let me download
6 that.

7 I seem to be opening the same one.

8 Yeah, now I can see that. Okay.

9 Q (By Ms. Leung) So you have it opened?

10 A Yes.

11 Q Does Exhibit 2047 look like the one that
12 you cite here in your declaration, paragraph 109?

13 A Yeah, in reference to the Rad-57, yes.

14 Q Okay. In the first column, the first
15 page, there's a sentence two -- the third sentence
16 in the paragraph that spans the first and second
17 column, so can you -- I'm going to read the
18 sentence to you, it says, "If any other light
19 absorbers are present in the blood, the pulse
20 oximeter's calibration may be invalid."

21 Do you see that sentence?

22 A Where? Which sentence?

1 Q In the paragraph that starts on the first
2 column and goes on to the second column.

3 A Okay.

4 Q It's the third sentence. "If any other
5 light absorbers are present in the blood, the
6 pulse oximeter's calibration may be invalid."

7 Do you see that sentence?

8 A I see that sentence in that paragraph.

9 Q Do you agree with that sentence?

10 MR. WENTZEL: Objection; outside the scope
11 of his declaration.

12 A I agree that the sentence is there in the
13 paragraph, but it talks about calibration.

14 If you calibrate it right, it should work
15 properly.

16 Q (By Ms. Leung) So even in the presence of
17 other light absorbers in the blood, if you
18 calibrate the pulse oximeter correctly, it should
19 work correctly.

20 Is that what you're saying?

21 A I'm not saying anything. I'm just saying
22 that it talks only about calibration. I don't

1 offer any other opinion.

2 Q So you have no opinion as to whether you
3 agree with that sentence?

4 A All I'm saying is it's referring to
5 calibration, and calibration is not -- calibration
6 is done prior to measurement.

7 Again, I -- I don't offer any other
8 analysis of this.

9 If asked and allowed, I may do so in the
10 future. But at this point in my declaration, I
11 don't.

12 And as I said, we are talking about eight
13 wavelengths, none with four wavelengths.

14 Q So two sentences after that one, it says,
15 "The common dyshemoglobins, methemoglobin and
16 carboxyhemoglobin, have been shown to produce
17 serious errors in SpO2 readings in animal studies.
18 These errors have been confirmed in clinical case
19 reports."

20 Do you agree with those statements?

21 A Again, I would say that those are present
22 in this document. I don't have any other opinion

1 on those.

2 As I said, this is an eight-wavelength
3 instrument. It is not a four-wavelength
4 instrument.

5 Q In the second column, the first sentence
6 of the first full paragraph says, "Given the
7 life-threatening dangers of methemoglobin and
8 carboxyhemoglobin toxicity, a pulse oximeter
9 capable of measuring these dyshemoglobins would be
10 an important addition to our monitoring
11 armamentarium."

12 Do you agree with that sentence?

13 A I agree that it's published there as
14 written. I don't have any other opinions because
15 it's referring to an eight-wavelength system.

16 Q So do you agree with that sentence in
17 reference to the eight-wavelength system?

18 A As I said, I don't offer an opinion on
19 that paragraph. I'm saying that Apple's
20 motivations to combine are relying on prior art
21 that is not enabled by Raley or Secker and other
22 references and reasons Apple articulates. We are

1 not talking about something in general or a
2 hypothetical situation.

3 Q So aside from whether or not Raley is
4 enabled or any of the prior art is enabled, you
5 don't have any opinion whether methemoglobin and
6 carboxyhemoglobin toxicity is life-threatening?

7 MR. WENTZEL: Objection --

8 A I'm not sure what you're asking.

9 Q (By Ms. Leung) So in paragraph 109 of your
10 declaration, you also cite Exhibit 2046.

11 A Yes. Yes.

12 (Deposition Exhibit 2046, Previously
13 Marked.)

14 Q I don't know if that's one of the blank
15 ones, so I'll send it through the chat just in
16 case.

17 A Uh-huh.

18 Q Let me know when you have it open.

19 A Okay.

20 Q Do you recognize this Exhibit 2046 that I
21 just sent to you through the chat as the
22 Exhibit 2046 that you cited here in your

1 declaration?

2 A Yes.

3 Q On page 2 of Exhibit 2046, the second
4 paragraph on page 2, there's a second to the last
5 sentence that reads, "Since carboxyhemoglobin is a
6 toxic form that can cause death at levels greater
7 than 50 percent, the development of a pulse
8 oximeter that can separately measure
9 carboxyhemoglobin and oxyhemoglobin will be a
10 major advance in healthcare."

11 Do you see that sentence?

12 A You are referring to the page 2? Yes,
13 this article -- news item discloses that sentence.

14 Q Do you agree with that sentence?

15 A I don't have an opinion on that.

16 As I said, this is an eight-wavelength
17 scenario. It does not refer to the sentence in
18 the context of any other than an eight-wavelength
19 setup.

20 Q So as a technical expert, you have no
21 opinion as to whether carboxyhemoglobin in -- is a
22 toxic form that can cause death at levels greater

1 than 50 percent and that the development of a
2 pulse oximeter that can separately measure
3 carboxyhemoglobin and oxyhemoglobin will be a
4 major advance in healthcare?

5 A I'm not a business guy. I'm not a doctor.

6 All I'm saying from a technical point of
7 view -- that this is referring to an
8 eight-wavelength instrument and not an allegedly
9 much more inferior aspirational type of
10 capabilities of four wavelengths unless referred
11 to in Apple's prior art as a motivation to
12 combine.

13 So it's a different context, different
14 statements. So Apple's prior art is not enabled.

15 Q Let's turn to paragraph 145 of your
16 declaration on page -- starting on page 84.

17 A Okay.

18 What paragraph? 80?

19 Q 145, starting on page 84.

20 A Okay. I'm on page 84 of my declaration on
21 paragraphs (sic) 145, which is part of the section
22 that says, "Secker Describes An Approach Limited

1 To Reflectance Sensors That Would Not Have
2 Motivated a POSITA To Add More LEDs To The
3 Transmittance Sensor Of Abdul-Hafiz + Raley."

4 Q And in paragraph 145, you comment on
5 Secker's disclosures.

6 Can we go ahead and open Secker, which is
7 Exhibit 1006 in this proceeding? There should be
8 one on the download link, hopefully it's not
9 blank. Let me check also.

10 A I mean, if you can upload to chat, that
11 would be great.

12 Q Okay.

13 Okay, I'm sending it through the chat.

14 A Yeah, I can see it now. Let me download
15 it.

16 Okay. I've opened up Secker, which is the
17 United States Patent 5,188,108, Exhibit
18 Number 1006.

19 (Deposition Exhibit 1006, Previously
20 Marked.)

21 Q Okay. So in your paragraph 145 of your
22 declaration, you cite to Secker, Column 3,

1 lines 28 to 45.

2 Can we go ahead and look at that portion
3 of Secker?

4 A Yeah, that's one of the portions I cite.
5 I do cite to other portions as well, but let me go
6 to Column 3.

7 And Column 3, 28 to 45. Okay.

8 Q So in the first few sentences of that
9 paragraph, it says, "By such construction, the
10 assumptions of the theory are perfectly met."

11 And then it says, "Particularly, the
12 assumption that the length of a light path through
13 tissue cancels out because the lengths of the
14 light paths at both (or more) wavelengths are
15 equal, is fulfilled."

16 Do you see those two sentences that I just
17 read?

18 A Secker says this in the context of -- in
19 the context that is limited to reflectance sensors
20 and does not apply to transmission sensors, which
21 it calls transmission sensors.

22 So Secker says that this differing depth

1 of penetration at various wavelengths is limited
2 to reflectance sensors.

3 Raley and other prior art relied upon by
4 Apple are transmission.

5 Q So then, based on this and other
6 paragraphs, you say in the last sentence of
7 paragraph 145 of your declaration that,
8 "Accordingly, Secker describes techniques to solve
9 this reflectance problem by adding more LEDs that
10 can be 'selected such that the lengths of the
11 light paths through the human tissue at both
12 different wavelengths are substantially equal.'"

13 Is that your -- is that -- did I read your
14 opinion accurately?

15 A This is what Raley is -- this is what
16 Secker is trying to say, but Secker's is only
17 using two wavelengths. So Secker is a different
18 problem, using reflectance with only two
19 wavelengths. So it does not apply to other types
20 of sensors.

21 Q So Secker says that the length -- the
22 lengths of the light paths through the human

1 tissue at both different wavelengths are
2 substantially equal. And -- and -- sorry, let me
3 -- strike that. Let me rephrase that question.

4 Secker says that the length of a light
5 paths through tissue cancels out because the
6 lengths of the light paths of both or more
7 wavelengths are equal; is that correct?

8 A I cannot offer an independent opinion on
9 what Secker is saying.

10 All I can say is if you are reading from
11 Secker, it discloses what it says -- Secker -- but
12 this is not my opinion.

13 In my opinion, Secker is only talking
14 about transmission and talking about two
15 wavelengths. And it is referring to a particular
16 scenario that is not -- that one of ordinary skill
17 in the art would not apply, to one of ordinary
18 skill in the art for transmission sensors.

19 It's a different problem, different way,
20 much more simpler than figuration with just two
21 wavelengths for reflection.

22 Q So in paragraph 45 (sic) -- the third

1 sentence, you say, "Specifically, Secker explains
2 that in reflectance sensors, 'the depth of
3 penetration of human tissue is not identical for
4 all wavelengths, i.e., the length of the light
5 paths at various wavelengths is different.'"

6 So this -- in your opinion, this doesn't
7 apply to transmission sensors?

8 A In my opinion, Secker just describes that
9 this technique solved a reflectance problem.

10 And in transmission sensors there are many
11 different unknowns, many different calculations.
12 It's much more complicated.

13 So Secker's techniques don't apply.

14 Q So you said transmission sensors are much
15 more complicated?

16 A No, I said -- sorry, I said that Secker's
17 techniques refer to reflectance sensors. And the
18 problems of Secker are restricted to problems with
19 only two wavelengths, and they don't apply to
20 transmission sensors.

21 Q And is that because the differing depth of
22 penetration at various wavelengths don't apply to

1 transmission sensors?

2 A All I can say is Secker describes its
3 techniques as such. I don't offer an independent
4 opinion.

5 Q So you have no opinion as to whether
6 Secker's statements are correct or incorrect?

7 A All I can say is that Secker recognizes a
8 unique problem faced by reflectance sensors and
9 says that the depth of penetration of human tissue
10 is not identical for all wavelengths. Therefore,
11 for a two-wavelength system it provides different
12 ways of using multiple LEDs but for only two
13 wavelengths.

14 And he does not attribute this problem to
15 transmission sensors. He only applies it to
16 reflection sensors for two wavelengths.

17 So it's a different problem, different
18 way, and not combinable with any of the other
19 prior art, such as Raley.

20 Q Do you have an opinion as a technical
21 expert whether this problem -- whether
22 transmission sensors have differing depth of

1 penetration at various wavelengths?

2 A As I said, I'm opining on Secker and the
3 context in which Secker was utilized by Apple, the
4 petitioner.

5 I don't have other opinions.

6 Q Okay. Did you speak with Mr. Wentzel
7 regarding the substance of your testimony at any
8 time today after you were sworn in by the court
9 reporter?

10 A I haven't spoken to Mr. Wentzel at all
11 today after my deposition has begun, in any
12 manner.

13 MS. LEUNG: Okay. I have no more
14 questions at this time. I'll pass Mr. Madisetti
15 (sic) to Mr. Wentzel.

16 MR. WENTZEL: Thank you for your time,
17 Dr. Madisetti. I have no questions for you.

18 THE WITNESS: Thank you, Counsel. I would
19 like to review the transcript before I sign.

20 (Pause in the proceedings.)

21 THE STENOGRAPHER: Mr. Wentzel, I have
22 Ms. Leung's standing order. I know that you

1 mentioned you'd like a copy. Do you want the
2 rough draft I'll be providing later today as well?

3 MR. WENTZEL: No, we'll just take the
4 final.

5 (Proceedings concluded at 2:50 p.m.)

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1 CERTIFICATE

2 I, Matthew R. Moss, Registered
Professional Reporter, Federal Certified Realtime
3 Reporter, a Notary Public in and for the County of
Anoka, State of Minnesota, hereby certify that I
4 reported the deposition as noted on the first
page, and that the witness was by me first duly
5 sworn to tell the whole truth;

That the testimony was transcribed under
6 my direction and is a true record of the testimony
of the witness;

7 That I am not a relative or employee or
attorney or counsel of any of the parties or a
8 relative or employee of such attorney or counsel;

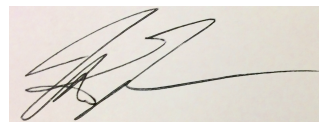
That I am not financially interested in
9 the action and have no contract with the parties,
attorneys, or persons with an interest in the
10 action that affects or has a substantial tendency
to affect my impartiality;

11 That I charge the same rate for copies of
the same transcript to all parties;

12 That any copy of this transcript obtained
13 from a source other than the court reporting firm
including from the adversary or co-counsel in this
14 matter, is deemed unauthorized and uncertified and
may not be used at trial;

15 That the right to read and sign the
16 deposition by the witness was reserved;

17 WITNESS MY HAND this 15th day of January,
18 2025.



19
20
21 Matthew R. Moss
22 Registered Professional Reporter

Page 99

1 Vijay K. Madisetti, Ph.D., c/o
KNOBBE MARTENS

2 2040 Main Street, 14th Floor
Irvine, California 92614

3

Case: Apple, Inc. v. Masimo Corp.

4 Date of deposition: January 10, 2025

Deponent: Vijay K. Madisetti, Ph.D.

5

6 Please be advised that the transcript in the above
referenced matter is now complete and ready for signature.

7 The deponent may come to this office to sign the transcript,
8 a copy may be purchased for the witness to review and sign,
9 or the deponent and/or counsel may waive the option of
10 signing. Please advise us of the option selected.

11 Please forward the errata sheet and the original signed
12 signature page to counsel noticing the deposition, noting the
13 applicable time period allowed for such by the governing
14 Rules of Procedure. If you have any questions, please do
15 not hesitate to call our office at (202)-232-0646.

16

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Deposition Date: January 10, 2025

6
7 I do hereby acknowledge that I have read
and examined the foregoing pages
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8
9 (Check appropriate box):
() The same is a true, correct and
10 complete transcription of the answers given by
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9 Witness Name: Vijay K. Madisetti, Ph.D.

10 Deposition Date: January 10, 2025

11 Page No. Line No. Change

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Signature

Date

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