

Page 1

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

_____)

APPLE INC.,

Petitioner,

v.

Case IPR 2024-00294

U.S. Patent 10,736,507

MASIMO CORPORATION,

Patent Owner.

_____)

REMOTE DEPOSITION OF R. JAMES DUCKWORTH, PH.D.

December 20, 2024

9:59 a.m. Eastern Standard Time

Reported by: Lori J. Goodin, RPR, CLR, CRR,
RSA, California CSR #13959

DIGITAL EVIDENCE GROUP
1730 M Street, NW, Suite 812
Washington, D.C. 20036
(202) 232-0646

1 REMOTE DEPOSITION of
2 R. JAMES DUCKWORTH, PH.D.,
3 Witness in the above-titled action, held on
4 Friday, December 20, 2024, commencing at
5 approximately 9:59 a.m. EST before Lori J.
6 Goodin, RPR, CRR, RSA, California CSR #13959,
7 Registered Professional Reporter, Certified
8 Realtime Reporter, Realtime Systems
9 Administrator, and Certified Shorthand Reporter,
10 and Notary Public of the State of Florida, State
11 of California, State of Maryland, District of
12 Columbia, State of Delaware and Commonwealth of
13 Pennsylvania.

14

15

16

17

18

19

20

21

22

1 REMOTE APPEARANCES:

2

3 FOR PETITIONER APPLE INC.:

4 FISH & RICHARDSON P.C.

5 BY: PATRICK BISENIUS, ESQUIRE

6 BY: GRACE KIM, ESQUIRE

7 60 South Sixth Street

8 Suite 3200

Minneapolis, Minnesota 55402

9 612-337-2510

bisenius@fr.com

10 gkim@fr.com

11

12 FOR PATENT OWNER MASIMO CORPORATION:

13 KNOBBE MARTENS OLSON & BEAR, LLP

BY: MATTHEW RUTH, ESQUIRE

14 BY: DOUGLAS B. WENTZEL, ESQUIRE

2040 Main Street, 14th Floor

15 Irvine, California 92614

949-760-0404

16 matthew.ruth@knobbe.com

douglas.wentzel@knobbe.com

17

18

19

20

21

22

1 INDEX TO EXAMINATION

2 WITNESS: R. JAMES DUCKWORTH, PH.D.

3

4 EXAMINATION BY PAGE

5 MR. BISENIUS 5

6 MR. WENTZEL 141

7

8

9 INDEX TO EXHIBITS

10 PREVIOUSLY MARKED EXHIBITS

11 FIRST REFERRAL

12 EXHIBIT PAGE

13 Exhibit 1001 6

14 Exhibit 1011 77

15 Exhibit 2029 119

16 Exhibit 2037 7

17 Exhibit 2038 21

18

19

20

21

22

1 FRIDAY, DECEMBER 20, 2024, 9:59 a.m. EST

2 PROCEEDINGS

3 * * *

4 Whereupon,

5 R. JAMES DUCKWORTH, PH.D.,

6 a witness called for examination, having been
7 first duly sworn, was examined and testified as
8 follows:

9 EXAMINATION

10 BY MR. BISENIUS:

11 Q. We are here today regarding IPR
12 proceeding IPR 2024-00294 regarding U.S. Patent
13 Number 10,736,507.

14 You understand that you are under
15 oath right now, Dr. Duckworth?

16 A. Yes.

17 Q. Future clarity during the deposition
18 today, I am going to define several terms that I
19 plan to use throughout the deposition.

20 When I use the terms "patent owner"
21 or "Masimo," I'm referring to Masimo Corporation,
22 the patent owner in this proceeding.

1 Do you understand?

2 A. Yes.

3 Q. When I use the term "Apple" or
4 "petitioner," I am referring to Apple, Inc.

5 Do you understand?

6 A. Yes.

7 Q. When you use the term "the '507
8 patent," I am referring to U.S. Patent
9 Number 10,736,507.

10 Do you understand?

11 A. Yes.

12 Q. When I use the phrase "this IPR" or
13 "this proceeding," I am referring to IPR
14 Proceeding Number IPR 2024-00294 filed against
15 the '507 patent.

16 Do you understand?

17 A. Yes.

18 (Whereupon, previously marked
19 Exhibit 1001,
20 first referral.)

21 BY MR. BISENIUS:

22 Q. And you understand that the '507

1 patent is Exhibit 1001 in this proceeding,

2 correct?

3 A. Yes.

4 Q. When I use the acronym, POSITA, I am

5 referring to a person of ordinary skill in the

6 art at the time of the alleged invention.

7 Do you understand?

8 A. Yes.

9 Q. You have submitted two declarations
10 for this proceeding, correct?

11 A. Yes. The current one is dated
12 October the 7th, 2024. Exhibit --

13 Q. I see it dated October 10th, 2024.

14 A. The version I have is dated October
15 the 7th.

16 Q. Oh, your signature page.

17 A. Yes.

18 Q. I was looking at the date of
19 submission. So, this is -- we are talking about
20 the same document then.

21 (Whereupon, previously marked

22 Exhibit 2037,

1 first referral.)

2 BY MR. BISENIUS:

3 Q. This is Exhibit Number 2037. Do you
4 understand that?

5 A. That's correct.

6 Q. All right. Can you please describe
7 how you prepared for today's deposition?

8 A. I -- well, I should, first of all,
9 state I've got a clean copy of my declaration in
10 front of me, along with some of the related
11 documents that was provided by Masimo counsel.

12 So, I prepared for today's
13 deposition by reviewing my declaration and the
14 associated documents.

15 Q. Do you have any handwritten notes
16 with you right now?

17 A. No.

18 Q. Approximately how much time did you
19 spend preparing for today's deposition?

20 A. Maybe about 20 hours.

21 Q. Can you please identify each person
22 you communicated with, either in person or via

1 Zoom or over the telephone to prepare for today's
2 deposition?

3 A. Yes. I worked with counsel for
4 Masimo, Doug Wentzel, who is on this call, and
5 also Matthew Ruth, who is also on this call.

6 Q. 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. Do you recall when you first were
12 contacted by someone on behalf of Masimo?

13 A. Regarding this IPR proceeding?

14 Q. Well, first, in general. And then I
15 want to talk about this proceeding specifically.

16 A. It goes back many years. Maybe
17 three, four or five years when I was first
18 contacted by Masimo.

19 Q. Can you provide a rough estimate of
20 how many cases you have worked on, on behalf of
21 Masimo?

22 MR. WENTZEL: Objection, vague.

1 THE WITNESS: Related to Apple or --

2 BY MR. BISENIUS:

3 Q. All cases in general.

4 A. And by a case, do you mean a
5 specific IPR or --

6 Q. By cases, I mean IPRs, litigation,
7 ITC proceedings. Any cases that you have been --
8 that you have worked with Masimo for.

9 A. So, a very rough estimate would
10 be 20 cases as you have generally described.

11 Q. When were you first contacted by
12 Masimo regarding the '507 IPR?

13 MR. WENTZEL: Objection, vague.

14 BY MR. BISENIUS:

15 Q. Regarding this '507 IPR proceeding?

16 A. Maybe about a year ago. I don't
17 recall exactly.

18 Q. Do you recall who contacted you?

19 A. No, I don't.

20 Q. What did you do, if anything, before
21 agreeing to be retained on behalf of Masimo for
22 this proceeding?

1 MR. WENTZEL: Objection, vague.

2 THE WITNESS: I don't recall I did
3 anything specific before I started working on
4 this IPR.

5 BY MR. BISENIUS:

6 Q. Do you have a written agreement that
7 governs your work for this proceeding?

8 A. I have a written agreement with
9 Masimo to cover my expert contributions. I don't
10 have something specific for this IPR. It is
11 covered just by the blanket agreement.

12 Q. When did you first become aware of
13 the '507 patent?

14 A. I don't remember.

15 Q. Were you aware of the '507 patent
16 before you were contacted by representatives of
17 Masimo regarding this proceeding?

18 A. I don't recall whether the '507
19 patent was covered or mentioned in other
20 proceedings. So, I don't remember.

21 Q. You are aware that the '507 patent
22 is currently involved in a District Court

1 litigation between Apple and Masimo, correct?

2 A. Yes, I believe I have a statement to
3 that effect in my declaration.

4 So, on Page 1, in the first
5 paragraph I say, "I understand that Masimo was
6 asserted the '507 patent against Petitioner Apple
7 in Apple, Inc. versus Masimo Corporation and
8 Sound United for the District of Delaware case."

9 Is that what you are asking?

10 Q. Correct. What documents from that
11 related District Court litigation involving the
12 '507 patent did you review prior to preparing
13 your declaration?

14 A. None. I have not seen any of the
15 documents related to the District of Delaware
16 case.

17 Q. Did you speak with any experts
18 involved in the District Court litigation between
19 Apple and Masimo involving the '507 patent?

20 A. No.

21 Q. Without revealing any privileged
22 communications, can you please describe the

1 process by which you prepared your declaration.

2 For example, did you write every
3 word throughout the entire process? Did counsel
4 for patent owner prepare first drafts that you
5 revised? Or did something else happen?

6 A. I prepared this declaration in
7 combination with Masimo attorneys.

8 They helped me with the drawings,
9 for example, the figures. But, my opinions in
10 this declaration are my own.

11 Q. What percentage of the words in your
12 declaration did you write in this case as opposed
13 to merely reviewing words written by someone
14 else?

15 MR. WENTZEL: Objection, vague.

16 THE WITNESS: I wouldn't like to
17 give a percentage.

18 BY MR. BISENIUS:

19 Q. In your declaration, which is
20 Exhibit 2037, you reference a declaration
21 submitted by Bilal Muhsin, who is one of the
22 named inventors of the '507 patent.

1 Did you communicate directly with
2 Mr. Muhsin at any point when preparing your
3 declaration?

4 A. No.

5 Q. As part of your work in this IPR
6 proceeding, did you ever communicate with any of
7 the other named inventors of the '507 patent?

8 A. No.

9 Q. Did you have anyone other than
10 counsel for patent owner assist you with
11 preparing your declaration such as an assistant?

12 A. No.

13 Q. Have you been in contact with anyone
14 at patent owner, other than counsel for patent
15 owner, in preparing your declaration?

16 A. No.

17 Q. Are you currently aware of any
18 errors that exist in your declaration?

19 A. No.

20 Q. Approximately how many times have
21 you been retained as a testifying expert in
22 either an IPR District Court, ITC, or other legal

1 proceeding?

2 A. Maybe ten times, roughly.

3 Q. Well, earlier you've said you've
4 worked on 20 cases for Masimo alone.

5 So, I'm asking you how many, how
6 many total cases you have worked on, including
7 Masimo and additional clients?

8 A. Well, you also asked -- I think you
9 made the qualification, testifying expert.

10 So, I have helped on some cases
11 where I have provided tech -- expertise,
12 technical expertise, expert expertise but didn't
13 actually testify.

14 Q. Thank you for the clarification.

15 Before reading his expert
16 declaration in this case, did you know of
17 Dr. Thomas Kenny?

18 A. Yes.

19 Q. How did you first become aware of
20 Dr. Thomas Kenny?

21 A. I believe he has been an expert in
22 other IPR cases.

1 Q. Have you ever met Dr. Thomas Kenny
2 in person?

3 A. No.

4 Q. All right. I would like to turn to
5 your second declaration, Exhibit 2037, and
6 specifically I'm going to start at Paragraphs 106
7 and 107.

8 A. I am on those pages.

9 Q. In Paragraph 106 you state that the
10 processing module calculates -- sorry, let me
11 stop.

12 These paragraphs are discussing the
13 specification of the '507 patent, correct?

14 A. These Paragraphs 106 and 107 are
15 part of my Section B, which I call Overview of
16 the '507 Patent.

17 Q. In Paragraph 106 you state that the
18 processing module of the '507 patent calculates
19 measurement values and then sends them to the
20 mobile device.

21 Do you see that?

22 A. So, I say, "The processing module

1 receives signals from the sensor, processes the
2 signals, calculates the measurement values, and
3 then sends them to the mobile device."

4 Yes, that is what I state there.

5 Q. Then Paragraph 107 you state that
6 this configuration in the '507 patent provides
7 more accurate values and power savings when
8 compared to using mobile computing device itself
9 to compute values.

10 Do you see that?

11 A. Not at the moment. Just one second.
12 Yes, so about maybe a third of the way through
13 107, "As the specification explains, a processing
14 board can provide more accurate SpO2 measurement
15 values to the mobile computing device,
16 particularly when compared to using the mobile
17 computing device itself to compute the values."

18 Q. So, is it your opinion that the
19 claims of the '507 patent require the SpO2 values
20 to be calculated externally from the mobile
21 computing device by the processing board?

22 MR. WENTZEL: Objection, vague.

1 THE WITNESS: Are you looking at a
2 particular claim?

3 Let me look at the '507 patent.

4 Yes, can you point me to the claim that you
5 are asking about?

6 BY MR. BISENIUS:

7 Q. Well, for reference, I'm discussing
8 both of the independent claims, Claims 1 and 13.

9 And I'm just asking based on your
10 categorization in Paragraph 107, about
11 calculating the SpO2 values using the processing
12 board before transmitting them to the mobile
13 computing device.

14 I'm asking, is it your opinion that
15 the claims of the '507 patent require the SpO2
16 value to be calculated externally from the mobile
17 computing device by the processing board?

18 MR. WENTZEL: Objection, vague.

19 THE WITNESS: I don't believe I have
20 provided an opinion on that.

21 All I was doing in 107 was
22 explaining what the specification said.

1 So, can you point me to something
2 else that, you know, you are referring to
3 there?

4 BY MR. BISENIUS:

5 Q. Well here you said that one of the
6 benefits of the '507 patent invention is this
7 calculation of the SpO2 measurement value by the
8 processing board.

9 And so I'm asking you if the mobile
10 computing device were to calculate the actual SpO2
11 measurement value, would that fall within the
12 scope of independent Claims 1 and 13?

13 MR. WENTZEL: Objection, vague.

14 THE WITNESS: So, can you repeat
15 your question?

16 BY MR. BISENIUS:

17 Q. If the mobile computing device were
18 to calculate the actual SpO2 measurement value,
19 would that fall within the scope of independent
20 Claims 1 and 13 of the '507 patent?

21 A. I don't see -- I'm still confused by
22 your question.

1 All I can do is maybe refer to
2 Claim 1 where it talks about, "wherein the
3 processing of the one or more signals to generate
4 SpO2 measurement values is performed only on the
5 processing board, thereby freeing up memory
6 available to the mobile computing device."

7 Q. I would like to move to Paragraph 42
8 of your declaration.

9 A. I am at 42.

10 Q. In this portion of your declaration
11 you are discussing the declaration of Bilal
12 Muhsin, in prototype video which is submitted as
13 Exhibit 2039, and the document titled User
14 Interface Summary submitted as Exhibit 2040.

15 Is that correct?

16 A. In 42, I am referring to those
17 documents, yes.

18 Q. The image in Paragraph 43 is taken
19 from the prototype video, correct?

20 A. Let's see. Yes, that is correct.

21 Q. What information or data is being
22 output by the optical sensor in this

1 configuration?

2 A. Can you say -- ask me the question
3 again, please?

4 Q. Yes. Looking at the configuration
5 depicted in this image from prototype video in
6 Paragraph 43, what information or data is being
7 output by the optical sensor in this
8 configuration?

9 A. Let me refer to Bilal's declaration.
10 Let's see.

11 (Whereupon, previously marked
12 Exhibit 2038,
13 first referral.)

14 THE WITNESS: So, Paragraph 13 of
15 Muhsin's declaration, Exhibit 2038, says,
16 "The finger sensor of the prototype system
17 also contained a detector that received
18 emitted light after it passed through (and
19 was attenuated by) the user's finger.

20 "The detector of the sensor
21 generated one more signal based on the light
22 it detected, and output those one or more

1 signals to the processing module
2 (specifically the processing board in the
3 processing module) through the cable
4 connecting the sensor and processing module."

5 So, when you asked me what the
6 optical signal was generating, so the answer
7 is the detector to the sensor generate one or
8 more signals based on the light it detected.

9 BY MR. BISENIUS:

10 Q. What form do the one or more signals
11 being output by the optical sensor take?

12 For example, is it a change in
13 voltage, a change in currents, a digital signal,
14 an analog signal?

15 A. Are you asking me about the
16 prototype of Muhsin?

17 Q. Yes. I am -- for the next series of
18 questions, assume that I am talking about the
19 configuration shown in the prototype video as
20 demonstrated by the screenshot that you are
21 showing in Paragraph 43 of your declaration.

22 And my question is, what form does

1 the signal -- one or more signals being output by
2 the optical sensor take?

3 MR. WENTZEL: Objection, vague.

4 THE WITNESS: It is the output of
5 the detector. And I don't have information
6 about the detector so I can't say whether it
7 was a voltage, a current.

8 It would be some varying analog
9 signal generating that signal based on the
10 light it detected.

11 BY MR. BISENIUS:

12 Q. How do you know that it would be an
13 analog signal rather than a digital signal?

14 A. The detector would be a photo,
15 photodiode, and photodiodes provide current or
16 varying voltage. They don't provide additional
17 signal.

18 Q. For this specific optical sensor,
19 what are you basing that opinion on?

20 A. The descriptions that Muhsin
21 provides contained a detector that received a
22 emitted light after it passed through and was

1 attenuated by the user's finger. And the
2 detector sensor generated one or more signals
3 based on the light it detected.

4 Q. Does Muhsin describe whether these
5 generated signals are analog or digital signals?

6 A. I don't believe Muhsin uses those
7 terms.

8 Q. In this prototype configuration, the
9 one or more signals are communicated via a wired
10 connection; is that correct?

11 A. Yes. As I read, "The detector of
12 the sensor generated one or more signals.

13 "Output those to the processing
14 module through the cable connecting the sensor
15 and processing module."

16 Q. In your opinion is there a
17 difference between a wired connection and a
18 non-wireless connection?

19 MR. WENTZEL: Objection, vague.

20 THE WITNESS: In what context are we
21 talking about, when you say wired and
22 non-wired?

1 BY MR. BISENIUS:

2 Q. In the context of system described
3 in the '507 patent, is there a difference between
4 a wired connection and a non-wireless connection?

5 MR. WENTZEL: Objection, vague as to
6 non-wireless.

7 THE WITNESS: So, now we are talking
8 about the '507 patent, not the prototype.

9 And I am confused when you say wired
10 and non-wired. Can you be specific about
11 where in the '507 you are referring to?

12 BY MR. BISENIUS:

13 Q. Is it your opinion that the system
14 depicted in the image in Paragraph 43 of your
15 declaration supports the independent claims of
16 the '507 patent?

17 MR. WENTZEL: Objection, vague.

18 THE WITNESS: So, you are asking me
19 specifically about the image on -- in
20 Paragraph 43; is that correct?

21 BY MR. BISENIUS:

22 Q. Correct. I'm asking you, it is

1 your -- is it correct that it is your opinion
2 that not just this image but the video, the
3 testimony from Mr. Muhsin regarding the video,
4 and the user interface summary support the
5 claims, the independent Claims 1 and 13 of the
6 '507 patent; is that correct?

7 A. So, in Paragraph 41 of my
8 declaration I say, "As explained in detail below,
9 every limitation of independent Claims 1 and 13
10 of the '507 patent was actually reduced to
11 practice on or before August 31st, 2011."

12 And then through the rest of the
13 paragraphs of that section I am describing the
14 prototype that Muhsin was describing.

15 Q. So, returning to my earlier
16 question. In a system like this, depicted in
17 Figure 43 which -- or in Paragraph 43, which you
18 have stated supports the independent claims of
19 the '507 patent.

20 What I'm asking is, is there a
21 difference between a wired connection and a
22 non-wireless connection?

1 MR. WENTZEL: Objection, vague as to
2 non-wireless.

3 THE WITNESS: Yes, I am confused
4 still about your use of the terms "wired" and
5 I think "non-wired."

6 Can you --

7 BY MR. BISENIUS:

8 Q. Sorry. The two terms I'm using are
9 "wired connection" --

10 A. Okay.

11 Q. -- and "non-wireless connection."

12 And I'm asking you, in your opinion
13 is there a difference between the term "wired
14 connection" and the term "non-wireless
15 connection"?

16 MR. WENTZEL: Objection, vague as to
17 non-wireless.

18 THE WITNESS: I need to know the
19 context in which you are asking that. You
20 are referring to my Paragraph 43, but I don't
21 understand what you mean by non non-wireless.

22 BY MR. BISENIUS:

1 Q. Would a person of ordinary skill in
2 the art at the time of the '507 invention have
3 known what the term "non-wireless connection"
4 means?

5 MR. WENTZEL: Still vague.

6 THE WITNESS: You have to be
7 specific about what you mean by
8 non non-wireless.

9 That is a negative. If you could
10 give me an example of what you mean by that,
11 maybe I can respond better.

12 BY MR. BISENIUS:

13 Q. So, I'm asking you just about the
14 term "non-wireless connection."

15 Would a person of ordinary skill at
16 the time of the '507 patent know what the term
17 "non-wireless connection" in the context of the
18 system of the '507 patent means?

19 A. But the '507 patent, unless I am
20 mistaken -- and you can point me to where it says
21 non-wireless.

22 I am having difficulty understanding

1 your question.

2 So, can you show me where in the
3 '507 it is referring to non non-wireless then.

4 Q. I'm asking you if a person of
5 ordinary skill would have known what the term
6 "non-wireless connection" means.

7 So, give me a yes or no answer here.

8 Would a person of ordinary skill in
9 the art in the area of the '507 patent, at the
10 time of the '507 patent, have known what the term
11 "non-wireless connection" means?

12 MR. WENTZEL: Objection, vague,
13 asked and answered.

14 MR. BISENIUS: He hasn't answered.
15 He has asked me to point him to parts of the
16 '507 patent.

17 BY MR. BISENIUS:

18 Q. And I'm asking you a yes or no
19 question. So, you can answer yes, no, or I don't
20 know.

21 So, would a person of ordinary skill
22 in the art at the time of the '507 patent have

1 known what the term "non-wireless connection"
2 means.

3 MR. WENTZEL: Same objections.

4 THE WITNESS: I believe I have
5 answered this a few times. I need to know
6 the context to be able to say yes or no to
7 that question.

8 BY MR. BISENIUS:

9 Q. The context is the system of the
10 '507 patent, a person of ordinary skill, as you
11 have described a person of ordinary skill in the
12 art in your declaration, would that person have
13 known what the term "non-wireless connection"
14 means?

15 MR. WENTZEL: Objection, vague.

16 BY MR. BISENIUS:

17 Q. Are you refusing to answer this
18 question, Dr. Duckworth?

19 A. I am still thinking about it, and I
20 think all I can do is refer you back to my
21 previous answers.

22 Q. So, you do not have an opinion as to

1 whether or not a person of ordinary skill in the
2 art at the time of the '507 patent would have
3 known what the term "non-wireless connection"
4 means?

5 A. That is mischaracterizing my answer.
6 I explained that to be able to answer that
7 question I need to know more about the context,
8 because that term is not used in the '507 patent
9 as I -- as far as I am aware.

10 And so I find that question too
11 vague to be able to give you an answer.

12 Q. Have you read the entire '507
13 patent?

14 A. Yes.

15 Q. Would a person of ordinary skill in
16 the art at the time of the '507 patent that had
17 read the entire '507 patent know what the term
18 "non-wireless connection" means?

19 MR. WENTZEL: Objection, vague,
20 asked and answered.

21 THE WITNESS: I believe I have
22 answered that question. I will just refer to

1 my previous responses.

2 BY MR. BISENIUS:

3 Q. This is actually a different
4 question.

5 So, a person of ordinary skill in
6 the art is assumed to have not been privy to the
7 disclosures of the '507 patent. And that is what
8 I was asking before.

9 Now I'm asking, if you take that
10 same person of ordinary skill in the art, you
11 give them the '507 patent, the entire patent,
12 they read the entire patent.

13 After reading the '507 patent, would
14 that person of ordinary skill in the art know
15 what the term "non-wireless connection" means?

16 MR. WENTZEL: Objection, vague.

17 Asked and answered.

18 THE WITNESS: The term
19 "non-wireless" I believe is not described in
20 the '507 patent.

21 And without them knowing more about
22 the context, I can't give you an answer. It

1 is too vague.

2 BY MR. BISENIUS:

3 Q. So, is it your opinion that after
4 reading the '507 patent, a person of ordinary
5 skill in the art would not be able to determine
6 what the term "non-wireless connection" means in
7 the context of the '507 patent?

8 A. It would really help me, because you
9 keep referring to this term in the context of the
10 '507 patent.

11 Can you show me in the '507 patent
12 where that term is used? And then I can probably
13 better respond.

14 Q. The term is not used in the '507
15 patent. And so I'm asking you if a POSITA had
16 the '507 patent in their possession, read the
17 entire '507 patent, after reading it would that
18 POSITA know what the term "non-wireless
19 connection" means?

20 MR. WENTZEL: Objection, vague.

21 Asked and answered.

22 THE WITNESS: I believe I have

1 answered that question.

2 BY MR. BISENIUS:

3 Q. So you can't answer this question.
4 You haven't provided a yes or no or an I don't
5 know.

6 So, is it the case that you cannot
7 answer the question as to whether or not a POSITA
8 reading the '507 patent would know what a
9 non-wireless connection is?

10 MR. WENTZEL: Same objections.

11 THE WITNESS: I answered that I
12 can't provide a yes or no answer without
13 knowing more context of the question and the
14 specific non-wireless term that you are
15 referring to.

16 BY MR. BISENIUS:

17 Q. So, continuing with this image in
18 Paragraph 43 of your declaration, what component
19 or components is the optical sensor actually
20 using to detect light from the light source?

21 A. So, I believe we have covered this
22 when I provided the description in Paragraph 13

1 of Muhsin' declaration.

2 "The finger sensor of the prototype
3 system also contained a detector that received
4 emitted light after it passed through (and was
5 attenuated by) the user's finger."

6 Q. Do you know any other details on the
7 structure or makeup of the detector?

8 MR. WENTZEL: Objection, vague.

9 BY MR. BISENIUS:

10 Q. So, for example, does the detector
11 include a photodiode? Does it include two
12 photodiodes? Does the detector include a
13 resistor? Does the detector include any
14 capacitors? Does the detector include any
15 amplifiers?

16 I'm just wondering if you are aware
17 of any of those details.

18 MR. WENTZEL: Objection, vague and
19 compound.

20 THE WITNESS: The description on
21 Paragraph 13 refers to, "a detector that
22 received light after it passed through (and

1 was attenuated by) the user's finger." And
2 then, "the detector generated one or more
3 signals based on the light it detected, and
4 output those one or more signals to the
5 processing module."

6 And then in Paragraph 22, it says,
7 "Further, because the prototype system relied
8 solely on the processing board to receive
9 signals from the finger sensor and use those
10 signals to calculate an output measurement
11 values."

12 And then the next sentence,
13 "Performing all of the signal processing with
14 the processing board was a main purpose of
15 the invention of the '507 patent."

16 So, that is telling me that all of
17 the processing whether that is amplification,
18 filtering, conversion, averaging, all of that
19 processing is done on the processing board.

20 BY MR. BISENIUS:

21 Q. Does the optical sensor in the
22 configuration of the prototype video perform any

1 type of summing or averaging of the sensed light
2 samples?

3 A. I believe I just answered that
4 question, because in Paragraph 22 of Muhsin's
5 declaration it describes that all of the signal
6 processing is done with the processing board.

7 Q. So, continuing with this
8 configuration from a prototype video, what
9 information or data is being output by the
10 processing module to the mobile computing device?

11 A. So, in Paragraph 14 of Muhsin's
12 declaration, the second sentence says, "The
13 output of the processing board (calculated the
14 measurements of SpO2 and the other parameters
15 mentioned above) is then output through another
16 cable to the mobile computing device."

17 So, you asked me -- I believe that
18 is what you asked me what -- so, that is the
19 output of the processing board to calculate the
20 measurements of SpO2 and the other parameters is
21 then output through another cable to the mobile
22 computing device.

1 Q. Let's say you were to take this
2 configuration from the prototype video and
3 implement the system such that some of the
4 processing to determine this information is
5 conducted by the processing module, but the
6 processing module does not actually determine an
7 SpO2 value.

8 Instead it sends the process
9 information to the mobile computing device and
10 the mobile computing device determines the actual
11 SpO2 measurement value.

12 Would that be sufficient to meet the
13 requirements of independent Claims 1 and 13 of
14 the '507 patent?

15 MR. WENTZEL: Objection, vague in
16 multiple respects. And compound.

17 THE WITNESS: So, now you are asking
18 me a hypothetical question about Muhsin's
19 prototype per system; is that correct?

20 BY MR. BISENIUS:

21 Q. Correct.

22 MR. WENTZEL: Same objections.

1 THE WITNESS: That is not something

2 I have provided an opinion on.

3 BY MR. BISENIUS:

4 Q. I am aware, but you have read
5 Claims 1 and 13 of the '507 patent, correct?

6 A. Yes, I have read Claims 1 and 13 of
7 the '507 patent.

8 Q. And my question is if some of the
9 processing is conducted by the processing board
10 and then that information is transmitted to the
11 mobile computing device, but it is the mobile
12 computing device that actually calculates the SpO2
13 measurement value, would that fall within the
14 scope of Claims 1 and 13 of the '507 patent?

15 MR. WENTZEL: Objection, vague and
16 compound. And I believe you already have an
17 answer.

18 THE WITNESS: I believe we covered
19 that earlier when I was reading part of
20 Claim 1, for example, where it says,
21 "Wherein, the processing of the one or more
22 signals to generate SpO2 measurement values

1 is performed only on the processing board."

2 BY MR. BISENIUS:

3 Q. So, if the mobile computing device
4 were to calculate the SpO2 measurement value, that
5 would fall outside the scope of Claims 1 and 13;
6 is that correct?

7 MR. WENTZEL: Same objections.

8 Asked and answered. And vague.

9 THE WITNESS: I will just refer back
10 to what I said is what Claim 1 requires which
11 is, "Wherein the processing one or more
12 signals to generate SpO2 measurement values
13 is performed only on the processing board."

14 BY MR. BISENIUS:

15 Q. And so my question is if the mobile
16 computing device were to calculate the SpO2
17 measurement value, would that fall outside the
18 scope of Claims 1 and 13?

19 MR. WENTZEL: Same objections.

20 Vague. Asked and answered.

21 MR. BISENIUS: I don't understand
22 how you can call these questions vague. You

1 have called every single question that I have
2 asked today vague.

3 This is a straightforward question.
4 I am asking a simple question about something
5 that can fit within the scope of the claims.
6 And you are calling everything vague.

7 I think you are signalling to your
8 expert today.

9 MR. WENTZEL: I really disagree, but
10 you can ask your questions and I can give my
11 objections. And that is how it works.

12 And your questions are vague, so --

13 THE WITNESS: Again, I will refer
14 back to the claim language that explicitly
15 states that the claim requires, "Wherein, the
16 processing the one or more signals to
17 generate SpO2 measurement values is performed
18 only on the processing board."

19 BY MR. BISENIUS:

20 Q. So, as we discussed earlier in
21 Paragraph 41, you opined that the configuration
22 shown in the prototype video provides support for

1 all recitations of Claims 1 and 13; is that
2 correct?

3 A. I'm sorry, let me just catch up
4 where we are looking.

5 Can you -- what paragraph did you
6 say, please?

7 Q. Paragraph 41. You have mentioned
8 earlier this morning that in Paragraph 41 you had
9 opined that the systems shown in the prototype
10 video provides support for all elements of
11 Claims 1 and 13. Is that correct?

12 A. So, in if Paragraph 41 I say,
13 "Explained in detail below, every limitation of
14 independent Claims 1 and 13 of the '507 patent
15 was actually reduced to practice on or before
16 August 31st, 2011."

17 That is what I state in
18 Paragraph 41, yes.

19 Q. Is it your opinion that this
20 configuration supports the claims because the SpO2
21 value is calculated by the processing board
22 external to the mobile computing device and then

1 output to the mobile computing device?

2 A. I think maybe you are
3 oversimplifying things there, you know, the
4 claims.

5 Q. Well, I can be a bit more specific.
6 Let's move ahead to Paragraph 60 of your
7 declaration.

8 A. Okay. I am at 60.

9 Q. So, here you are still discussing
10 how the prototype video and testimony from
11 Dr. Muhsin -- or sorry, from Mr. Muhsin support
12 Claims 1 and 13. Is that correct?

13 A. So, in Paragraph 60, I am stating --
14 this is part of Limitation 13D. "Mr. Muhsin
15 confirms the prototype system's processing board
16 used the one or more signals received from the
17 finger-clip optical sensor to calculate
18 measurement values including values of SpO2, pulse
19 rate, perfusion index and the PPG waveform."

20 Is that what you asked me?

21 Q. Yeah. I'm just confirming that this
22 section is still talking about your opinions on

1 the prototype video confirming earlier date of
2 invention to support Claims 1 and 13. Is that
3 correct?

4 A. I want to be careful what you are
5 asking me is that correct, because there was a
6 lot there.

7 Can you -- because we are in
8 Paragraph 60. Could you ask me something
9 specific about Paragraph 60 then?

10 Q. In Paragraph 60, are you still
11 discussing how the Muhsin declaration, the
12 prototype video and the user interface summary
13 support the independent claims of the '507
14 patent?

15 MR. WENTZEL: Objection, vague.

16 THE WITNESS: This is all -- yes.
17 This is all part of Section 6, starting in
18 Paragraph 41, "As explained in detail below,
19 every limitation of independent Claims 1
20 and 13 of the '507 patent was actually
21 reduced to practice on or before August 31,
22 2011."

1 And then where specifically in
2 section -- Subsection A, "Claim 13 was
3 actually reduced to practice by August 31st,
4 2011."

5 And now we are in Subsection 5
6 talking about Limitation 13D.

7 BY MR. BISENIUS:

8 Q. Thank you.

9 So, continuing with Paragraph 60,
10 and specifically the part of Paragraph 60 at the
11 top of Page 30, here you have opined that the
12 main purpose of the '507 patent is to perform the
13 signal processing to determine the SpO2
14 measurement value with the processing board
15 external to the mobile computing device.

16 Is that correct?

17 MR. WENTZEL: Objection, misstates
18 the document.

19 THE WITNESS: Where -- which
20 sentences were you reading there so I can be
21 clear?

22 BY MR. BISENIUS:

1 Q. I'm at the top of Paragraph 30 -- or
2 sorry, Page 30, but I am generally talking about
3 your opinion expressed in Paragraph 60.

4 I'm asking you here that you have
5 opined the main purpose of the '507 patent is to
6 perform the signal processing to determine the
7 SpO2 measurement with the processing board
8 external to the mobile computing device.

9 Is that correct?

10 A. Well, my wording at the top of
11 Page 30 is that, "Mr. Muhsin further explains
12 that performing all of the signal processing with
13 the processing board was the main purpose of the
14 inventions in the '507 patent, and that the
15 prototype system shown in the prototype video
16 operated in this way."

17 Q. And this is part of your support for
18 Limitation 13D, correct?

19 A. This is all part of 13D.

20 THE WITNESS: Counselor, we have
21 been going nearly an hour. My throat is
22 getting a bit dry. Would you mind if we take

1 a break?

2 MR. BISENIUS: I just have one more
3 question on this paragraph and then we will
4 move on to some other paragraphs.

5 THE WITNESS: Okay.

6 BY MR. BISENIUS:

7 Q. So, would the support for
8 Limitation 13D require calculating the Sp02
9 measurement value using the external processing
10 board?

11 MR. WENTZEL: Objection, vague as to
12 external and also I object to these lines of
13 questioning.

14 MR. BISENIUS: You are talking way
15 too much today, Doug. Do we need to take
16 this to the Board?

17 MR. WENTZEL: I'm making my
18 objection.

19 THE WITNESS: Can you ask me the
20 question again? We are still in
21 Paragraph 60, I believe, at the top of
22 Page 30.

1 MR. BISENIUS: Let's take a break

2 and we can ask after the break.

3 Should we say ten minutes?

4 (Recess taken -- 10:55 a.m.)

5 (After recess -- 11:05 a.m.)

6 MR. BISENIUS: I would like to

7 remind patent owner's counsel that the trial

8 practice guide notes that speaking objections

9 and coaching the witness are strictly

10 prohibited.

11 This is 77 Federal Register 48772,

12 specifically, Appendix D testimony guidelines

13 state that "Consistent with the policy

14 expressed in Rule 1 of Federal Rules of Civil

15 Procedure and corresponding 37 CFR Section

16 42.1B, unnecessary objections, speaking

17 objections and coaching of witnesses in

18 proceedings before the Board are strictly

19 prohibited.

20 "Cross-examination testimony should

21 be a question and answer conversation between

22 the examining lawyer and the witness. The

1 defending lawyer must not act as an
2 intermediary, interpreting questions,
3 deciding which questions the witness should
4 answer and helping the witness formulate
5 answers while testifying."

6 Subsection 3 of Appendix D further
7 states, "An objection must be stated
8 concisely in a non-argumentative and
9 non-suggestive manner. Counsel must not make
10 objections or statements that suggest an
11 answer to a witness.

12 "Objections should be limited to a
13 single word or term. Examples of objections
14 that would be properly stated are objection,
15 form; objection, hearsay; objection,
16 relevance; and objection, foundation.

17 "Examples of objections that would
18 not be proper are objection, I don't
19 understand the question; objection, vague;
20 objection, take your time answering the
21 question; and objection, look at the document
22 before you answer.

1 "An objecting party must give a
2 clear and concise explanation of an objection
3 if requested by the party taking the
4 testimony or the objection is waived."

5 MR. WENTZEL: What are you doing
6 here?

7 MR. BISENIUS: So, counsel, if I
8 hear the word "vague" come out of your mouth
9 one more time, we are going to the Board.
10 You have repeated words from my questions
11 multiple times on the record.

12 You are coaching your witness right
13 in front of me and it is clear as day on the
14 record.

15 If I hear anything out of you, other
16 than objection, hearsay; objection,
17 relevance; objection, foundation; objection,
18 form, or objection, privilege, we are going
19 to the Board.

20 You cannot coach your witness during
21 a deposition. Do you understand?

22 MR. WENTZEL: There is no witness

1 coaching going on. I mean, this is
2 unbelievable.

3 MR. BISENIUS: Well, I've got
4 Realtime right here. Let's go back and look.

5 MR. WENTZEL: Why don't you just ask
6 your questions like the deposition is
7 supposed to go?

8 MR. BISENIUS: At 10:54:37 you
9 stated "Objection, vague." That is clearly
10 not allowed by the rules.

11 You then continued, "as to external
12 and also, I object to these lines of
13 questions."

14 Speaking objections -- you used the
15 objection, vague. Not an allowed objection.

16 And you repeated a word from my
17 question to coach your witness as to
18 specifically what term he was supposed to
19 focus on.

20 If I hear anything out of you again
21 in this deposition that is not objection,
22 form; objection, hearsay; objection,

1 relevance; objection, foundation, or
2 objection, privilege, we are going to the
3 Board because you are coaching your witness.
4 Do you understand?

5 MR. WENTZEL: I'm not coaching my
6 witness. But, just ask your questions.

7 BY MR. BISENIUS:

8 Q. All right. We were talking about
9 Paragraph 60 of your declaration.

10 So on the top of Paragraph 60 you
11 here have stated that, "Mr. Muhsin further
12 explains that performing all of the signal
13 processing with the processing board was a main
14 purpose of the inventions in the '507 patent, and
15 that the prototype system shown in the prototype
16 video operated in this way."

17 Do you see that?

18 A. I see that at the top of Page 30,
19 yes.

20 Q. So, what I'm asking you is in
21 support of Limitation 13D, does this require that
22 the SpO2 measurement is performed using the

1 external processing board?

2 MR. WENTZEL: Objection, form.

3 THE WITNESS: 13D says by a
4 processing board. What do you mean by
5 external processing board?

6 BY MR. BISENIUS:

7 Q. Yes. I'm asking you, is this
8 requiring all of the SpO2 measurement
9 calculations, such that the actual SpO2
10 measurement value calculated, be conducted on the
11 external processing board?

12 Or does this limitation allow for
13 the determination of the SpO2 measurement value to
14 be calculated at the mobile computing device
15 itself?

16 A. I believe we covered that earlier,
17 where we went through Claim 1. It says, "Wherein
18 the processing of the one or more signals to
19 generate SpO2 measurement values is performed only
20 on the processing board."

21 Q. And so my question is if that
22 calculation of the SpO2 measurement value were

1 performed at the mobile computing device, that
2 would be outside the scope of Claim 13; is that
3 correct?

4 MR. WENTZEL: Asked and answered.

5 MR. BISENIUS: I'm going to let that
6 one go, Doug, but that is not on the list.

7 THE WITNESS: I believe I have
8 answered that question multiple times. I
9 will just repeat my answer.

10 That the claim requires, "Wherein
11 the processing of the one or more signals to
12 generate SpO2 measurement values is performed
13 only on the processing board."

14 BY MR. BISENIUS:

15 Q. Can we move ahead a couple of
16 paragraphs to Paragraph 62. Here you state that
17 Limitation 13E is supported by the prototype
18 video because the measurement values were output
19 by the processing board through the cable to the
20 mobile computing device.

21 Is that correct?

22 A. So I believe you are reading part of

1 my Paragraph 62 where it says, "Mr. Muhsin
2 confirmed that the measurement value was
3 calculated by the prototype system's processing
4 board, (SpO2 pulse rate, perfusion index and the
5 PPG waveform) were output by that processing
6 board through the cable to the mobile computing
7 device, where the measurements were displayed on
8 the user interface of an application executed on
9 the iPhone."

10 Q. So, is it your opinion that this
11 disclosure by Mr. Muhsin supports Limitation 13E,
12 because the SpO2 measurement value itself is
13 output by the processing board and then received
14 at the mobile computing device?

15 A. What was the question there?
16 Because I believe that is basically what this
17 section we are looking at, 6 here, Limitation 13E
18 via processing board output in the SpO2
19 measurement values.

20 So, I think I clearly state that in
21 Paragraph 62, Mr. Muhsin confirms, you know, just
22 what I read before.

1 Q. And I'm asking you so your support
2 here is that the processing board is outputting
3 the actual SpO2 measurement value which is then
4 received by the mobile computing device, correct?

5 A. I just refer to my previous
6 description. "Confirms that the measurement
7 values calculated by the prototype's system
8 processing board SpO2," et cetera, "were output by
9 that processing board."

10 Q. I would like to turn to Paragraph 66
11 of your declaration.

12 A. Yes, I am there.

13 Q. On the second page of this paragraph
14 you have shown a screen capture from the
15 prototype video that shows the user interface of
16 the mobile computing device.

17 Is that correct?

18 A. Let me see. Paragraph 66.

19 Q. So, there are two different images
20 in Paragraph 66. I'm talking about the first
21 image in Paragraph 66. This is a screen capture
22 from the prototype video showing the user

1 interface of the mobile computing device,
2 correct?

3 A. So, in Paragraph 66, just to make
4 sure, yeah, towards the bottom of Page 32, "For
5 example, below is one graphical user interface
6 generated by the prototype system's mobile
7 application being run on the iPhone."

8 And then, yeah, so, "The plurality
9 of generator display portions are shown using
10 different colored boxes below." And that is the
11 picture we can see on Page 33.

12 Q. What is the top-most value depicted
13 in the user interface?

14 A. If we turn to Page 35. I have
15 annotated that same image there.

16 So we have got SpO2 displayed at the
17 top of that image.

18 Q. Is that value an average of several
19 measured values or does that represent a single
20 measured value?

21 A. Mr. Muhsin just refers it -- to it
22 as an SpO2 value. That is all I can say about it.

1 Q. What is the second value shown on
2 the user interface screen?

3 A. If we look at my annotated figure on
4 Page 35, we can see the 90 is the pulse rate.

5 Q. What is the third value shown in the
6 user interface?

7 A. Same page and the same annotated
8 figure, the perfusion index.

9 Q. What is a perfusion index?

10 A. That just gives you a -- some kind
11 of quality measure of the pulsatile signal
12 relative to the non-pulsatile blood flow at the
13 measurement site.

14 Q. The fourth portion of this user
15 interface is showing a PPG waveform, correct?

16 A. That is how I annotate it on
17 Page 35, yes.

18 Q. What information is used to create
19 this PPG waveform?

20 A. This specific waveform, we are
21 referring to the bottom of Page 35?

22 Q. Correct.

1 A. So, in Paragraph 16 of Mr. Muhsin's
2 declaration, he says that, "I confirm from my
3 personal knowledge that the prototype system's
4 processing board used the one or more signals
5 from the finger-clip optical sensor to calculate
6 the measurement values (SpO2, pulse rate,
7 perfusion index, PPG waveform), that were
8 ultimately transmitted, display value application
9 running on the connected iPhone. Measurement
10 values were calculated only on the processing
11 board, not on the iPhone."

12 So, the measurement -- so, the
13 calculation of those values that we are looking
14 at, SpO2 pulse rate, perfusion index, PPG
15 waveform, Mr. Muhsin says that the processing
16 board calculates those boards -- sorry,
17 calculates those measurement values using the one
18 or more signals received from the finger-clip
19 optical sensor.

20 Q. In analyzing the Muhsin declaration,
21 the prototype video and the user interface
22 summary, did you provide any analysis based on

1 those exhibits with respect to any of the
2 dependent claims of the '507 patent?

3 A. I believe I focused on the Muhsin
4 prototype video and his supporting declaration
5 and user interfaces for independent Claims 1
6 and 13 of the '507 patent.

7 Q. So, you did not provide any opinion
8 as to any of the dependent claims with respect to
9 those three exhibits you have just mentioned; is
10 that correct?

11 A. I don't recall that. If you can
12 point me to something where you know I did, that
13 would maybe help me.

14 Q. We can move on. I want to move to
15 Paragraph 84 of your declaration.

16 Here you are discussing
17 limitation --

18 A. Just one second, please. I am just
19 getting there.

20 Q. Sorry.

21 A. Okay. I am at Paragraph 84.

22 Q. So, here you are discussing

1 Limitation 1K of the '507 patent. And you are
2 still discussing the support for this limitation
3 in the Muhsin declaration, prototype video and
4 the user interface document; is that correct?

5 A. So, yes. Limitation 1K is where we
6 are talking about, "Wherein the processing of the
7 one or more signals to generate SpO2 measurement
8 values performed only on the processing board."

9 And let's see. The first sentence
10 says something similar. "Mr. Muhsin confirms
11 that the processing signals output by the
12 prototype system's finger-clip optical sensor to
13 generate SpO2 measurement values," as well as the
14 other signals which were "performed only on the
15 processing board in the processing module."

16 Q. So, based on that analysis, do the
17 claims require -- does this claim limitation
18 require determining the SpO2 measurement value by
19 the processing board external to the mobile
20 computing device?

21 A. Isn't that the same question you
22 have asked me multiple times this morning?

1 Q. No, I am asking you about specific
2 limitations. We were talking about Claim 13
3 limitations before.

4 Right now I am talking about
5 Limitation 1K.

6 I'm asking based on this analysis,
7 does Limitation 1K require that the Sp02
8 measurement value is determined by the processing
9 board, external to the mobile computing divide?

10 MR. WENTZEL: Asked and answered.

11 THE WITNESS: I believe I have
12 answered that multiple times by referring to
13 Claim 1 where I stated, "When processing of
14 the one or more signals to generate Sp02
15 measurement values is performed only on the
16 processing board."

17 BY MR. BISENIUS:

18 Q. I would like to move forward to
19 Paragraph 124 of your declaration.

20 A. I am at 124.

21 Q. Just above Paragraph 124, at the end
22 of Paragraph 123, this is Figure 1A of the '507

1 patent; is that correct?

2 A. That is my annotated version of --
3 let me see, Figure 1A.

4 Q. And in Paragraph 124, you are still
5 discussing the system of the '507 patent; is that
6 correct?

7 A. When I refer to the specification,
8 that is the '507 patent, yes.

9 Q. You have stated in Paragraph 124
10 that the "Sensor 110 provides data in the form of
11 an output signal indicative of light that is
12 measured from body tissues."

13 What makes the output signal
14 indicative of light measured from body tissues?

15 A. So, the '507 patent describes this
16 in Column 1 around about Line 28.

17 "Oximetry utilizes a noninvasive
18 optical sensor to measure physiological
19 parameters of a patient. In general, the sensor
20 has light emitting diodes that transmit optical
21 radiation into a tissue site and a detector that
22 responds to the intensity of the optical

1 radiation after absorption operation (e.g. by
2 transmission or transreflectance), by, for
3 example, pulsatile arterial blood flowing within
4 the tissue site."

5 Q. So, would a change in voltage of an
6 analog output signal be indicative of light in
7 your opinion -- sorry. Let me re-ask that.

8 Would a change in an -- in voltage
9 of an analog output signal be indicative of light
10 that is measured from body tissues, in your
11 opinion?

12 A. A change in voltage. What -- where
13 specifically are you are referring to?

14 Q. I'm just referring to the system of
15 the '507 patent. In general, looking at the
16 example from Figure 1A that you have repeated in
17 your declaration, the cable going from the
18 optical sensor to the processing board.

19 If there were a change in voltage of
20 an analog signal along that cable, would that be
21 indicative of light that is measured from body
22 tissues?

1 A. That seems too vague. The voltage
2 from what? Are you talking about the voltage
3 from the photo detector, for example?

4 Q. I'm talking about the signal that
5 is -- the output signal travelling from the
6 optical sensor to the processing board -- so, I
7 will back up a second.

8 In Paragraph 124 when you used the
9 term "output signal," you are referring to the
10 signal travelling from the optical sensor to the
11 processing board; is that correct?

12 A. I am not. That is the description
13 in, from the patent. It explains that the
14 Sensor 110 provides data in the form of an output
15 signal indicative of light.

16 Q. So, my question is, if the output
17 signal were an analog signal, would a change in
18 voltage of that analog signal be indicative of
19 light that is measured from body tissues?

20 A. The '507 patent doesn't characterize
21 or limit what that signal may be.

22 So, when you say an analog voltage,

1 it is possible it could be that but that is
2 not -- the claims don't, you know, mention that
3 specifically.

4 Q. If the output signal were an analog
5 signal, would a change in current of that analog
6 signal be indicative of light that is measured
7 from body tissues?

8 A. I will just refer to what the claim
9 requires which is just helping one or more
10 signals responsive to light without trying to
11 limit it by, you know, additional descriptors
12 there.

13 Q. Okay. Let me clarify. I'm not
14 trying to limit the claim. I'm asking you if
15 these scenarios would fall within the scope of
16 the claim, would this be an example of something
17 that would satisfy the claim.

18 So, I'm not asking you to say it is
19 the only example. I'm asking you if this
20 specific example would fall within the scope of
21 the claims.

22 And the question is, if the output

1 signal from the optical sensor to the processing
2 board were an analog signal. And the current of
3 that analog signal were to change, would that be
4 indicative of light that is measured from body
5 tissues?

6 A. So, we are now not talking about
7 the, a specific '507 embodiment. We are not
8 talking about Figure 1A that we were talking
9 about.

10 You are now asking me a hypothetical
11 general description of what a -- well, yeah, I'm
12 not sure what -- yeah, can you clarify, please?

13 Q. I'm asking you if -- I am asking you
14 a hypothetical example. I'm asking you if this
15 hypothetical example would fall within the scope
16 of the independent claims, Claim 1, Claim 13 of
17 the '507 patent, specifically referring to the
18 output signal.

19 If the output signal were an analog
20 signal and the current were to change, would that
21 be indicative of light that is measured from body
22 tissues?

1 A. Again, when you say the output
2 signal, we are talking about the photo detector
3 here?

4 Q. Here you have stated that the output
5 signal -- in your quote from the '507 patent, is
6 it true that you are stating that the output
7 signal is the signal from the optical sensor to
8 the processing board?

9 A. Yes, but now we are talking about
10 back to the '507 and that specific embodiment.
11 You seem to be then asking a more general
12 hypothetical case.

13 Q. And I'm asking you, would that
14 example of a change in current of an analog
15 signal travelling from the optical sensor to the
16 processing board be indicative of light that is
17 measured from body tissues?

18 A. I want to be, you know, very clear,
19 because again we seem to be talking
20 hypothetically here.

21 And an output signal from a photo
22 detector may have a varying voltage or a varying

1 current that changes, responsive to light.

2 But, like I said, we are now talking
3 about hypothetical case, but I am just giving
4 you, you know, that hypothetical possible setup.

5 Q. Later in Paragraph 124 on the next
6 page, you state that "Sensor data is transmitted
7 from Sensor 110 along the first Cable 120 to the
8 Processing Module 130 which can apply noise
9 filtering and signal processing techniques
10 described below."

11 Do you see that?

12 A. I see that, yes, uh-huh, on Page 65.

13 Q. What would a POSITA have understood
14 the term "sensor data" to mean?

15 A. The sensor data we look at the --
16 let's see. We look at the specification. And I
17 have some descriptions of the specification in
18 Paragraph 124.

19 So, as we talked about earlier, we
20 have the statement, "Sensor 110 provides data in
21 the form of an output signal indicative of
22 light."

1 And then we have the sensor detect
2 response to the intensity of the light by
3 outputting data.

4 And then the sensor data is
5 transmitted from Sensor 110 along the first
6 Cable 120 to the processing module.

7 So, we have those descriptions.
8 Also -- let's see. We have in Column 6 of the
9 patent, it talks about -- this is Column 6,
10 Line 3.

11 "The Processing Module 130 drives
12 operation at the Sensor 110 and receives raw
13 detected signals from the Sensor 110."

14 And, "The Processing Module 130
15 processed the vortex signal to determining a
16 physiological measurement."

17 So, I believe your question was what
18 is that sensor data? That is the data coming
19 from the detector in the optical sensor.

20 Q. Is the sensor data required to take
21 a specific form by the '507 patent?

22 A. What do you mean by specific form?

1 Can you give me an example. Well, let me --

2 Q. Is the sensor data required to be an
3 analog signal by the '507 patent?

4 A. The claims say an optical sensor
5 configured to output one or more signals
6 responsive to light.

7 And then when you look at the
8 specification, you can see that it is referring
9 to the signals from the detector prior to any
10 processing.

11 So, it would be the, as it, excuse
12 me, uses the term, excuse me, uses the terms "raw
13 detected signals," for example, in the
14 specification.

15 And as we just read in
16 Paragraph 124, "The Sensor 110 provides data in
17 the form of an output signal indicative of
18 light."

19 So, the form of the signal there is
20 prior to any processing.

21 Q. So does the term "output one or more
22 signals responsive to light" in Claim 1 require a

1 signal to be an unprocessed signal?

2 A. So, in Paragraph 123, I state, "In
3 my opinion, a POSITA would have understood that
4 the plain and ordinary meaning of one or more
5 signals responsive to light output by the optical
6 sensor refers to data that is actually acquired
7 with the optical sensor."

8 So, that is prior to any processing.

9 Q. So, looking at your description
10 here, in the first sentence of Paragraph 123,
11 would data that is conveyed via a digital signal
12 fall within the scope of one or more signals
13 responsive to light?

14 A. A digital signal would require a
15 processing by an analog to a digital converter to
16 change an analog signal to a digital signal.

17 And so, that is a processing step.

18 Q. So, in your opinion, would that fall
19 outside of the scope of one or more signals
20 responsive to light?

21 A. Yeah, I think I clearly state in
22 Paragraph 123, it is "the one or more signals

1 responsive to light is output by the optical
2 sensor refers that the data is actually acquired
3 with the optical sensor prior to any processing."

4 Q. So, converting that data to a
5 digital form would fall outside of the data
6 actually acquired, in your opinion; is that
7 correct?

8 A. It would no longer be the data
9 actually acquired with the optical sensor.

10 Q. Does the term, "one or more signals
11 responsive to light" require the sensor data to
12 be raw, a raw signal?

13 A. What do you mean by raw?

14 Q. Would it require it to be an
15 unprocessed signal?

16 A. Just so we are clear, would what
17 require it to be a --

18 Q. The signals recited in the term "one
19 or more signals responsive to light," does that
20 term, "one or more signals responsive to light,"
21 require that the signals be unprocessed signals?

22 A. It requires that it is the data

1 actually acquired with the optical sensor prior
2 to any processing.

3 So, if the you want to use the term
4 "raw" in this context, then it is -- it would be
5 the signal coming from the optical sensor.

6 Q. I would like to turn the page -- or
7 sorry, back up a bit to Paragraph 111 of your
8 declaration.

9 A. Paragraph 111?

10 Q. Correct.

11 A. Yes, I am at 111 now.

12 Q. In this paragraph, you are
13 discussing the D'Angelo reference, correct?

14 A. So, let's see. This is part of
15 Apple's cited references, D'Angelo. So, 111 is
16 discussing D'Angelo, yes.

17 Q. In Paragraph 111, you state that the
18 management device described by D'Angelo collects
19 sensor data.

20 Is that correct?

21 A. "D'Angelo discusses a data logging
22 management device that continues to collect

1 sensor data, and stores it in the storage module
2 on the management device."

3 Q. Does your use of the term "sensor
4 data" in this paragraph have the same meaning as
5 it does in Paragraph 124 that we were just
6 discussing?

7 A. In Paragraph 124, we are talking
8 about statements in the specification. We are
9 looking at the specification further explains
10 that the sensor data is transmitted from
11 Sensor 110. And so that is unprocessed sensor,
12 unprocessed optical signal data.

13 The -- let me refer to D'Angelo.
14 The D'Angelo reference does not state explicitly
15 what the data stored on the micro SD card is.

16 It refers that it can receive data
17 from a variety of sensors for behavior
18 recognition, for example.

19 So, the sensor data is definitely
20 not the same as the, the unprocessed signals that
21 we were referring to in Paragraph 124.

22 Q. So, the sensor data that you are

1 talking about with respect to D'Angelo here would
2 not qualify as the one or more signals recited in
3 the claims because it has been processed; is that
4 correct?

5 A. So, the data --

6 So, basically to be able to store
7 analog signals, you have to process them, go
8 through an A to D converter and whatever the
9 steps.

10 And so the micro SD card that
11 D'Angelo is using will be storing processed data
12 of some type. As I said, very different to how
13 we were previously referring to data in the
14 context of the, my Paragraph 124 for the '507
15 patent.

16 MR. BISENIUS: It hasn't quite been
17 an hour yet but I am about to switch
18 documents. Would now be a good time for a
19 break?

20 THE WITNESS: Yes, that would be
21 great. And it is nearly noon time on the
22 east coast here. So, could we take an hour

1 for lunch?

2 MR. BISENIUS: Yeah, should we --
3 does 55 minutes sound good? We meet at 50
4 after the hour?

5 (Recess taken -- 11:53 a.m.)

6 (After recess -- 12:49 p.m.)

7 BY MR. BISENIUS:

8 Q. I would like to talk to
9 Exhibit 1011, which is the Mendelson reference.

10 (Whereupon, previously marked
11 Exhibit 1011,
12 first referral.)

13 BY MR. BISENIUS:

14 Q. Could you please grab that?

15 A. Yes. Yes, I have that.

16 Q. When I use the term Mendelson, you
17 understand I am referring to Exhibit 1011,
18 correct?

19 A. Yes.

20 Q. You are a coauthor of this paper; is
21 that correct?

22 A. Yes.

1 Q. This paper was presented at the IEEE
2 EMBS Annual International Conference held
3 August 30 to September 3, 2006, correct?

4 A. Yes, that was the date of the
5 conference.

6 Q. Were you involved in presenting this
7 paper at that conference?

8 A. Yes, I was at the conference.

9 Q. Did you attend other presentations
10 while you were at the conference?

11 A. I must have done -- I don't
12 remember.

13 Q. Have you attended the IEEE EMBS
14 Annual International Conference in other years
15 besides 2006?

16 A. I don't recall.

17 Q. This paper was included in the
18 conference proceedings; is that correct?

19 A. Yes, that is what we are looking at
20 in the exhibit is the proceedings of the
21 conference.

22 Q. Did the attendees of the conference

1 receive a collection of the conference

2 proceedings while at the conference?

3 A. I don't recall. But, I don't
4 believe so. I believe the proceedings would have
5 been made available some time after the
6 conference.

7 Q. Turning to Page 3 of Mendelson, I
8 want to talk about Figure 3 on the lower left.

9 This is showing a display of the
10 user interface of the mobile device in Mendelson;
11 is that correct?

12 A. So, on Page 3 it says, "The user
13 interacts with wearable system using a simple GUI
14 as depicted in Figure 3."

15 And Figure 3 shows a sample PDA
16 graphical user interface.

17 Q. What is being depicted in the
18 waveform shown in Figure 3?

19 A. I believe that is described in the
20 paper. That looks like it is the PPG waveform.
21 In fact, here we go. So, yeah.

22 On Page 3, "The most prominent

1 portion of the GUI displays the scrolling PPG
2 waveform shown in Figure 3."

3 Q. What does it mean for the waveform
4 to be scrolling?

5 A. It means that new information is
6 coming in and it is updating the display.

7 Q. Continuing with the GUI shown in
8 Figure 3. This user interface is also showing
9 numerical values for measured SpO2 and heart rate
10 parameters; is that correct?

11 A. So, on Page 3, I think you are
12 reading the next sentence there, "Numerical SpO2
13 and HR values are displayed in separate indicator
14 windows."

15 Q. Are each of the PPG waveform, the
16 SpO2 parameter, and the heart rate parameter for
17 the same person?

18 A. On that screen, that would be
19 showing information for one individual. It
20 describes that above. It allows the user to
21 select which individual to monitor.

22 So, the information will be for one

1 individual.

2 Q. Would that include --

3 A. But we see --

4 Q. Sorry, go ahead.

5 A. That we see on that particular
6 display screen.

7 Q. So, the display of orientation and
8 activity level on this screen would also be for
9 that same person; is that correct?

10 A. For one individual.

11 Q. In Figure 3, it also shows controls
12 for disconnecting from the sensor or turning the
13 sensor off.

14 Is that correct?

15 A. Let me see. Were you reading from
16 part of Mendelson there?

17 Q. Well, I'm basing it on the actual
18 display in Figure 3.

19 A. So can you ask your question again,
20 please?

21 Q. The user interface shown in Figure 3
22 also shows system controls for disconnecting from

1 the sensor or turning the sensor off; is that
2 correct?

3 If it would help -- a zoomed in
4 version of Figure 3 is included in the petition
5 if you want to turn to the petition.

6 A. Or I can -- let me open the
7 electronic version of Mendelson. Let's see.
8 Where is that? I don't see that in your list of
9 exhibits I don't think.

10 Q. Well, the petition itself is not an
11 exhibit. It is one of the papers. I thought I
12 included that in the link.

13 A. Let me have a look.

14 Q. But, you could also, Mendelson
15 Exhibit 1011 should also be included. If you
16 want to go directly to the PDF in the same link.

17 A. I don't see that here.

18 Q. I'm sorry. 1011, I mean 1011.

19 A. I don't see that in your list of
20 exhibits. I see 1010, 1009.

21 Q. I thought I had uploaded it. Give
22 me a second to see. Oh, it must not have --

1 here, let me add it.

2 Okay. Refresh and see if that
3 works.

4 A. Okay. Here we go.

5 Q. Great.

6 A. So, I'm just opening that up. And
7 let me see if I can zoom in then.

8 Q. So, I'm talking about the box that
9 says System Control. Do you see that?

10 A. Yes, I do.

11 Q. And, it includes -- well, it further
12 states "disconnect." And then it has got a green
13 rectangle and sensor on it has a green rectangle.

14 So, my question is, are these system
15 controls also for the sensor from which this
16 information, the SpO2 and heart rate information,
17 is coming from -- I can rephrase that better.

18 Are these system controls for the
19 sensor being worn by the same person as these SpO2
20 and heart rate measurements are being taken from?

21 A. Yes. And we can look at Mendelson
22 again, Column 3. "Once a specific wearable unit

1 is selected, the user connects to the remote
2 device via the system control button -- sorry,
3 the system control panel that manages the
4 connection and sensor control buttons."

5 Q. Okay. So, the user of the PDA would
6 have to select a sensor to connect to, and then
7 they would receive the information from that
8 sensor; is that correct?

9 A. The Mendelson at the top of page --
10 column, sorry, Page 3. "In cases of multiple
11 wearable devices, it also allows the user to
12 select which individual to monitor."

13 Q. Are you aware of any disclosure in
14 Mendelson of displaying vital sign information
15 for multiple people simultaneously?

16 A. By simultaneously, you mean on the
17 same screen?

18 Q. Yes. Simultaneously on the same
19 screen, on the same device.

20 A. So, Mendelson, as we see there, from
21 my recollection we just showed one individual at
22 a time.

1 The PDA was collected information
2 from multiple devices, but we were only showing
3 one individual on the screen at a time.

4 Q. The Mendelson paper describes that
5 the system allows the person with the PDA to
6 remotely monitor someone wearing the sensor
7 module; is that correct?

8 A. Where are you reading from now?

9 Q. I am not reading it specifically
10 from Mendelson. I am just talking about the
11 description of the system in general.

12 So, for example, we can look at
13 Page 2. It has got a description of the sensor
14 module. That is in italics. And then the next
15 paragraph talks about the receiver module. That
16 is in italics. The next page has the PDA in
17 italics for different components.

18 My question is, that -- is it
19 correct that the system allows the person with
20 the PDA to remotely monitor someone wearing the
21 sensor module?

22 A. That was the main purpose of the

1 system design as we see reflected in the title
2 there.

3 It is a wearable pulse oximeter
4 device for remote physiological monitoring. And
5 so the medic would use the PDA to remotely
6 monitor the individuals.

7 Q. So, if someone were to take the
8 Mendelson system and add additional
9 functionality, but it still retained all of the
10 same functions to remotely monitor the person or
11 persons wearing sensor modules, that would still
12 satisfy this goal of the Mendelson system; is
13 that correct?

14 MR. WENTZEL: Objection, vague.

15 THE WITNESS: I don't understand
16 when you say someone would add something to
17 the system, can you be more specific about
18 what specifically they would be adding?

19 BY MR. BISENIUS:

20 Q. Let's say someone added just some
21 additional functionality but didn't take away any
22 of the functionality described in the paper.

1 And so it still has all of the
2 remote monitoring functionality described in the
3 paper. That would still achieve the goal of the
4 system; is that correct?

5 MR. WENTZEL: Same objection.

6 THE WITNESS: I would need to
7 know -- you need to be more specific about
8 what functionality you are proposing to add.
9 Without that I wouldn't be able to say
10 whether it would, you know, defeat the
11 purpose.

12 BY MR. BISENIUS:

13 Q. I would like to go back to your
14 declaration, Exhibit 2037. And I am actually
15 going to go back to the same part we were
16 discussing earlier in Paragraph 124.

17 A. Okay.

18 Q. And I'm on the second page of
19 Paragraph 124.

20 A. Yes, I'm there now.

21 Q. About halfway down the page, as we
22 discussed earlier, here you state, "A POSITA

1 would have understood that the plain and ordinary
2 meaning of 'one or more signals responsive to
3 light' output by the optical sensor and received
4 by the processing board refers to data that is
5 actually acquired with the optical sensor."

6 Do you see that?

7 A. I see that.

8 Q. So here you are talking about your
9 interpretation of the claim language of the '507
10 patent; is that correct?

11 A. Let me refresh what this is related
12 to. So, this is in the section starting on
13 Page 63 where I state that Mendelson does not
14 disclose an optical sensor outputting one or more
15 signals responsive to light, on to the plain
16 meaning of one or more signals responsive to
17 light.

18 And then in Paragraph 124, I am
19 referring to the specification of the '507
20 patent.

21 Q. But is it correct that in the
22 sentence we were just talking about the quoted

1 language "one or more signals responsive to
2 light," there you are referring to the claim
3 language of Claims 1 and 13; is that correct?

4 A. Yes. That is the -- let me just get
5 the claims again here. Yes. One or more signals
6 responsive to light, from Claim 1, for example.

7 Q. Turning -- or moving forward to the
8 next paragraph, 125.

9 Here you are discussing the
10 Mendelson reference with respect to that term,
11 "one or more signals responsive to light." Is
12 that correct?

13 A. So, let me see. 125 is, "Applying
14 the plain and ordinary meaning of 'one or more
15 signals responsive to light,' it is my opinion
16 that Mendelson fails to disclose this
17 limitation."

18 Q. On Page 66, which is still part of
19 Paragraph 125, you have reproduced a block
20 diagram of the sensor module of Mendelson's
21 system; is that correct?

22 A. Yes. The top of Page 66, you can

1 see Exhibit 111, figure or Page 2 -- or Figure 2.

2 Q. And, just below that figure, you
3 state, "The sensor module has a photodiode that
4 outputs a signal corresponding to the detected
5 light."

6 Do you see that?

7 A. Yes. The statement there, yes.

8 Q. This signal that you have mentioned
9 here is represented by the black arrow from the
10 photodiode to the trans-impedance amplifier, in
11 the upper left of Mendelson's sensor module; is
12 that correct?

13 A. That is correct.

14 Q. Now when you say the --

15 A. I'm sorry, let me just. I want to
16 clarify, because I see there is a black arrow
17 that goes through that processing chain.

18 So, I want to be clear that when you
19 said the black arrow, it is the black arrow
20 leaving the photodiode and going to the
21 trans-impedance amplifier which is the signal
22 corresponding to the detected light.

1 Q. Correct. That is what I was asking
2 about, that specific arrow on the far upper left.

3 So, when you say that the photodiode
4 outputs a signal, this is because the signal is
5 leaving the photodiode and then received by a
6 different component within the module; is that
7 correct?

8 A. I think my description is quite
9 clear. The photodiode outputs a signal
10 corresponding to the detected light and then that
11 photodiode signal is subjected in the
12 trans-impedance amplifier and then the rest of
13 the devices.

14 Q. Do you recall our conversation
15 regarding the term "sensor data" and "data that
16 is actually acquired" with the optical sensor,
17 from this morning?

18 A. You would have to be more specific
19 because when you say sensor data, you know, so
20 can you --

21 Q. So, specifically with respect to
22 Paragraph 124, the preceding paragraph, you use

1 the term "sensor data" and "data that is actually
2 acquired," with respect to the '507 patent.

3 Do you see that?

4 A. So, in Paragraph 124, I see, "The
5 specification further explains the sensor data is
6 transmitted from Sensor 110 along the first
7 Cable 120 to the Processing Module 130."

8 Is that what you were referring to?

9 Q. Correct. So, just to summarize, to
10 repeat, the first sentence on Page 66, you are
11 discussing a signal corresponding to the detected
12 light.

13 Is this signal corresponding to the
14 detected light that is output from the photodiode
15 sensor data, as that term is used in the '507
16 patent?

17 A. When you say how that term is used
18 in the '507 patent, we talked about the claim
19 language or --

20 Q. So, the term "sensor data" doesn't
21 actually appear in the claim, so I'm not asking
22 about the claim right now.

1 I'm talking about -- you have used
2 the term "sensor data" in Paragraph 124 referring
3 to a few different sections of the '507 patent
4 and then you've used the term "data that is
5 actually acquired."

6 So, right now I'm asking would -- do
7 you consider that signal corresponding to the
8 detected light that is output from the photodiode
9 to be sensor data, as that term is used in the
10 '507 specification?

11 A. I, on Page 66, I don't use the term
12 "sensor data."

13 I say, "The sensor module is a
14 photodiode that outputs a signal corresponding to
15 the detected light."

16 My use of the term "sensor data" in
17 Paragraph 124 is from the specification.

18 So, two different -- we were talking
19 about Mendelson in one case and we were talking
20 about the '507 patent in another case.

21 Q. Is the signal corresponding to the
22 detected light that is output by the photodiode

1 of Mendelson's sensor module data that is
2 actually acquired?

3 A. Where are you using -- or where is
4 that term or statement coming from, when you say
5 a data that is actually acquired? I need to
6 understand the context for this.

7 Q. Yes. In Paragraph 124, halfway down
8 the page you stated, "Accordingly, in my opinion,
9 a POSITA would have understood that the plain and
10 ordinary meaning of one or more signals
11 responsive to light output by the optical sensor
12 and received by the processing board refers to
13 data that is actually acquired with the optical
14 sensor."

15 And so, I'm asking, just looking at
16 that first black arrow coming out of the
17 photodiode, which you referred to as the signal
18 corresponding to the detected light in the
19 Mendelson sensor module, is that signal
20 corresponding to the detected light data that is
21 actually acquired with the optical sensor?

22 A. I want to be clear here, because in

1 Paragraph 124, I am referring to the '507 patent
2 and that is referring to the optical sensor.

3 The signal we are looking at in that
4 top left corner is the signal leaving the
5 photodiode.

6 So, that signal is the data acquired
7 by the photodiode in Mendelson.

8 Q. Okay. Then, let me rephrase that.

9 Looking at Mendelson sensor module,
10 which you have shown here on Page 66, what you
11 have referred to as the signal corresponding to
12 the detected light, is that the data that is
13 actually acquired by Mendelson's photodiode?

14 A. Yes.

15 Q. So, I want to continue with this
16 figure of the sensor module.

17 It shows that arrow going into a
18 trans-impedance amplifier. And then there is a
19 black arrow going from the trans-impedance
20 amplifier into a box labeled ambient light
21 reject.

22 Do you see that?

1 A. Yes.

2 Q. Is that signal from the
3 trans-impedance amplifier to the ambient light
4 reject data that is actually acquired by
5 Mendelson's photodiode?

6 A. No, because now we have started
7 going through processing steps. The only data
8 that is acquired by the photodiode is that
9 left -- top left arrow that we are talking about
10 before.

11 As soon as you start going through
12 to the right of that picture, you are now going
13 through a processing steps which is modifying the
14 signal.

15 Q. So, it is your opinion that taking
16 the signal output by the photodiode, which you
17 have called the signal corresponding to the
18 detected light, and amplifying that signal makes
19 it no longer the data that is actually acquired
20 by the photodiode; is that correct?

21 A. As soon as it goes through that
22 amplifier, it is no longer the direct signal that

1 was acquired by the photodiode that has been
2 modified.

3 Q. But we agree that the signal coming
4 directly from the photodiode would be data that
5 is actually acquired by the photodiode; is that
6 correct?

7 A. I think I have answered that
8 question. I will just state what I put in
9 Paragraph 66 again, "The sensor module is a
10 photodiode that outputs a signal corresponding to
11 the detected light."

12 Q. So, I want to talk specifically
13 about the claim language of Element 13A with
14 respect to this diagram of Mendelson's sensor
15 module.

16 So, if you could have the language
17 of Claim 13 in front of you and this figure in
18 front of you at the same time, that would be
19 helpful.

20 Element 13A -- if you are looking
21 actually at a copy of the '507 patent,
22 Element 13A starts at Column 21, Line 45.

1 A. Which claim element are we -- 13A,
2 did you say?

3 Q. Yes. 13A which starts at -- so, the
4 designations of claim elements such as 13A and
5 13B, those are things that were assigned in the
6 petition.

7 A. Yes, yep.

8 Q. And so, I am relaying to you that
9 the element starting at Line 45 of Column 21 is
10 Element 13A, which has been identified as
11 Element 13A. Do you see that?

12 A. So, I have also found that in my
13 declaration that says help putting -- this is on
14 Page 25, Paragraph 52, when we were talking about
15 the Muhsin declaration.

16 And we got Limitation 13A,
17 "Outputting, from an optical sensor of an SpO2
18 measurement system, one or more signals
19 responsive to light from a light source
20 attenuated by tissue of the user at a measurement
21 site, said one or more signals responsive to an
22 oxygen saturation of said tissue."

1 Is that the correct element you
2 wanted me to look at?

3 Q. Correct. So, you are aware that in
4 the petition, the petitioner has mapped
5 Mendelson's entire sensor module to the claimed
6 optical sensor here. Is that correct?

7 A. I may remember seeing that. I don't
8 remember the specifics of the petition, no.

9 Q. So, for sake of this line of
10 questioning, assume that in the petition's
11 application of Mendelson to Claim 13, we have
12 mapped Mendelson's entire sensor modules, the
13 entire thing shown in Figure 2 that you have on
14 Page 66. We have mapped that to the claimed
15 optical sensor recited in Element 13A.

16 You can assume that for this line of
17 questioning.

18 So, if that entire sensor module is
19 the optical sensor, would that outputting of the
20 signal corresponding to the detected light from
21 the photodiode of the sensor module to the
22 trans-impedance amplifier of the sensor module

1 satisfy this requirement for outputting from an
2 optical sensor of an SpO2 measurement system one
3 or more signals responsive to light from a light
4 source attenuated by tissue of the user at a
5 measurement site?

6 A. That is a very complicated question.
7 And the premise is that I don't believe that
8 mapping of the petition is correct regarding the
9 claim language.

10 So, it seems like the whole premise
11 of that question I don't believe.

12 So, can we -- can you rephrase the
13 question or ask me something different to that?

14 Q. Yes. So, in Paragraph 124, as we
15 have been discussing, you are saying that the
16 claim term "one or more signals responsive to
17 light" in the claims requires that it be data
18 that is actually acquired by the optical sensor.

19 And we have agreed that the signal
20 corresponding to the detected light that is
21 output by Mendelson's photodiode and received by
22 Mendelson's trans-impedance amplifier is data

1 that is actually acquired by Mendelson's
2 photodiode.

3 So, I'm asking you if that act of
4 outputting that data actually acquired from the
5 photodiode to another component -- this
6 trans-impedance amplifier within the sensor
7 module -- would that satisfy the claim language
8 of outputting from an optical sensor of an SpO2
9 measurement system one or more signals responsive
10 to light from a light source attenuated by tissue
11 of the user at a measurement site?

12 A. So, in my Paragraph 123, I say, "It
13 is my opinion a POSITA would have understood that
14 the plain and ordinary meaning of one of more
15 signals responsive to light output by the optical
16 sensor refers to data that is actually acquired
17 with the optical sensor."

18 So, if we take the top left corner,
19 specifically the black arrow leaving the
20 photodiode there, that is the one or more signals
21 responsive to light.

22 Q. So, if we refer to Mendelson's

1 entire sensor module as the claimed optical
2 sensor, which is the mapping that has been
3 conveyed in the petition --

4 A. Which I disagree with.

5 Q. But, if we called that entire thing
6 the optical sensor. So, we are not saying just
7 the photodiode is the optical sensor.

8 If we are calling the entire sensor
9 module the optical sensor, would that
10 communication from the photodiode to the
11 trans-impedance amplifier be outputting by the
12 sensor module?

13 A. Again, your premise is totally
14 incorrect. That whole Mendelson's sensor module
15 is not, is not an optical sensor.

16 It consists of the photodiode and
17 then the whole processing chain that we see
18 there, microcontroller, where we do more
19 preprocessing with the signal averaging.

20 And then we packet the information.

21 So, it is incorrect to describe it
22 the way you did.

1 Q. Moving ahead to the next paragraph,
2 Paragraph 126, which starts on Page 67.

3 A. Yes, I am there.

4 Q. In the first sentence here you have
5 stated, "In my opinion a POSITA would have
6 understood that the sensor module and the
7 Mendelson system" -- sorry -- I read that wrong.

8 Starting over.

9 You have stated, "In my opinion a
10 POSITA would have understood that the sensor
11 module of the Mendelson system does not output
12 data actually acquired with the sensor module
13 because it only outputs only average red and
14 infrared PPG samples to the receiver module."

15 Do you see that?

16 A. That is what I see in the start of
17 Paragraph 126.

18 Q. And then going on to this paragraph,
19 you have described operations of Mendelson's
20 sensor module; is that correct?

21 A. Well, going on -- so yeah. In
22 Paragraphs 126 and 127, 128, 129, et cetera, I am

1 describing the operation of Mendelson's sensor
2 module.

3 Q. So, sticking with Paragraph 126 for
4 now. In the third sentence you have stated,
5 "While the red LED is on, the microcontroller of
6 the sensor module takes five consecutive samples
7 of red light intensity using the module's
8 photodiode."

9 Do you see that?

10 A. I see that, yes.

11 Q. Can you please identify where in the
12 Mendelson reference this functionality is
13 actually described?

14 Can you identify where in Mendelson
15 it describes the sensor module takes five
16 consecutive samples of red light intensity?

17 A. That is not described in the
18 Mendelson paper.

19 Q. So, Mendelson doesn't actually
20 disclose that?

21 A. Well, the Mendelson paper doesn't
22 explicitly use those words.

1 But a POSITA would have known that
2 the distal signal averaging I'm describing there
3 would be part of the processing.

4 Q. How would a POSITA have known that
5 the sensor module would take five consecutive
6 samples of red light?

7 A. A POSITA might not have known that
8 it would take in specifically five samples.
9 Could have taken, you know, six. Could have
10 taken ten samples. But, that is a commonly
11 undisturbed technique for digital signal
12 averaging to try and reduce the effects of noise.

13 Q. Why wouldn't have just a single
14 sample of red light have been used?

15 A. Like I have just explained, to be
16 able to use digital signal averaging, to try and
17 reduce the effects of noise. If you just take
18 one sample, it can be corrupted by noise making
19 the measurement inaccurate.

20 Q. Are you relying on any documentation
21 in the record to support that assertion?

22 A. Well, that is a, just a well-known

1 digital signal averaging technique for any low
2 level processing of signals.

3 Q. Two sentences later you state, "Once
4 converted, those five red PPG samples are summed
5 by the sensor module's microcontroller and
6 temporarily stored by the sensor module's
7 microcontroller."

8 Can you identify where in Mendelson
9 it describes that the red PPG samples are summed
10 by these sensor module's microcontroller?

11 A. Again, that is not explicitly
12 described in the Mendelson paper.

13 But, that is part of that overall
14 digital signal averaging I was just describing.

15 Q. In the next sentence you state,
16 "After the red LED turns off, the sensor module
17 immediately turns on the infrared LED for the
18 same short period of time and follows the same
19 process to generate five infrared PPG samples
20 that are then summed by the microcontroller and
21 temporarily stored by the sensor module's
22 microcontroller."

1 Can you identify where in Mendelson
2 it describes that the sensor module takes five
3 consecutive infrared PPG samples?

4 A. Again it doesn't specifically state
5 that in Mendelson. But, a POSITA would have
6 understood that the same digital signal averaging
7 that you do on the red light, you would also do
8 on the infrared.

9 Q. Does Mendelson anywhere describe
10 that the sensor module sums the five infrared PPG
11 samples?

12 A. Again, Mendelson doesn't use that
13 exact term, but that is part of the process of
14 doing digital signal averaging.

15 Q. Does Mendelson describe that the
16 microcontroller of the sensor module stores the
17 sum of the five infrared PPG samples?

18 A. I don't believe the Mendelson paper
19 explicitly states that.

20 But, the microcontroller has to
21 store that information to be able to assemble the
22 packets that are then sent to the RF transceiver.

1 Q. Moving ahead to Paragraph 127. In
2 the first sentence you state, "At the conclusion
3 of each measurement cycle the set of summed PPG
4 samples is divided by five (the number of
5 samples) resulting in one average red PPG sample
6 (which is temporarily stored in volatile memory
7 of the microcontroller) and one average infrared
8 PPG sample (which is temporarily stored in
9 volatile memory of the microcontroller)."

10 Can you identify where in Mendelson
11 it describes that the sensor module divides
12 summed PPG samples by five?

13 A. Again that is not explicitly stated
14 in Mendelson, but that is just the natural last
15 step of the digital averaging that I was
16 describing earlier.

17 Q. That is a pretty specific number.
18 And you've said -- you are stating what is
19 happening in the sensor module.

20 Did you qualify that anywhere in
21 here with saying that this would be one example
22 of how someone might have implemented Mendelson.

1 Because here it appears that you are
2 describing exactly how Mendelson works.

3 So, I'm wondering where you came up
4 with five samples specifically.

5 A. Well, I designed the system.

6 Q. So, would you need to be a designer
7 of the system in order to know these details
8 about how the system worked?

9 A. No, as I mentioned, digital signal
10 averaging was a very common technique. So, no.
11 Any POSITA would understand digital signal
12 averaging for these types of systems.

13 Q. But, in order to identify the
14 specific number of samples taken, would a POSITA
15 need to be a designer of the system or have
16 access to the system to deconstruct it?

17 A. I am confused by the question.

18 Do you mind either asking it again
19 or rephrasing that?

20 Q. So, here you have stated that
21 specifically it is five samples of each of the
22 red and the infrared samples that are taken.

1 In order to know that specific
2 number of five, would a POSITA need to be one of
3 the designers or otherwise have access to the
4 system itself to know that number?

5 A. No, a POSITA could have
6 independently used five. A POSITA might have
7 used a different number for their signal
8 averaging.

9 Q. In the next sentence of
10 Paragraph 127 you state, "Finally, only the
11 average red PPG sample and average infrared PPG
12 sample computed by the microcontroller are
13 processed into packets and transmitted to the
14 receiver module as shown below."

15 Can you identify where in Mendelson
16 it says that only the average red PPG sample and
17 average infrared PPG sample computed by the
18 microcontroller are processed into packets and
19 transmitted to the receiver module?

20 A. No. But, not specifically stated
21 that way in the Mendelson paper, but a POSITA
22 would have understood that after they had gone

1 through a digital averaging process, that is what
2 they would have then had processed into packets
3 and transmitted.

4 Q. Looking at the figure just below
5 this sentence in Paragraph 127, you have added
6 the text stating "average red PPG samples plus
7 average IR PPG samples transmitted to receiver
8 module."

9 Is that correct?

10 A. I see that on Page 68, yes.

11 Q. Did you add that text to this
12 figure?

13 A. Yes, I did.

14 Q. So, that text does not appear in the
15 Mendelson reference itself; is that correct?

16 A. That's correct. That is not shown
17 on Page 2 of the Mendelson paper.

18 Q. After this figure you state that,
19 "This light measurement cycle repeats every
20 12.5 milliseconds (i.e., at 80 Hertz) while the
21 system is in use."

22 Can you identify where in Mendelson

1 it describes that the light measurement cycle
2 repeats every 12.5 milliseconds or at a rate of
3 80 Hertz?

4 A. No. Those numbers are not
5 explicitly mentioned in the Mendelson paper.

6 But a POSITA would have understood
7 for this type of pulse oximeter device to work,
8 you need to take multiple measurements a second.

9 Q. It is a pretty specific number,
10 though. Wouldn't a POSITA have to have been a
11 designer or otherwise have access to the system
12 itself to know that specifically is an 80 Hertz
13 repetition?

14 A. A POSITA doesn't have to use those
15 exact numbers there. A POSITA may have picked
16 another number. May have picked 60 Hertz,
17 70 Hertz, 100 Hertz.

18 So, it doesn't really matter. That
19 is just the light sampling that a POSITA would
20 have used.

21 Q. Continuing to Paragraph 128. In the
22 first sentence there you state, "The sensor

1 module transmits the average PPG samples to the
2 receiver module every 0.5 seconds (i.e., at
3 2 Hertz) as a continuous data stream (in RF
4 packets)."

5 Can you identify where in Mendelson
6 it describes that the sensor module transmits
7 average PPG samples?

8 A. We -- you asked me that question
9 earlier. That Mendelson doesn't state explicitly
10 that data transmits average PPG signals.

11 But as I explained, a POSITA would
12 understand that after the digital averaging
13 steps, you would then have your average samples
14 which is what you would then transmit.

15 Q. Can you are identify where in
16 Mendelson it describes that the sensor module
17 transmits data every 0.5 seconds, i.e., at
18 2 Hertz.

19 A. Let's see. I don't think we
20 explicitly put that information into the
21 Mendelson paper.

22 You know, I should point out that we

1 are page limited in these papers here, and these
2 are relatively trivial details.

3 A POSITA or reader of this paper
4 would understand the basic processing step.

5 So, there is a lot of information
6 details that, you know, with four pages, if we'd
7 attempt to put all of that information in there,
8 we would have missed the big picture of what this
9 research project was all about which was a
10 wearable reflectance pulse oximeter for remote
11 physiological monitoring.

12 Q. I am going to skip ahead a few
13 paragraphs to Paragraph 133 of your declaration.

14 A. Yes.

15 Q. So, about three sentences in to this
16 paragraph you state, "Each of these steps
17 (conversion, amplification, filtration, computing
18 averages) means the information output by
19 Mendelson's sensor module is not raw detected
20 signals. Therefore, in my opinion, Mendelson
21 does not disclose the 'one or more signals' of
22 Claims 1 and 13."

1 Does the term "one or more signals
2 in Claims 1 and 13" require that the signal be a
3 raw signal?

4 A. First of all, you missed part of
5 that sentence there. Let me read it.

6 "Therefore, in my opinion, Mendelson
7 does not disclose the 'one or more signals' of
8 Claims 1 to 13 under Apple's construction of that
9 phrase in the Delaware litigation."

10 Where I am specifically stating in
11 here under this Subsection 2, where Mendelson
12 does not disclose an optical sensor outputting
13 one or more signals responsive to light or
14 processing board receiving those signals under
15 Apple's construction of one or more signals in
16 the Delaware litigation.

17 And, we have at the top of
18 Page 72 -- let me see. Actually at the bottom of
19 Page 71.

20 So, in Paragraph 132, "I understand
21 that in the Delaware litigation, Apple argues
22 that 'one or more signals' means raw detector

1 signals from the optical sensor."

2 And, "That a POSITA would have
3 understood 'one or more signals' does not refer
4 to signals that have been converted, amplified,
5 filtered or otherwise processed."

6 So, the fact that we have seen that
7 in Mendelson there is conversion, amplification,
8 filtration, computing averages, those are steps
9 that Apple specifically said, you know, are not
10 allowed when we are talking about raw detector
11 signals.

12 Q. Do you agree with the construction
13 you have discussed in Paragraph 132 of your
14 declaration?

15 MR. WENTZEL: Objection, vague.

16 THE WITNESS: Do I agree with what?

17 I'm sorry.

18 BY MR. BISENIUS:

19 Q. Do you agree with the construction
20 that you have identified in Paragraph 132 of your
21 declaration?

22 A. You are asking me do I agree with

1 Apple's construction --

2 Q. Correct.

3 A. -- of the one or more signals.

4 I think it is consistent with how I
5 consider one or more signals. It is before
6 signals have been processed in any form.

7 Q. I want to turn to Paragraph 89 of
8 your declaration.

9 THE WITNESS: If we are moving on to
10 a different topic, could we take a break?

11 MR. BISENIUS: Sure. Should we meet
12 at 55 after the hour?

13 THE WITNESS: That sounds good.
14 Thank you.

15 (Recess taken -- 1:42 p.m.)

16 (After recess -- 1:54 p.m.)

17 BY MR. BISENIUS:

18 Q. All right. I want to talk about
19 Paragraph 89 of your declaration. So, this is
20 still Exhibit 2037.

21 A. Yes, I am there.

22 Q. Here you have stated that you have

1 applied the plain and ordinary meaning of the
2 terms of the '507 patent, correct?

3 A. That is what I state there.

4 Q. So, is it your opinion that there is
5 no specialized construction required for any of
6 the claim terms of the '507 patent?

7 A. Yes. There is no explicit
8 construction required. I summarized that in the
9 next paragraphs, no construction required.

10 Q. And, in the next few paragraphs,
11 Paragraphs 90 through 94, you cite to
12 Exhibit 2029, which is the Parties' Joint Claim
13 Construction Brief from the District Court
14 proceeding.

15 Do you see that?

16 A. I do.

17 Q. Have you actually read the Parties'
18 Joint Claim Construction Brief from the District
19 Court proceeding?

20 A. I may have glanced at that to get
21 that information. I don't remember reading it in
22 detail. I'm not sure -- let me refresh my

1 memory. Let's have a look at Exhibit 2029.

2 (Whereupon, previously marked
3 Exhibit 2029,
4 first referral.)

5 THE WITNESS: It is not letting me
6 open this in the exhibits. Oh, sorry. No.
7 Let me try again.

8 Okay. Here we go.

9 BY MR. BISENIUS:

10 Q. If it is not working I can try
11 uploading it --

12 A. No. I've got it now. And I've got
13 it open. Yes, I remember reading this at some
14 point.

15 Q. So, specifically with respect to the
16 term "one or more signals," you have cited to
17 Pages 34 to 39 of the Joint Claim Construction.

18 Have you adopted Masimo's
19 understanding of the term "one or more signals"
20 as expressed in the Joint Claim Construction for
21 the purpose of your analysis in this declaration?

22 A. Well, my summary is I have applied

1 the plain and ordinary meaning of the terms of
2 the '507 patent.

3 And my understanding is that
4 Masimo's position is that no construction is
5 needed, so again it is the same plain and
6 ordinary meaning.

7 Q. I would like to turn to
8 Paragraph 109 of your declaration.

9 A. I am at 109.

10 Q. Here you are discussing the
11 Mendelson reference, correct?

12 A. So, 109, yes. This is all part of
13 that Section 1, Mendelson, Exhibit 1011.

14 Q. And in Paragraph 109, you are
15 discussing components of Mendelson's system,
16 including the sensor module we were discussing
17 earlier; is that correct?

18 A. So, the top of Page 56 is part of
19 Paragraph 109.

20 I talk about, "The Mendelson system
21 includes three wirelessly connected components:
22 the sensor module, the receiver module and the

1 PDA."

2 Q. At the top of Page 56, you refer to
3 it as "a sensor module worn by each injured
4 person."

5 Are the persons wearing Mendelson's
6 sensor module required to be injured?

7 A. No. The idea is that they would be
8 placed on the individuals. Some may be injured,
9 but some may not be injured.

10 Q. I want to go back to the Mendelson
11 reference, Exhibit 1011. And I'm on Page 3.

12 A. I'm on Page 3.

13 Q. On the right side, about halfway
14 down the page, it describes a scenario in which
15 medical personnel distributes sensors to multiple
16 casualties. Do you see that?

17 A. I'm not there yet. I'm on Page 3.
18 Left column or right column, whereabouts are you
19 reading?

20 Q. I'm looking at the right column
21 about halfway down. It is the paragraph that
22 starts with, "One of the unique features."

1 And towards the end of that
2 paragraph it discusses medical personnel
3 distributing sensors to multiple casualties; is
4 that correct?

5 A. Yes. Uh-huh.

6 Q. So, is it true that the Mendelson
7 paper contemplates that in at least some cases
8 the medical personnel using the PDAs will be in
9 close physical proximity to the people wearing
10 the sensor modules?

11 A. I think your question was is it
12 possible in some scenarios. And yes, that is
13 possible.

14 Q. But isn't it true here that it is
15 expressly describing a scenario in which the
16 medical personnel with the PDA is in close
17 physical proximity to the casualties wearing the
18 sensor, correct?

19 A. No. I don't read it how you are
20 summarizing that.

21 If we read the sentence before --
22 the couple of sentences before, "In this ad hoc

1 configuration, the system's integrity depends
2 only on the distance between each node. This
3 allows the PDA to communicate with a remote unit
4 that is beyond the PDA's wireless range."

5 It is possible that the medical
6 personnel could be distributing sensors that is
7 then picking up information from a remote injured
8 person through that ad hoc network.

9 Q. So, when it says that the medical
10 personnel quickly distributes sensors to multiple
11 casualties and began immediate triage, is the
12 immediate triage there for the multiple
13 casualties that have received the sensors?

14 A. To do triage, you can do triage on
15 any person that is wearing the sensor device.

16 Q. I'm going to go back to your
17 declaration again. And now I want to talk about
18 Paragraph 146.

19 A. Okay. I am at 146.

20 Q. All right. And this is a fairly
21 long paragraph. I want to talk about the part
22 that is on Page 81, near the top of Page 81.

1 And here you have stated, "A POSITA
2 would have understood as a matter of common sense
3 that the medic would directly monitor the person
4 right before them using ordinary medical
5 equipment, e.g., a finger-clip pulse oximeter
6 stethoscope, et cetera."

7 Do you see that?

8 A. I do.

9 Q. To conduct the monitoring that you
10 have described here, the medic would need to
11 carry this extra equipment with them, in addition
12 to the PDA that is already capable of displaying
13 that information.

14 Is that correct?

15 A. No. Let me back up a little bit --
16 let's see.

17 So, the bottom of Page 80 says,
18 "Rather than unnecessarily power the injured
19 person's Receiver Module, a POSITA would have
20 understood as a matter of common sense that the
21 medic would directly monitor the person right
22 before them using ordinary medical equipment

1 (e.g. a finger-clip, pulse oximeter, stethoscope,
2 et cetera) and apply the emergency medical care
3 that was warranted."

4 The wearable reflector pulse
5 oximeter that we designed gives you limited
6 physiological information. Nothing like the
7 amount of equipment that a medic would have
8 carried.

9 Q. Okay. So, backing up to where you
10 were just, at the beginning of Paragraph 146.
11 You stated, "The medic would not have used
12 Mendelson's PDA to power that injured person's
13 Receiver Module because remotely monitoring that
14 injured person with the PDA (via measurement sent
15 from the Receiver Module to the PDA) was no
16 longer necessary."

17 Do you see that?

18 A. So, this is part of Paragraph 146,
19 talking about the modification proposed by Apple,
20 when we are assuming a medic would use the PDA to
21 power the Receiver Module.

22 And, I am saying that a POSITA would

1 have understood that if a medic physically went
2 to an injured person on the field, the medic
3 would not have used Mendelson's PDA to power that
4 injured person's receiver module because
5 monitoring the injured person with the PDA was no
6 longer necessary.

7 Q. So, is it fair to say that in this
8 paragraph you are proposing an alternative
9 solution to powering the receiver module with the
10 PDA?

11 A. Not at all. I am explaining that
12 the proposal by the modification by Apple makes
13 no sense.

14 Q. So, you are saying a person would
15 never make that modification because there is an
16 alternative solution. Is that correct?

17 A. The -- I don't know whether the term
18 "alternative solution" is a good description.

19 The medic is now there and can use
20 ordinary medical equipment, as I state over on
21 Page 81, and apply the emergency medical care
22 that was required.

1 Q. But this technique would require
2 that medic to carry that additional "ordinary
3 medical equipment" with them, correct?

4 A. Well, that additional -- that
5 ordinary medical equipment would have much
6 greater capability than a wearable reflectance
7 pulse oximeter.

8 So, yes, they would be carrying that
9 equipment.

10 Q. Turning to Paragraph 152 of your
11 declaration. And I am looking towards the bottom
12 of the page.

13 A. Yes, I am on Page 86, Paragraph 152.

14 Q. This is about six lines up from the
15 bottom of the page.

16 You state, "A POSITA would have
17 understood that the receiver module already had
18 plenty of power to keep the device operational
19 throughout any of the emergency type events that
20 it was used to monitor?"

21 Do you see that?

22 A. I see that sentence, yes.

1 Q. How would the medical personnel be
2 able to predict when such emergencies were going
3 to happen and make sure that all of the receiver
4 modules had fully charged batteries?

5 A. That is a general question you are
6 asking me about.

7 Any medical professional going out
8 in the field or any first responder would go out
9 with the equipment and make sure it is adequately
10 charged.

11 Q. So, you have identified that one of
12 the -- sorry.

13 By you, I mean you as one of the
14 authors of the Mendelson paper, not you as the
15 author of this declaration. I will rephrase
16 that.

17 In the Mendelson paper it identifies
18 that one of the use cases is for firefighters; is
19 that correct?

20 A. So, in the abstract, at the end of
21 the abstract, it is, "The potential for use in
22 combat casualty care such as remote triage and by

1 first responders such as firefighters."

2 Q. So, wouldn't the solution you are
3 discussing in Paragraph 152 require that every
4 receiver module always have a full battery
5 because you never know when an emergency fire
6 call is going to come in?

7 A. Well, the same applies to
8 firefighters' regular radios. You know, when
9 they go out they make sure that everything is
10 adequately charged.

11 Q. The receiver module in the system
12 described in Mendelson, so not modified in any
13 way, but the system described in Mendelson, the
14 receiver module uses two AA batteries; is that
15 correct?

16 A. Somewhere in my declaration I recall
17 describing that we used two AA batteries.

18 I can't find the specific paragraph,
19 but I believe that is in there. Here we go.

20 I've got it on Paragraph 153. "A
21 POSITA would have understood that replacing the
22 receiver modules AA batteries." Yes.

1 Q. So, if you were going to ensure that
2 every receiver module had a full battery prior to
3 any call to the fire department, wouldn't that
4 require throwing away AA batteries before they
5 are depleted at pretty much any time the receiver
6 module is used?

7 A. The same applies to any device that
8 has not got rechargeable batteries. You have to
9 have fresh batteries, replace them. That applies
10 to a lot of first responder technology.

11 Q. So, sticking with Paragraph 153 that
12 you just identified. Towards the top here, you
13 state "More logical" -- sorry.

14 You state that it would, "be more
15 logical to simply replace the receiver module's
16 AA batteries with new ones whenever the batteries
17 died or were running low."

18 Do you see that?

19 A. So, this is part of the description
20 about providing backup functionality.

21 And the start of 153, I say
22 "Additionally, a POSITA would not have been

1 motivated to go to the difficulty and expense of
2 modifying Mendelson's receiver module to draw
3 backup power from the PDA, because a POSITA would
4 have recognized that it was much easier, cheaper,
5 faster and more logical to simply replace the
6 receiver module's AA batteries with new ones
7 whenever the batteries died or were running low."

8 Q. So, wouldn't such a solution require
9 that the medical personnel carrying the PDAs
10 would have to carry large numbers of AA batteries
11 on their person at all times?

12 A. No. Because as I describe in
13 Paragraph 152, our systems would work for a few
14 days of operation. So -- let's see.

15 About the third sentence in,
16 "Further, as Mendelson describes, a Sensor Module
17 and Receiver Module utilize batteries to supply
18 plenty of power to ensure the device is running
19 operational throughout their intended use."

20 So, for most cases, there is -- the
21 batteries are not going to get depleted.

22 Q. Are you saying that the Receiver

1 Module could operate for five days on two AA
2 batteries, alone; is that correct?

3 A. I state, "I confirm that Mendelson's
4 Receiver Module uses two AA batteries, resulting
5 in the Receiver Module providing a similar number
6 of days of operation."

7 With the Sensor Module with a
8 battery there providing at least five days of
9 operation.

10 Q. Turning to Paragraph 154. Here you
11 have identified a concern that implementing
12 Mendelson's system such that the receiver modules
13 configured to be able to draw power from the
14 mobile computing device "would drain the PDA's
15 battery more quickly."

16 But if the receiver module can last
17 for five days on two AA batteries, wouldn't the
18 amount of power drawn in the minute or two that
19 it takes to retrieve vital sign information be
20 minimal compared to that?

21 A. I don't understand your question.

22 The PDA is running continuously,

1 remotely connected to all of the receiver modules
2 in the field.

3 And you say -- I don't understand
4 your scenario. Can you describe that again to
5 me, I'm sorry, so I can understand what you are
6 describing?

7 Q. Is it fair to say here you are
8 stating that a POSITA would not have implemented
9 Mendelson's system to allow the Receiver Module
10 to draw power from the PDA because it would drain
11 the PDA's battery more quickly.

12 Is that correct?

13 A. I say that yes, modifying the PDA to
14 power Mendelson's Receiver Module would drain the
15 PDA's battery more quickly to the detriment to
16 the entire system.

17 Q. And so my question is, if it is true
18 that the receiver module can last for up to five
19 days on just two AA batteries, wouldn't the one
20 or two minutes of drawing power from the PDA
21 require to obtain that vital sign information be
22 minimal?

1 MR. WENTZEL: Objection, vague.

2 THE WITNESS: The summary is that
3 however long you are connected to the
4 Receiver Module you are going to be taking
5 battery life from the PDA.

6 And, I can't quantify, you know,
7 your example there with the medic at the site
8 of the individual, how fast that would drain
9 the PDA.

10 But, the, any, any reduction in
11 battery life would be, would not be good from
12 the PDA's point of view.

13 BY MR. BISENIUS:

14 Q. I want to turn back to the '507
15 patent. And specifically I want to talk about
16 the claims. And I am in Column 22.

17 A. Which claim?

18 Q. It is Claim 13. And I want to talk
19 specifically about element, what is identified in
20 the petition as Element 13E.

21 And this starts at Column 22,
22 Line 5. And recites "outputting the SpO2

1 measurement values to the mobile computing
2 device."

3 Do you see that?

4 A. I see that.

5 Q. This is a function performed by the
6 processing board of the SpO2 measurement system;
7 is that correct?

8 A. Well, to be totally accurate, let's
9 look at what this says.

10 So, by a processing board of the SpO2
11 measurement system, the processing board and data
12 communication with the optical sensor, and a
13 mobile computing device including a display.

14 Receiving said one or more signals
15 from the optical sensor. And then processing
16 said one or more signals to generate the SpO2
17 measurement value.

18 And, sorry, outputting the SpO2
19 measurement values to the mobile computing
20 device.

21 Q. So, do you agree that the function
22 of outputting the SpO2 measurement values to the

1 mobile computing device is performed by the
2 processing board of the SpO2 measurement system?

3 A. I think I answered that question by
4 just stating what it says in the claim language
5 there.

6 Q. But, looking at Element 13B, which
7 is Lines 50 to 53 of Column 21. This states that
8 the processing board is in data communication
9 with the mobile computing device.

10 Is that correct?

11 A. So, part of Claim 13, "by a
12 processing board of the SpO2 measurement system
13 the processing board and data communication with
14 the optical sensor and a mobile computing
15 device."

16 Q. So, returning to Element 13E, which
17 starts at Line 5, Column 22 and recites,
18 "outputting the SpO2 measurement values to the
19 mobile computing device."

20 My question is, could this function
21 of outputting the SpO2 measurement values by the
22 processing board to the mobile computing device

1 be satisfied by internal communications of the
2 mobile computing device?

3 A. That is not what the claims say and
4 that is something I would need more time to think
5 about.

6 You seem to be using terms that the
7 are not in the claim. So, I'm not -- I need a
8 lot more time to think about what you mean by
9 that statement.

10 Q. Going back to Element 13A, which
11 starts at Line 45 of Column 21. The first line
12 recites, "outputting from an optical sensor of an
13 SpO2 measurement system."

14 Do you see that?

15 A. Yes, I do.

16 Q. And then the first line of the next
17 element, Element 13B at Line 50 says, "via a
18 processing board of the SpO2 measurement system."

19 Do you see that?

20 A. We were just reading that from
21 Claim 13, yes.

22 Q. So, would you agree that both the

1 optical sensor and the processing board are part
2 of the SpO2 measurement system?

3 A. Can you ask the question again?
4 Would I agree with what? Sorry.

5 Q. Would you agree that the claimed
6 optical sensor and the claimed processing board
7 are both part of the SpO2 measurement system?

8 A. Again, I will refer to the claim
9 language where it says, "from an optical sensor
10 of an SpO2 measurement system."

11 And then later as you were reading,
12 "via processing board of the SpO2 measurement
13 system."

14 I wouldn't want to read any more
15 into it than what the claim says there.

16 Q. Is the claimed mobile computing
17 device part of the SpO2 measurement system?

18 MR. WENTZEL: Objection, vague.

19 THE WITNESS: Again, the --
20 referring to the claim language. Line 52, it
21 just says, "and a mobile computing device
22 including a display."

1 BY MR. BIENIUS:

2 Q. Turning to Claim 19 in Column 22.

3 It states, "The computer implemented method of
4 Claim 13 further comprising wirelessly
5 transmitting the SpO2 measurement values from the
6 SpO2 measurement system to the mobile computing
7 device."

8 Do you see that?

9 A. Yes, I do.

10 Q. It has got a typo in there.

11 A. Yep.

12 Q. It means of, but it says O-D.

13 A. Yes, I agree.

14 Q. So when it says, "wirelessly
15 transmitting the SpO2 measurement values from the
16 SpO2 measurement system to the mobile computing
17 device," wouldn't this indicate that the SpO2
18 measurement system is distinct from the mobile
19 computing device?

20 A. Claim 19 just states why this is
21 transmitting the SpO2 measurements from the SpO2
22 measurement system to the mobile computing

1 device.

2 It doesn't say anything other than
3 that.

4 Q. Are you aware that the patent owner
5 in this proceeding has submitted a Contingent
6 Motion to Amend?

7 A. I am aware there is some
8 continuation but I don't know the details.

9 Q. Did you review the Contingent Motion
10 to Amend at any point prior to today?

11 A. No, I don't know anything about it.

12 Q. So, you have no opinions about the
13 validity of the claims in the Contingent Motion
14 to Amend; is that correct?

15 A. I know nothing at all about the --
16 about this.

17 Q. Did you talk to counsel for patent
18 owner during any of the breaks today or otherwise
19 communicate with counsel for patent owner?

20 A. No.

21 Q. Has a court ever precluded you from
22 offering an opinion?

1 A. No.

2 Q. Has a court ever criticized one of
3 your opinions?

4 A. No.

5 Q. Have you ever been convicted of any
6 crime related to acts of dishonesty or fraud?

7 A. No.

8 MR. BISENIUS: No further questions.

9 MR. WENTZEL: Can we take a
10 five-minute break?

11 MR. BISENIUS: Sure. Come back at
12 35 after?

13 MR. WENTZEL: Sure. That is fine.

14 (Recess taken -- 2:27 p.m.)

15 (After recess -- 2:33 p.m.)

16 EXAMINATION

17 BY MR. WENTZEL:

18 Q. Dr. Duckworth, I just have a few
19 questions for you. Do you recall today being
20 asked about IEEE conferences?

21 A. Yes, I do.

22 Q. And have you attended IEEE

1 conferences?

2 A. Yes, I have.

3 Q. In your experience at IEEE
4 conferences, are the papers being presented at
5 the conference made available to attendees before
6 the conference?

7 A. No.

8 Q. Do you know why papers presented at
9 IEEE conferences are not made available to
10 attendees before the conference?

11 A. Well, in most cases authors are
12 still revising them and right up to the
13 conference and even after the conference, making
14 changes and edits to their papers.

15 MR. WENTZEL: I have no further
16 questions.

17 MR. BISENIUS: Nothing more from
18 petitioner.

19 MR. WENTZEL: Okay. Thank you all.

20 MR. BISENIUS: Thank you.

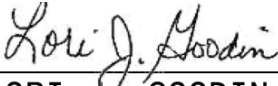
21 (Whereupon, signature not having been waived,
22 the deposition suspended at 2:34 p.m. EST)

1 CERTIFICATE OF NOTARY

2

3 I, LORI J. GOODIN, RPR, CRR,
CA CSR # 13959 the Notary for this deposition, do
4 hereby certify that the witness whose testimony
appears in the foregoing deposition was sworn by
5 me; that I am neither counsel for, related to,
nor employed by any of the parties to the action
6 in which this deposition was taken; and, further, that I am
not a relative or employee of any attorney or
7 counsel employed by the parties hereto, or
financially or otherwise interested in the
8 outcome of this action.

9


LORI J. GOODIN, RPR, CLR, CRR
Notary Public in and for:

10

11 STATE OF FLORIDA, COUNTY OF SARASOTA

Notary Commission Number: GG987804

12 My Commission expires: May 12, 2028

13 STATE OF CALIFORNIA, CA CSR# 13959

14 My Commission expires: February 22, 2025

15 STATE OF MARYLAND, COUNTY OF ANNE ARUNDEL

16 My Commission expires: August 2, 2025

17 DISTRICT OF COLUMBIA, WASHINGTON DC

18 My Commission expires: June 1, 2026

19 STATE OF DELAWARE, COUNTY OF KENT

20 My Commission expires: September 9, 2025

21 COMMONWEALTH OF PENNSYLVANIA, COUNTY OF LEHIGH

22 My Commission expires: April 5, 2025

1 R. James Duckworth, Ph.D., c/o
KNOBBE MARTENS OLSON & BEAR, LLP

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

3

Case: Apple, Inc. v. Masimo Corp.

4 Date of deposition: December 20, 2024

Deponent: R. James Duckworth, 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

17

18 Sincerely,

19 Digital Evidence Group

20 Copyright 2024 Digital Evidence Group

21 Copying is forbidden, including electronically, absent
22 express written consent.

1 Digital Evidence Group, L.L.C.
1730 M Street, NW, Suite 812
2 Washington, D.C. 20036
(202) 232-0646

3
4 SIGNATURE PAGE
Case: Apple, Inc. v. Masimo Corp.
5 Witness Name: R. James Duckworth, Ph.D.
Deposition Date: December 20, 2024

6
7 I do hereby acknowledge that I have read
and examined the foregoing pages
of the transcript of my deposition and that:

8
9 (Check appropriate box):
() The same is a true, correct and
10 complete transcription of the answers given by
me to the questions therein recorded.
11 () Except for the changes noted in the
attached Errata Sheet, the same is a true,
12 correct and complete transcription of the
13 answers given by me to the questions therein
14 recorded.

15
16 _____
17 DATE WITNESS SIGNATURE
18
19
20
21 _____
22 DATE NOTARY

1 Digital Evidence Group, LLC
2 1730 M Street, NW, Suite 812
3 Washington, D.C. 20036
4 (202)232-0646

5

6 ERRATA SHEET

7

8 Case: Apple, Inc. v. Masimo Corp.

9 Witness Name: R. James Duckworth, Ph.D.

10 Deposition Date: December 20, 2024

11 Page No. Line No. Change

12

13

14

15

16

17

18

19

20

21

22

Signature

Date

A				
a.m 1:15 2:5 5:1 48:4,5 77:5	adding 86:18	95:18,20 96:3	49:6	18:5,9,14 19:9
AA 129:14,17,22	addition 124:11	96:22 99:22	Apple 1:4 3:3 6:3	22:15 25:18,22
130:4,16 131:6	additional 15:7	100:22 101:6	6:4 10:1 12:1,6	26:20 27:12,19
131:10 132:1,4	23:16 66:11	102:11	12:7,19 115:21	28:13 29:4,18
132:17 133:19	86:8,21 127:2,4	amplifiers 35:15	116:9 125:19	32:8,9 33:15
able 30:6 31:6,11	Additionally	amplifying 96:18	126:12 144:3	38:17 41:4 44:5
33:5 76:6 87:9	130:22	analog 22:14	145:4 146:8	46:4 52:20 53:7
105:16 107:21	adequately 128:9	23:8,13 24:5	Apple's 74:15	56:1 62:1,6
128:2 132:13	129:10	64:6,9,20 65:17	115:8,15 117:1	66:14,18,19
above-titled 2:3	Administrator	65:18,22 66:4,5	applicable	67:10,13,13,14
absent 144:21	2:9	67:2,3,19 68:14	144:13	68:11,13 91:1
absorption 64:1	adopted 119:18	71:3 72:15,16	application 55:8	92:21 93:6
abstract 128:20	advise 144:10	76:7	57:7 59:8 99:11	94:15 101:3
128:21	advised 144:6	analysis 59:22	applied 118:1	109:18 116:22
access 109:16	ago 10:16	61:16 62:6	119:22	128:6
110:3 112:11	agree 97:3 116:12	119:21	applies 129:7	assemble 107:21
accurate 17:7,14	116:16,19,22	analyzing 59:20	130:7,9	asserted 12:6
135:8	135:21 137:22	and/or 144:9	apply 69:8 125:2	assertion 105:21
achieve 87:3	138:4,5 139:13	ANNE 143:15	126:21	assigned 98:5
acknowledge	agreed 100:19	annotate 58:16	Applying 89:13	assist 14:10
145:6	agreeing 10:21	annotated 57:15	appropriate	assistant 14:11
acquired 72:6	agreement 11:6,8	58:3,7 63:2	145:9	associated 8:14
73:2,6,9 74:1	11:11	Annual 78:2,14	approximately	assume 22:18
88:5 91:16 92:2	ahead 43:6 54:15	answer 22:6 29:7	2:5 8:18 14:20	99:10,16
93:5 94:2,5,13	81:4 103:1	29:19 30:17	April 143:22	assumed 32:6
94:21 95:6,13	108:1 114:12	31:5,6,11 32:22	area 29:9	assuming 125:20
96:4,8,19 97:1	alleged 7:6	34:3,7,12 39:17	argues 115:21	attached 145:11
97:5 100:18	allow 53:12 133:9	48:21 49:4,11	arrow 90:9,16,19	attempt 114:7
101:1,4,16	allowed 51:10,15	49:22 54:9	90:19 91:2	attend 78:9
103:12	116:10 144:13	answered 29:13	94:16 95:17,19	attended 78:13
acronym 7:4	allows 80:20	29:14 30:5	96:9 101:19	141:22
act 49:1 101:3	84:11 85:5,19	31:20,22 32:17	art 7:6 28:2 29:9	attendees 78:22
action 2:3 143:5	123:3	33:21 34:1,11	29:22 30:12	142:5,10
143:8	alternative 126:8	37:3 40:8,20	31:2,16 32:6,10	attenuated 21:19
activity 81:8	126:16,18	54:4,8 62:10,12	32:14 33:5	24:1 35:5 36:1
acts 141:6	ambient 95:20	97:7 136:3	arterial 64:3	98:20 100:4
actual 19:10,18	96:3	answering 49:20	ARUNDEL	101:10
38:10 53:9 56:3	Amend 140:6,10	answers 30:21	143:15	attorney 143:6
81:17	140:14	49:5 145:10,13	asked 15:8 22:5	attorneys 13:7
ad 122:22 123:8	amount 125:7	APPEAL 1:2	29:13,15 31:20	August 26:11
add 83:1 86:8,16	132:18	appear 92:21	32:17 33:21	42:16 44:21
87:8 111:11	amplification	111:14	37:17,18 40:8	45:3 78:3
added 86:20	36:17 114:17	APPEARANC...	40:20 41:2	143:16
111:5	116:7	3:1	43:20 54:4	author 128:15
	amplified 116:4	appears 109:1	61:22 62:10	authors 128:14
	amplifier 90:10	143:4	113:8 141:20	142:11
	90:21 91:12	Appendix 48:12	asking 12:9 15:5	available 20:6

79:5 142:5,9 average 57:18 103:13 108:5,7 110:11,11,16,17 111:6,7 113:1,7 113:10,13 averages 114:18 116:8 averaging 36:18 37:1 102:19 105:2,12,16 106:1,14 107:6 107:14 108:15 109:10,12 110:8 111:1 113:12 aware 11:12,15 11:21 14:17 15:19 31:9 35:16 39:4 84:13 99:3 140:4,7	131:6,7,10,17 131:21 132:2,4 132:17 133:19 battery 129:4 130:2 132:8,15 133:11,15 134:5,11 BEAR 3:13 144:1 began 123:11 beginning 125:10 behalf 9:12,20 10:21 behavior 75:17 believe 12:2 15:21 18:19 24:6 30:4 31:21 32:19 33:22 34:21 37:3,17 39:16,18 47:21 53:16 54:7,22 55:16 60:3 62:11 70:17 79:4,4,19 100:7 100:11 107:18 129:19 benefits 19:6 better 28:11 33:13 83:17 beyond 123:4 big 114:8 Bilal 13:21 20:11 Bilal's 21:9 BISENIUS 3:5 4:5 5:10 6:21 8:2 10:2,14 11:5 13:18 18:6 19:4,16 22:9 23:11 25:1,12 25:21 27:7,22 28:12 29:14,17 30:8,16 32:2 33:2 34:2,16 35:9 36:20 38:20 39:3 40:2 40:14,21 41:19 45:7,22 47:2,6 47:14 48:1,6	50:7 51:3,8 52:7 53:6 54:5 54:14 62:17 76:16 77:2,7,13 86:19 87:12 116:18 117:11 117:17 119:9 134:13 139:1 141:8,11 142:17,20 bisenius@fr.com 3:9 bit 43:5 46:22 74:7 124:15 black 90:9,16,19 90:19 94:16 95:19 101:19 blanket 11:11 block 89:19 blood 58:12 64:3 board 1:2 17:14 17:21 18:12,17 19:8 20:5 22:2 36:8,14,19 37:6 37:13,19 39:9 40:1,13 41:18 42:21 43:15 45:14 46:7,13 47:10,16 48:18 50:9,19 52:3,13 53:1,4,5,11,20 54:13,19 55:4,6 55:13,18 56:2,8 56:9 59:4,11,16 61:8,15,19 62:9 62:16 64:18 65:6,11 67:2 68:8,16 88:4 94:12 115:14 135:6,10,11 136:2,8,12,13 136:22 137:18 138:1,6,12 boards 59:16 body 63:12,14 64:10,21 65:19 66:7 67:4,21	68:17 bottom 57:4 58:21 115:18 124:17 127:11 127:15 box 83:8 95:20 145:9 boxes 57:10 break 47:1 48:1,2 76:19 117:10 141:10 breaks 140:18 Brief 118:13,18 button 84:2 buttons 84:4	calling 41:6 102:8 capability 127:6 capable 124:12 capacitors 35:14 capture 56:14,21 card 75:15 76:10 care 125:2 126:21 128:22 careful 44:4 carried 125:8 carry 124:11 127:2 131:10 carrying 127:8 131:9 case 1:6 10:4 12:8 12:16 13:12 15:16 34:6 68:12 69:3 93:19,20 144:3 145:4 146:8 cases 9:20 10:3,6 10:7,10 15:4,6 15:10,22 84:10 122:7 128:18 131:20 142:11 casualties 121:16 122:3,17 123:11,13 casualty 128:22 catch 42:3 categorization 18:10 CERTIFICATE 143:1 Certified 2:7,9 certify 143:4 cetera 56:8 103:22 124:6 125:2 CFR 48:15 chain 90:17 102:17 change 22:12,13 64:5,8,12,19 65:17 66:5 67:3 67:20 68:14 72:16 146:11
B B 3:14 16:15 back 9:16 30:20 40:9 41:14 51:4 65:7 68:10 74:7 87:13,15 121:10 123:16 124:15 134:14 137:10 141:11 backing 125:9 backup 130:20 131:3 based 18:9 21:21 22:8 23:9 24:3 36:3 59:22 61:16 62:6 basic 114:4 basically 55:16 76:6 basing 23:19 81:17 batteries 128:4 129:14,17,22 130:4,8,9,16,16			C c/o 144:1 CA 143:3,13 cable 22:3 24:14 37:16,21 54:19 55:6 64:17,20 69:7 70:6 92:7 calculate 19:10 19:18 36:10 37:19 40:4,16 43:17 59:5 calculated 17:20 18:16 37:13 42:21 53:10,14 55:3 56:7 59:10 calculates 16:10 16:18 17:2 39:12 59:16,17 calculating 18:11 47:8 calculation 19:7 53:22 59:13 calculations 53:9 California 1:19 2:6,11 3:15 143:13 144:2 call 9:4,5 16:15 40:22 129:6 130:3 144:15 called 5:6 41:1 96:17 102:5	

changes 69:1 142:14 145:11	134:16 137:3 140:13	Commission 143:11,12,14,16 143:18,20,22	55:6,14 56:4,16 57:1 61:20 62:9 114:17 116:8	134:3
characterize 65:20	clarification 15:14	common 109:10 124:2,20	132:14 135:1 135:13,19	connecting 22:4 24:14
charged 128:4,10 129:10	clarify 66:13 67:12 90:16	commonly 105:10	136:1,9,14,19 136:22 137:2	connection 24:10 24:17,18 25:4,4 26:21,22 27:9 27:11,14,15 28:3,14,17 29:6 29:11 30:1,13 31:3,18 32:15 33:6,19 34:9 84:4
cheaper 131:4	clarity 5:17	Commonwealth 2:12 143:21	138:16,21 139:6,16,19,22	connects 84:1
Check 145:9	clean 8:9	communicate 14:1,6 123:3 140:19	concern 132:11	consecutive 104:6,16 105:5 107:3
cite 118:11	clear 45:21 50:2 50:13 68:18 73:16 90:18 91:9 94:22	communicated 8:22 24:9	concise 50:2	consent 144:22
cited 74:15 119:16	clearly 51:9 55:20 72:21	communication 102:10 135:12 136:8,13	concisely 49:8	consider 93:7 117:5
Civil 48:14	clients 15:7	communications 12:22 137:1	conclusion 108:2	consistent 48:13 117:4
claim 18:2,4 20:2 39:20 40:10 41:14,15 45:2 53:17 54:2,10 61:17 62:2,13 66:8,14,16,17 67:16,16 71:22 88:9 89:2,6 92:18,21,22 97:13,17 98:1,4 99:11 100:9,16 101:7 118:6,12 118:18 119:17 119:20 134:17 134:18 136:4 136:11 137:7 137:21 138:8 138:15,20 139:2,4,20	close 122:9,16	complete 144:6 145:10,12	conduct 9:7 124:9	consists 102:16
	CLR 1:18	compared 17:8 17:16 132:20	conducted 38:5 39:9 53:10	construction 115:8,15 116:12,19 117:1 118:5,8,9 118:13,18 119:17,20 120:4
	coach 50:20 51:17	communications 12:22 137:1	conference 78:2,5 78:7,8,10,14,18 78:21,22 79:1,2 79:6 142:5,6,10 142:13,13	contact 14:13
	coaching 48:9,17 50:12 51:1 52:3 52:5	complicated 100:6	conferences 141:20 142:1,4 142:9	contacted 9:12 9:18 10:11,18 11:16
	coast 76:22	component 34:18 91:6 101:5	configuration 17:6 21:1,4,8 22:19 24:8 36:22 37:8 38:2 41:21 42:20 123:1	contained 21:17 23:21 35:3
	coauthor 77:20	components 34:19 85:17 120:15,21	configured 71:5 132:13	contemplates 122:7
	collect 74:22	comprising 139:4	confirm 59:2 132:3	context 24:20 25:2 27:19 28:17 30:6,9 31:7 32:22 33:7 33:9 34:13 74:4 76:14 94:6
	collected 85:1	compute 17:9,17	confirming 43:21 44:1	Contingent 140:5 140:9,13
	collection 79:1	computed 110:12 110:17	confirmed 55:2	continuation 140:8
	collects 74:18	computer 139:3	confirms 43:15 55:21 56:6 61:10	
	colored 57:10	computing 17:8 17:15,17,21 18:13,17 19:10 19:17 20:6 37:10,16,22 38:9,10 39:11 39:12 40:3,16 42:22 43:1 45:15 46:8 53:14 54:1,20	confused 19:21 25:9 27:3 109:17	
	Columbia 2:12 143:17		connect 84:6	
	column 63:16 70:8,9 83:22 84:10 97:22 98:9 121:18,18 121:20 134:16 134:21 136:7 136:17 137:11 139:2		connected 59:9 120:21 133:1	
	combat 128:22			
	combination 13:7			
	come 50:8 129:6 141:11 144:7			
	coming 70:18 74:5 80:6 83:17 94:4,16 97:3			
	commencing 2:4			

continue 95:15	56:4,17 57:2	118:13,19	94:1,5,13,20	109:16
continued 51:11	58:15,22 60:10	140:21 141:2	95:6,12 96:4,7	defeat 87:10
continues 74:22	61:4 63:1,6	cover 11:9	96:19 97:4	defending 49:1
continuing 34:17	65:11 73:7	covered 11:11,19	100:17,22	define 5:18
37:7 45:9 80:7	74:10,13,20	34:21 39:18	101:4,16	definitely 75:19
112:21	76:4 77:18,21	53:16	103:12 113:3	Delaware 2:12
continuous 113:3	78:3,18 79:11	create 58:18	113:10,17	12:8,15 115:9
continuously	80:10 81:9,14	crime 141:6	135:11 136:8	115:16,21
132:22	82:2 84:8 85:7	criticized 141:2	136:13	143:19
contributions	85:19 86:13	Cross-examina...	date 7:18 44:1	demonstrated
11:9	87:4 88:10,21	48:20	78:4 144:4	22:20
control 83:9 84:2	89:3,12,21	CRR 1:18 2:6	145:5,17,22	department
84:3,4	90:12,13 91:1,7	143:3,9	146:10,22	130:3
controls 81:11,22	92:9 96:20 97:6	CSR 1:19 2:6	dated 7:11,13,14	dependent 60:2,8
83:15,18	99:1,3,6 100:8	143:3,13	day 50:13	depends 123:1
conversation	103:20 111:9	current 7:11 23:7	days 131:14	depicted 21:5
48:21 91:14	111:15,16	23:15 66:5 67:2	132:1,6,8,17	25:14 26:16
conversion 36:18	117:2 118:2	67:20 68:14	133:19	57:12 79:14,17
114:17 116:7	120:11,17	69:1	DC 143:17	depleted 130:5
converted 106:4	122:4,18	currently 11:22	December 1:14	131:21
116:4	124:14 126:16	14:17	2:4 5:1 144:4	deponent 144:4,7
converter 72:15	127:3 128:19	currents 22:13	145:5 146:10	144:9
76:8	129:15 132:2	cycle 108:3	deciding 49:3	deposition 1:13
converting 73:4	133:12 135:7	111:19 112:1	declaration 8:9	2:1 5:17,19 8:7
conveyed 72:11	136:10 140:14		8:13 12:3,13	8:13,19 9:2,7
102:3	145:9,12	D	13:1,6,10,12,19	50:21 51:6,21
convicted 141:5	corresponding	D 48:12 49:6 76:8	13:20 14:3,11	142:22 143:3,4
copy 8:9 97:21	48:15 90:4,22	D'Angelo 74:13	14:15,18 15:16	143:6 144:4,12
144:8	91:10 92:11,13	74:15,16,18,21	16:5 20:8,10,11	145:5,7 146:10
Copying 144:21	93:7,14,21	75:13,14 76:1	21:9,15 22:21	describe 8:6
Copyright	94:18,20 95:11	76:11	25:15 26:8	12:22 24:4
144:20	96:17 97:10	D.C 1:21 145:2	30:12 34:18	102:21 107:9
corner 95:4	99:20 100:20	146:3	35:1 37:5,12	107:15 131:12
101:18	corrupted 105:18	data 20:21 21:6	43:7 44:11 52:9	133:4
Corp 144:3 145:4	counsel 8:11 9:3	37:9 63:10	56:11 59:2,20	described 10:10
146:8	13:3 14:10,14	65:14 69:6,14	60:4,15 61:3	25:2 30:11
Corporation 1:8	48:7 49:9 50:7	69:15,20 70:3,4	62:19 64:17	32:19 69:10
3:12 5:21 12:7	140:17,19	70:18,18,20	74:8 87:14	74:18 79:19
correct 7:2,10 8:5	143:5,7 144:9	71:2,16 72:6,11	98:13,15	86:22 87:2
12:1,10 16:13	144:12	73:2,4,5,8,11	114:13 116:14	103:19 104:13
20:15,19,20	Counselor 46:20	73:22 74:19,21	116:21 117:8	104:17 106:12
24:10 25:20,22	COUNTY 143:11	75:1,4,10,12,15	117:19 119:21	124:10 129:12
26:1,6 38:19,21	143:15,19,21	75:16,19,22	120:8 123:17	129:13
39:5 40:6 42:2	couple 54:15	76:5,11,13 88:4	127:11 128:15	describes 37:5
42:11 43:12	122:22	91:15,15,19	129:16	63:15 80:20
44:3,5 45:16	court 11:22 12:11	92:1,1,5,15,20	declarations 7:9	85:4 104:15
46:9,18 54:3,21	12:18 14:22	93:2,4,9,12,16	deconstruct	106:9 107:2

108:11 112:1 113:6,16 121:14 131:16 describing 26:13 26:14 104:1 105:2 106:14 108:16 109:2 122:15 129:17 133:6 description 34:22 35:20 56:6 65:12 67:11 72:9 85:11,13 91:8 126:18 130:19 descriptions 23:20 69:17 70:7 descriptors 66:11 design 86:1 designations 98:4 designed 109:5 125:5 designer 109:6,15 112:11 designers 110:3 detail 26:8 42:13 44:18 118:22 details 35:6,17 109:7 114:2,6 140:8 detect 34:20 70:1 detected 21:22 22:8 23:10 24:3 36:3 70:13 71:13 90:4,22 91:10 92:11,14 93:8,15,22 94:18,20 95:12 96:18 97:11 99:20 100:20 114:19 detector 21:17,20 22:7 23:5,6,14 23:21 24:2,11 35:3,7,10,12,13 35:14,21 36:2	63:21 65:3 68:2 68:22 70:19 71:9 115:22 116:10 determination 53:13 determine 33:5 38:4,6 45:13 46:6 determined 62:8 determines 38:10 determining 61:18 70:15 detriment 133:15 device 16:20 17:3 17:8,15,17,21 18:13,17 19:10 19:17 20:6 37:10,16,22 38:9,10 39:11 39:12 40:3,16 42:22 43:1 45:15 46:8 53:14 54:1,20 55:7,14 56:4,16 57:1 61:20 74:18,22 75:2 79:10 84:2,19 86:4 112:7 123:15 127:18 130:7 131:18 132:14 135:2 135:13,20 136:1,9,15,19 136:22 137:2 138:17,21 139:7,17,19 140:1 devices 84:11 85:2 91:13 diagram 89:20 97:14 died 130:17 131:7 difference 24:17 25:3 26:21 27:13	different 32:3 56:19 57:10 76:12 85:17 91:6 93:3,18 100:13 110:7 117:10 difficulty 28:22 131:1 digital 1:20 22:13 23:13 24:5 72:11,14,15,16 73:5 105:11,16 106:1,14 107:6 107:14 108:15 109:9,11 111:1 113:12 144:19 144:20 145:1 146:1 diodes 63:20 direct 96:22 directly 14:1 82:16 97:4 124:3,21 disagree 41:9 102:4 disclose 88:14 89:16 104:20 114:21 115:7 115:12 disclosure 55:11 84:13 disclosures 32:7 disconnect 83:12 disconnecting 81:12,22 discussed 41:20 87:22 116:13 discusses 74:21 122:2 discussing 16:12 18:7 20:11 43:9 44:11 60:16,22 61:2 63:5 74:13 74:16 75:6 87:16 89:9 92:11 100:15 120:10,15,16	129:3 dishonesty 141:6 display 57:9 59:8 79:9 80:6 81:6 81:7,18 135:13 138:22 displayed 55:7 57:16 80:13 displaying 84:14 124:12 displays 80:1 distal 105:2 distance 123:2 distinct 139:18 distributes 121:15 123:10 distributing 122:3 123:6 District 2:11 11:22 12:8,11 12:15,18 14:22 118:13,18 143:17 divide 62:9 divided 108:4 divides 108:11 document 7:20 20:13 45:18 49:21 61:4 documentation 105:20 documents 8:11 8:14 12:10,15 20:17 76:18 doing 18:21 50:5 107:14 Doug 9:4 47:15 54:6 DOUGLAS 3:14 douglas.wentze... 3:16 Dr 5:15 15:17,20 16:1 30:18 43:11 141:18 drafts 13:4 drain 132:14 133:10,14	134:8 draw 131:2 132:13 133:10 drawing 133:20 drawings 13:8 drawn 132:18 drives 70:11 dry 46:22 Duckworth 1:13 2:2 4:2 5:5,15 30:18 141:18 144:1,4 145:5 146:9 duly 5:7 E e.g 64:1 124:5 125:1 earlier 15:3 26:15 39:19 41:20 42:8 44:1 53:16 69:19 87:16,22 108:16 113:9 120:17 easier 131:4 east 76:22 Eastern 1:15 edits 142:14 effect 12:3 effects 105:12,17 either 8:22 14:22 109:18 electronic 82:7 electronically 144:21 element 97:13,20 97:22 98:1,9,10 98:11 99:1,15 134:19,20 136:6,16 137:10,17,17 elements 42:10 98:4 embodiment 67:7 68:10 EMBS 78:2,13 emergencies
---	--	---	---	---

128:2	35:10 39:20	explicit 118:7	filtered 116:5	Florida 2:10
emergency 125:2	57:5 64:3,16	explicitly 41:14	filtering 36:18	143:11
126:21 127:19	65:3 66:16,19	75:14 104:22	69:9	flow 58:12
129:5	66:20 67:14,15	106:11 107:19	filtration 114:17	flowing 64:3
emitted 21:18	68:14 71:1,13	108:13 112:5	116:8	focus 51:19
23:22 35:4	75:18 85:12	113:9,20	Finally 110:10	focused 60:3
emitting 63:20	89:6 108:21	express 144:22	financially 143:7	follows 5:8
employed 143:5,7	134:7	expressed 46:3	find 31:10 129:18	106:18
employee 143:6	Examples 49:13	48:14 119:20	fine 141:13	forbidden 144:21
ensure 130:1	49:17	expressly 122:15	finger 21:16,19	foregoing 143:4
131:18	excuse 71:11,12	external 42:22	24:1 35:2,5	145:7
entire 13:3 31:12	executed 55:8	45:15 46:8 47:9	36:1,9	form 22:10,22
31:17 32:11,12	exhibit 4:12,13	47:12 51:11	finger-clip 43:17	49:15 50:18
33:17 99:5,12	4:14,15,16,17	53:1,5,11 61:19	59:5,18 61:12	51:22 53:2
99:13,18 102:1	6:19 7:1,12,22	62:9	124:5 125:1	63:10 65:14
102:5,8 133:16	8:3 13:20 16:5	externally 17:20	fire 129:5 130:3	69:21 70:21,22
equipment 124:5	20:13,14 21:12	18:16	firefighters	71:17,19 73:5
124:11,22	21:15 77:9,11	extra 124:11	128:18 129:1	117:6
125:7 126:20	77:17 78:20		firefighters'	formulate 49:4
127:3,5,9 128:9	82:11,15 87:14	F	129:8	forward 62:18
errata 144:11	90:1 117:20	fact 79:21 116:6	first 4:11 5:7 6:20	89:7 144:11
145:11 146:6	118:12 119:1,3	fails 89:16	8:1,8 9:11,14	found 98:12
errors 14:18	120:13 121:11	fair 126:7 133:7	9:17 10:11	foundation 49:16
ESQUIRE 3:5,6	exhibits 4:9,10	fairly 123:20	11:12 12:4 13:4	50:17 52:1
3:13,14	60:1,9 82:9,20	fall 19:11,19	15:19 21:13	four 9:17 114:6
EST 2:5 5:1	119:6	39:13 40:5,17	56:20 61:9 69:7	fourth 58:14
142:22	exist 14:18	66:15,20 67:15	70:5 72:10	fraud 141:6
estimate 9:19	expense 131:1	72:12,18 73:5	77:12 92:6,10	freeing 20:5
10:9	experience 142:3	far 31:9 91:2	94:16 103:4	fresh 130:9
et 56:8 103:22	expert 11:9 14:21	fast 134:8	108:2 112:22	Friday 2:4 5:1
124:6 125:2	15:9,12,15,21	faster 131:5	115:4 119:4	front 8:10 50:13
events 127:19	41:8	features 121:22	128:8 129:1	97:17,18
Evidence 1:20	expertise 15:11	February 143:14	130:10 137:11	full 129:4 130:2
144:19,20	15:12,12	Federal 48:11,14	137:16	fully 128:4
145:1 146:1	experts 12:17	field 126:2 128:8	FISH 3:4	function 135:5,21
exact 107:13	expires 143:12,14	133:2	fit 41:5	136:20
112:15	143:16,18,20,22	figure 26:17 58:3	five 9:17 104:6,15	functionality
exactly 10:17	explained 26:8	58:8 62:22 63:3	105:5,8 106:4	86:9,21,22 87:2
109:2	31:6 42:13	64:16 67:8 79:8	106:19 107:2	87:8 104:12
examination 4:1	44:18 105:15	79:14,15,18	107:10,17	130:20
4:4 5:6,9	113:11	80:2,8 81:11,18	108:4,12 109:4	functions 86:10
141:16	explaining 18:22	81:21 82:4 90:1	109:21 110:2,6	further 36:7
examined 5:7	126:11	90:1,2 95:16	132:1,8,17	46:11 49:6
145:7	explains 17:13	97:17 99:13	133:18	52:11 75:9
examining 48:22	46:11 52:12	111:4,12,18	five-minute	83:11 92:5
example 13:2,9	65:13 75:9 92:5	figures 13:9	141:10	131:16 139:4
22:12 28:10	explanation 50:2	filed 6:14	Floor 3:14 144:2	141:8 142:15

Future 5:17	51:1 52:2 54:5	helped 13:8	123:11,12	121:8
G	64:17 87:15	15:10	immediately	information
general 9:14 10:3	90:20 95:17,19	helpful 97:19	106:17	20:21 21:6 23:5
63:19 64:15	96:7,11,12	helping 49:4 66:9	implement 38:3	37:9 38:4,9
67:11 68:11	103:18,21	hereto 143:7	implemented	39:10 58:18
85:11 128:5	114:12 123:16	Hertz 111:20	108:22 133:8	80:5,19,22
generally 10:10	128:2,7 129:6	112:3,12,16,17	139:3	83:16,16 84:7
46:2	130:1 131:21	112:17 113:3	implementing	84:14 85:1
generate 20:3	134:4 137:10	113:18	132:11	102:20 107:21
22:7 39:22	good 76:18 77:3	hesitate 144:15	inaccurate	113:20 114:5,7
40:12 41:17	117:13 126:18	hoc 122:22 123:8	105:19	114:18 118:21
53:19 54:12	134:11	hour 46:21 76:17	include 35:11,11	123:7 124:13
61:7,13 62:14	Goodin 1:18 2:6	76:22 77:4	35:12,13,14	125:6 132:19
106:19 135:16	143:3,9	117:12	81:2	133:21
generated 21:21	governing 144:13	hours 8:20	included 78:17	infrared 103:14
24:2,5,12 36:2	governs 11:7	HR 80:13	82:4,12,15	106:17,19
57:6	grab 77:14	hypothetical	includes 83:11	107:3,8,10,17
generating 22:6	GRACE 3:6	38:18 67:10,14	120:21	108:7 109:22
23:9	graphical 57:5	67:15 68:12	including 15:6	110:11,17
generator 57:9	79:16	69:3,4	43:18 120:16	injured 121:3,6,8
getting 46:22	great 76:21 83:5	hypothetically	135:13 138:22	121:9 123:7
60:19	greater 127:6	68:20	144:21	124:18 125:12
GG987804	green 83:12,13		incorrect 102:14	125:14 126:2,4
143:11	Group 1:20	I	102:21	126:5
give 13:17 28:10	144:19,20	i.e 111:20 113:2	independent 9:8	integrity 123:1
29:7 31:11	145:1 146:1	113:17	18:8 19:12,19	intended 131:19
32:11,22 41:10	GUI 79:13 80:1,7	idea 121:7	25:15 26:5,9,18	intensity 63:22
50:1 71:1 82:21	guide 48:8	identified 98:10	38:13 42:14	70:2 104:7,16
given 145:10,13	guidelines 48:12	116:20 128:11	44:13,19 60:5	interacts 79:13
gives 58:10 125:5		130:12 132:11	67:16	interested 143:7
giving 69:3	H	134:19	independently	interface 20:14
gkim@fr.com	halfway 87:21	identifies 128:17	110:6	26:4 44:12 55:8
3:10	94:7 121:13,21	identify 8:21	index 4:1,9 43:19	56:15 57:1,5,13
glanced 118:20	handwritten 8:15	104:11,14	55:4 58:8,9	58:2,6,15 59:21
go 51:4,7 54:6	happen 13:5	106:8 107:1	59:7,14	61:4 79:10,16
76:7 79:21 81:4	128:3	108:10 109:13	indicate 139:17	80:8 81:21
82:16 83:4	happening	110:15 111:22	indicative 63:11	interfaces 60:5
87:13,15 119:8	108:19	113:5,15	63:14 64:6,9,21	intermediary
121:10 123:16	hear 50:8,15	IEEE 78:1,13	65:15,18 66:6	49:2
128:8 129:9,19	51:20	141:20,22	67:4,21 68:16	internal 137:1
131:1	hearsay 49:15	142:3,9	69:21 71:17	International
goal 86:12 87:3	50:16 51:22	image 20:18 21:5	indicator 80:13	78:2,14
goes 9:16 90:17	heart 80:9,16	25:14,19 26:2	individual 80:19	internet 9:9
96:21	83:16,20	34:17 56:21	80:21 81:1,10	interpretation
going 5:18 16:6	held 2:3 78:2	57:15,17	84:12,21 85:3	88:9
46:21 50:9,18	help 33:8 60:13	images 56:19	134:8	interpreting 49:2
	82:3 98:13	immediate	individuals 86:6	invention 7:6

19:6 28:2 36:15 44:2 inventions 46:14 52:14 inventors 13:22 14:7 involved 11:22 12:18 78:6 involving 12:11 12:19 iPhone 55:9 57:7 59:9,11 IPR 1:6 5:11,12 6:12,13,14 9:13 10:5,12,15 11:4 11:10 14:5,22 15:22 IPRs 10:6 IR 111:7 Irvine 3:15 144:2 italics 85:14,16 85:17 ITC 10:7 14:22	34:5,8 35:6 43:3 55:21 60:12 66:2,11 68:18 69:4 87:7 87:10 91:19 105:9 109:7 110:1,4 112:12 113:22 114:6 116:9 126:17 129:5,8 134:6 140:8,11,15 142:8 knowing 32:21 34:13 knowledge 59:3 known 28:3 29:5 29:10 30:1,13 31:3 105:1,4,7	131:14 135:8 letting 119:5 level 81:8 106:2 life 134:5,11 light 21:18,21 22:8 23:10,22 24:3 34:20,20 35:4,22 36:3 37:1 63:11,14 63:20 64:6,9,21 65:15,19 66:6 66:10 67:4,21 68:16 69:1,22 70:2 71:6,18,22 72:5,13,20 73:1 73:11,19,20 88:15,17 89:2,6 89:11 90:5,22 91:10 92:12,14 93:8,15,22 94:11,18,20 95:12,20 96:3 96:18 97:11 98:19,19 99:20 100:3,3,17,20 101:10,10,15,21 104:7,16 105:6 105:14 107:7 111:19 112:1 112:19 115:13 light' 88:3 light,' 89:15 limit 65:21 66:11 66:14 limitation 26:9 42:13 43:14 44:19 45:6 46:18 47:8 52:21 53:12 54:17 55:11,17 60:17 61:1,2,5 61:17 62:5,7 89:17 98:16 limitations 62:2,3 limited 49:12 114:1 125:5 line 63:16 70:10	97:22 98:9 99:9 99:16 134:22 136:17 137:11 137:11,16,17 138:20 146:11 lines 47:12 51:12 127:14 136:7 link 82:12,16 list 54:6 82:8,19 litigation 10:6 12:1,11,18 115:9,16,21 little 124:15 LLC 146:1 LLP 3:13 144:1 logging 74:21 logical 130:13,15 131:5 long 123:21 134:3 longer 73:8 96:19 96:22 125:16 126:6 look 18:3 49:21 51:4 58:3 69:15 69:16 71:7 82:13 83:21 85:12 99:2 119:1 135:9 looking 7:18 18:1 21:4 42:4 55:17 59:13 64:15 72:9 75:9 78:19 94:15 95:3,9 97:20 111:4 121:20 127:11 136:6 looks 79:20 Lori 1:18 2:5 143:3,9 lot 44:6 114:5 130:10 137:8 low 106:1 130:17 131:7 lower 79:8 lunch 77:1	M M 1:21 145:1 146:2 main 3:14 36:14 45:12 46:5,13 52:13 85:22 144:2 makeup 35:7 making 47:17 105:18 142:13 management 74:18,22 75:2 manages 84:3 manner 49:9 mapped 99:4,12 99:14 mapping 100:8 102:2 marked 4:10 6:18 7:21 21:11 77:10 119:2 MARTENS 3:13 144:1 Maryland 2:11 143:15 Masimo 1:8 3:12 5:21,21 8:11 9:4,12,18,21 10:8,12,21 11:9 11:17 12:1,5,7 12:19 13:7 15:4 15:7 144:3 145:4 146:8 Masimo's 119:18 120:4 matter 112:18 124:2,20 144:6 Matthew 3:13 9:5 matthew.ruth... 3:16 mean 10:4,6 27:21 28:7,10 51:1 53:4 69:14 70:22 73:13 80:3 82:18
J J 1:18 2:5 143:3,9 James 1:13 2:2 4:2 5:5 144:1,4 145:5 146:9 Joint 118:12,18 119:17,20 June 143:18	L L.L.C 145:1 labeled 95:20 language 41:14 88:9 89:1,3 92:19 97:13,16 100:9 101:7 136:4 138:9,20 large 131:10 lawyer 48:22 49:1 leaving 90:20 91:5 95:4 101:19 LED 104:5 106:16,17 left 79:8 90:11 91:2 95:4 96:9 96:9 101:18 121:18 legal 14:22 LEHIGH 143:21 let's 20:20 21:10 38:1 43:6 48:1 51:4 61:9 69:16 70:8 74:14 82:7 86:20 113:19 119:1 124:16	light 131:14 135:8 letting 119:5 level 81:8 106:2 life 134:5,11 light 21:18,21 22:8 23:10,22 24:3 34:20,20 35:4,22 36:3 37:1 63:11,14 63:20 64:6,9,21 65:15,19 66:6 66:10 67:4,21 68:16 69:1,22 70:2 71:6,18,22 72:5,13,20 73:1 73:11,19,20 88:15,17 89:2,6 89:11 90:5,22 91:10 92:12,14 93:8,15,22 94:11,18,20 95:12,20 96:3 96:18 97:11 98:19,19 99:20 100:3,3,17,20 101:10,10,15,21 104:7,16 105:6 105:14 107:7 111:19 112:1 112:19 115:13 light' 88:3 light,' 89:15 limit 65:21 66:11 66:14 limitation 26:9 42:13 43:14 44:19 45:6 46:18 47:8 52:21 53:12 54:17 55:11,17 60:17 61:1,2,5 61:17 62:5,7 89:17 98:16 limitations 62:2,3 limited 49:12 114:1 125:5 line 63:16 70:10	97:22 98:9 99:9 99:16 134:22 136:17 137:11 137:11,16,17 138:20 146:11 lines 47:12 51:12 127:14 136:7 link 82:12,16 list 54:6 82:8,19 litigation 10:6 12:1,11,18 115:9,16,21 little 124:15 LLC 146:1 LLP 3:13 144:1 logging 74:21 logical 130:13,15 131:5 long 123:21 134:3 longer 73:8 96:19 96:22 125:16 126:6 look 18:3 49:21 51:4 58:3 69:15 69:16 71:7 82:13 83:21 85:12 99:2 119:1 135:9 looking 7:18 18:1 21:4 42:4 55:17 59:13 64:15 72:9 75:9 78:19 94:15 95:3,9 97:20 111:4 121:20 127:11 136:6 looks 79:20 Lori 1:18 2:5 143:3,9 lot 44:6 114:5 130:10 137:8 low 106:1 130:17 131:7 lower 79:8 lunch 77:1	M M 1:21 145:1 146:2 main 3:14 36:14 45:12 46:5,13 52:13 85:22 144:2 makeup 35:7 making 47:17 105:18 142:13 management 74:18,22 75:2 manages 84:3 manner 49:9 mapped 99:4,12 99:14 mapping 100:8 102:2 marked 4:10 6:18 7:21 21:11 77:10 119:2 MARTENS 3:13 144:1 Maryland 2:11 143:15 Masimo 1:8 3:12 5:21,21 8:11 9:4,12,18,21 10:8,12,21 11:9 11:17 12:1,5,7 12:19 13:7 15:4 15:7 144:3 145:4 146:8 Masimo's 119:18 120:4 matter 112:18 124:2,20 144:6 Matthew 3:13 9:5 matthew.ruth... 3:16 mean 10:4,6 27:21 28:7,10 51:1 53:4 69:14 70:22 73:13 80:3 82:18
K keep 33:9 127:18 Kenny 15:17,20 16:1 KENT 143:19 KIM 3:6 kind 58:10 KNOBBE 3:13 144:1 know 15:16 19:2 23:12 27:18 28:16 29:20 30:5 31:7,17 32:14 33:18				

84:16 128:13 137:8 meaning 72:4 75:4 88:2,16 89:14 94:10 101:14 118:1 120:1,6 means 28:4,18 29:6,11 30:2,14 31:4,18 32:15 33:6,19 80:5 114:18 115:22 139:12 measure 58:11 63:18 measured 57:19 57:20 63:12,14 64:10,21 65:19 66:6 67:4,21 68:17 80:9 measurement 16:19 17:2,14 19:7,11,18 20:4 36:10 38:11 39:13,22 40:4 40:12,17 41:17 43:18 45:14 46:7 47:9 52:22 53:8,10,13,19 53:22 54:12,18 55:2,12,19 56:3 56:6 58:13 59:6 59:9,12,17 61:7 61:13,18 62:8 62:15 70:16 98:18,20 100:2 100:5 101:9,11 105:19 108:3 111:19 112:1 125:14 135:1,6 135:11,17,19,22 136:2,12,18,21 137:13,18 138:2,7,10,12 138:17 139:5,6 139:15,16,18,22 measurements	37:14,20 55:7 83:20 112:8 139:21 medic 86:5 124:3 124:10,21 125:7,11,20 126:1,2,19 127:2 134:7 medical 121:15 122:2,8,16 123:5,9 124:4 124:22 125:2 126:20,21 127:3,5 128:1,7 131:9 meet 38:12 77:3 117:11 memory 20:5 108:6,9 119:1 Mendelson 77:9 77:16 79:7,10 81:16 82:7,14 83:21 84:9,14 84:20 85:4,10 86:8,12 88:13 89:10,16 93:19 94:19 95:7,9 99:11 103:7,11 104:12,14,18,19 104:21 106:8 106:12 107:1,5 107:9,12,15,18 108:10,14,22 109:2 110:15 110:21 111:15 111:17,22 112:5 113:5,9 113:16,21 114:20 115:6 115:11 116:7 120:11,13,20 121:10 122:6 128:14,17 129:12,13 131:16 Mendelson's 89:20 90:11	94:1 95:13 96:5 97:14 99:5,12 100:21,22 101:1,22 102:14 103:19 104:1 114:19 120:15 121:5 125:12 126:3 131:2 132:3,12 133:9,14 mention 66:2 mentioned 11:19 37:15 42:7 60:9 90:8 109:9 112:5 merely 13:13 met 16:1 method 139:3 micro 75:15 76:10 microcontroller 102:18 104:5 106:5,7,10,20 106:22 107:16 107:20 108:7,9 110:12,18 milliseconds 111:20 112:2 mind 46:22 109:18 minimal 132:20 133:22 Minneapolis 3:8 Minnesota 3:8 minute 132:18 minutes 48:3 77:3 133:20 mischaracterizi... 31:5 missed 114:8 115:4 misstates 45:17 mistaken 28:20 mobile 16:20 17:3,8,15,16,20 18:12,16 19:9 19:17 20:6	37:10,16,21 38:9,10 39:11 39:11 40:3,15 42:22 43:1 45:15 46:8 53:14 54:1,20 55:6,14 56:4,16 57:1,6 61:19 62:9 79:10 132:14 135:1 135:13,19 136:1,9,14,19 136:22 137:2 138:16,21 139:6,16,18,22 modification 125:19 126:12 126:15 modified 97:2 129:12 modifying 96:13 131:2 133:13 module 16:10,18 16:22 22:1,3,4 24:14,15 36:5 37:10 38:5,6 61:15 69:8 70:6 70:11,14 75:1 85:7,14,15,21 89:20 90:3,11 91:6 92:7 93:13 94:1,19 95:9,16 97:9,15 99:5,18 99:21,22 101:7 102:1,9,12,14 103:6,11,12,14 103:20 104:2,6 104:15 105:5 106:16 107:2 107:10,16 108:11,19 110:14,19 111:8 113:1,2,6 113:16 114:19 120:16,22,22 121:3,6 124:19 125:13,15,21	126:4,9 127:17 129:4,11,14 130:2,6 131:2 131:16,17 132:1,4,5,7,16 133:9,14,18 134:4 module's 104:7 106:5,6,10,21 130:15 131:6 modules 86:11 99:12 122:10 128:4 129:22 132:12 133:1 moment 17:11 monitor 80:21 84:12 85:6,20 86:6,10 124:3 124:21 127:20 monitoring 86:4 87:2 114:11 124:9 125:13 126:5 morning 42:8 61:22 91:17 Motion 140:6,9 140:13 motivated 131:1 mouth 50:8 move 20:7 43:6 47:4 54:15 60:14,14 62:18 moving 89:7 103:1 108:1 117:9 Muhsin 13:21 14:2 20:12 22:16 23:20 24:4,6 26:3,14 43:11,11,14 44:11 46:11 52:11 55:1,11 55:21 57:21 59:15,20 60:3 61:3,10 98:15 Muhsin' 35:1 Muhsin's 21:15
--	--	--	--	--

37:4,11 38:18 59:1 multiple 38:16 50:11 54:8 61:22 62:12 84:10,15 85:2 112:8 121:15 122:3 123:10 123:12	25:10 27:5 non-wireless 24:18 25:4,6 26:22 27:2,11 27:14,17,21 28:3,8,14,17,21 29:3,6,11 30:1 30:13 31:3,18 32:15,19 33:6 33:18 34:9,14	33:20 35:8,18 38:15 39:15 44:15 45:17 47:11,18 49:7 49:14,15,15,16 49:18,19,20,21 50:2,4,16,16,17 50:17,18 51:9 51:15,15,21,22 51:22 52:1,2 53:2 86:14 87:5 116:15 134:1 138:18	operational 127:18 131:19 operations 103:19 opined 41:21 42:9 45:11 46:5 opinion 17:18 18:14,20 23:19 24:16 25:13 26:1 27:12 30:22 33:3 39:2 42:19 46:3 55:10 60:7 64:7 64:11 72:3,18 73:6 89:15 94:8 96:15 101:13 103:5,9 114:20 115:6 118:4 140:22	110:1 ordinary 7:5 28:1 28:15 29:5,8,21 30:10,11 31:1 31:15 32:5,10 32:14 33:4 72:4 88:1 89:14 94:10 101:14 118:1 120:1,6 124:4,22 126:20 127:2,5 orientation 81:7 original 144:11 outcome 143:8 output 20:22 21:7,22 22:11 23:1,4 24:13 36:4,10 37:9,13 37:15,19,21 43:1 54:18 55:5 55:13,18 56:8 61:11 63:11,13 64:6,9 65:5,9 65:14,16 66:4 66:22 67:18,19 68:1,4,6,21 69:21 71:5,17 71:21 72:5 73:1 88:3 92:14 93:8 93:22 94:11 96:16 100:21 101:15 103:11 114:18
N	noninvasive 63:17 noon 76:21 Notary 2:10 143:1,3,10,11 145:22 noted 145:11 notes 8:15 48:8 noticing 144:12 noting 144:12 number 5:13 6:9 6:14 8:3 108:4 108:17 109:14 110:2,4,7 112:9 112:16 132:5 143:11 numbers 112:4 112:15 131:10 numerical 80:9 80:12 NW 1:21 145:1 146:2	objections 30:3 34:10 38:22 40:7,19 41:11 48:8,16,17 49:10,12,13,17 51:14 obtain 133:21 October 7:12,13 7:14 offering 140:22 office 1:1 144:7 144:15 Oh 7:16 82:22 119:6 Okay 27:10 43:8 47:5 60:21 66:13 83:2,4 84:5 87:17 95:8 119:8 123:19 125:9 142:19	opinions 13:9 43:22 140:12 141:3 opposed 13:12 optical 20:22 21:7 22:6,11 23:2,18 34:19 36:21 43:17 59:5,19 61:12 63:18,20,22 64:18 65:6,10 67:1 68:7,15 70:19 71:4 72:5 72:7 73:1,3,9 74:1,5 75:12 88:3,5,14 91:16 94:11,13,21 95:2 98:17 99:6 99:15,19 100:2 100:18 101:8 101:15,17 102:1,6,7,9,15 115:12 116:1 135:12,15 136:14 137:12 138:1,6,9 option 144:9,10 order 109:7,13	orientation 81:7 original 144:11 outcome 143:8 output 20:22 21:7,22 22:11 23:1,4 24:13 36:4,10 37:9,13 37:15,19,21 43:1 54:18 55:5 55:13,18 56:8 61:11 63:11,13 64:6,9 65:5,9 65:14,16 66:4 66:22 67:18,19 68:1,4,6,21 69:21 71:5,17 71:21 72:5 73:1 88:3 92:14 93:8 93:22 94:11 96:16 100:21 101:15 103:11 114:18 outputs 90:4 91:4 91:9 93:14 97:10 103:13 outputting 56:2 70:3 88:14 98:17 99:19 100:1 101:4,8 102:11 115:12 134:22 135:18 135:22 136:18 136:21 137:12 outside 40:5,17 54:2 72:19 73:5 overall 106:13
	O	OLSON 3:13 144:1 Once 83:22 106:3 ones 130:16 131:6 open 82:6 119:6 119:13 opening 83:6 operate 132:1 operated 46:16 52:16 operation 64:1 70:12 104:1 131:14 132:6,9		

oversimplifying 43:3	144:12 145:4 146:11	103:1,2,17,18 104:3 108:1	party 50:1,3 passed 21:18	131:3 132:22 133:10,13,20
Overview 16:15	pages 16:8 114:6	110:10 111:5	23:22 35:4,22	134:5,9
owner 1:10 3:12	119:17 145:7	112:21 114:13	patent 1:1,2,7,10	PDA's 123:4
5:20,22 13:4	panel 84:3	114:16 115:20	3:12 5:12,20,22	132:14 133:11
14:10,14,15	paper 77:20 78:1	116:13,20	6:8,8,15 7:1	133:15 134:12
140:4,18,19	78:7,17 79:20	117:7,19 120:8	11:13,15,19,21	PDAs 122:8
owner's 48:7	85:4 86:22 87:3	120:14,19	12:6,12,19 13:4	131:9
oximeter 86:3	104:18,21	121:21 122:2	13:22 14:7,10	PDF 82:16
112:7 114:10	106:12 107:18	123:18,21	14:14,14 16:13	Pennsylvania
124:5 125:1,5	110:21 111:17	125:10,18	16:16,18 17:6	2:13 143:21
127:7	112:5 113:21	126:8 127:10	17:19 18:3,15	people 84:15
Oximetry 63:17	114:3 122:7	127:13 129:3	19:6,20 25:3,8	122:9
oxygen 98:22	128:14,17	129:18,20	25:16 26:6,10	percentage 13:11
	papers 82:11	130:11 131:13	26:19 28:16,18	13:17
	114:1 142:4,8	132:10	28:19 29:9,10	perform 36:22
	142:14	paragraphs 16:6	29:16,22 30:10	45:12 46:6
P.C 3:4	paragraph 12:5	16:12,14 26:13	31:2,8,13,16,17	performed 20:4
p.m 77:6 117:15	16:9,17 17:5	47:4 54:16	32:7,11,11,12	40:1,13 41:17
117:16 141:14	18:10 20:7,18	103:22 114:13	32:13,20 33:4,7	52:22 53:19
141:15 142:22	21:6,14 22:21	118:9,10,11	33:10,11,15,16	54:1,12 61:8,14
packet 102:20	25:14,20 26:7	parameter 80:16	33:17 34:8	62:15 135:5
packets 107:22	26:17 27:20	80:16	36:15 38:14	136:1
110:13,18	34:18,22 35:21	parameters 37:14	39:5,7,14 42:14	performing 36:13
111:2 113:4	36:6 37:4,11	37:20 63:19	44:14,20 45:12	46:12 52:12
page 4:4,12 7:16	41:21 42:5,7,8	80:10	46:5,14 48:7	perfusion 43:19
12:4 45:11 46:2	42:12,18 43:6	part 9:6 14:5	52:14 60:2,6	55:4 58:8,9
46:11 47:22	43:13 44:8,9,10	16:15 39:19	61:1 63:1,5,8	59:7,14
52:18 56:13	44:18 45:9,10	43:14 44:17	63:15 64:15	period 106:18
57:4,11,14 58:4	46:1,3 47:3,21	45:10 46:17,19	65:13,20 67:17	144:13
58:7,17,21 69:6	52:9,10 54:16	54:22 74:14	68:5 70:9,21	person 7:5 8:21
69:12 74:6 79:7	55:1,21 56:10	81:16 87:15	71:3 76:15	8:22 16:2 28:1
79:12,22 80:11	56:13,18,20,21	89:18 105:3	88:10,20 92:2	28:15 29:4,8,21
84:9,10 85:13	57:3 59:1 60:15	106:13 107:13	92:16,18 93:3	30:10,11,12
85:16 87:18,21	60:21 62:19,21	115:4 120:12	93:20 95:1	31:1,15 32:5,10
88:13 89:18,22	62:22 63:4,9	120:18 123:21	97:21 118:2,6	32:14 33:4
90:1 92:10	65:8 69:5,18	125:18 130:19	120:2 134:15	80:17 81:9
93:11 94:8	71:16 72:2,10	136:11 138:1,7	140:4,17,19	83:19 85:5,19
95:10 98:14	72:22 74:7,9,12	138:17	patient 63:19	86:10 121:4
99:14 103:2	74:17 75:4,5,7	particular 18:2	PATRICK 3:5	123:8,15 124:3
111:10,17	75:21 76:14	81:5	PDA 79:15 84:5	124:21 125:14
114:1 115:18	85:15 87:16,19	particularly	85:1,5,16,20	126:2,5,14
115:19 120:18	88:18 89:8,19	17:16	86:5 121:1	131:11
121:2,11,12,14	91:22,22 92:4	parties 143:5,7	122:16 123:3	person's 124:19
121:17 123:22	93:2,17 94:7	Parties' 118:12	124:12 125:12	125:12 126:4
123:22 124:17	95:1 97:9 98:14	118:17	125:14,15,20	personal 59:3
126:21 127:12	100:14 101:12	parts 29:15	126:3,5,10	personnel 121:15
127:13,15				

122:2,8,16 123:6,10 128:1 131:9 persons 86:11 121:5 petition 82:4,5,10 98:6 99:4,8 100:8 102:3 134:20 petition's 99:10 petitioner 1:5 3:3 6:4 12:6 99:4 142:18 Ph.D 1:13 2:2 4:2 5:5 144:1,4 145:5 146:9 photo 23:14 65:3 68:2,21 photodiode 23:15 35:11 90:3,10 90:20 91:3,5,9 91:11 92:14 93:8,14,22 94:17 95:5,7,13 96:5,8,16,20 97:1,4,5,10 99:21 100:21 101:2,5,20 102:7,10,16 104:8 photodiodes 23:15 35:12 phrase 6:12 115:9 physical 122:9,17 physically 126:1 physiological 63:18 70:16 86:4 114:11 125:6 picked 112:15,16 picking 123:7 picture 57:11 96:12 114:8 placed 121:8 plain 72:4 88:1 88:15 89:14	94:9 101:14 118:1 120:1,5 plan 5:19 please 8:6,21 12:22 21:3 42:6 60:18 67:12 77:14 81:20 104:11 144:6 144:10,11,14 plenty 127:18 131:18 plurality 57:8 plus 111:6 point 14:2 18:4 19:1 28:20 29:15 60:12 113:22 119:14 134:12 140:10 policy 48:13 portion 20:10 58:14 80:1 portions 57:9 POSITA 7:4 33:15,18 34:7 69:13 72:3 87:22 94:9 101:13 103:5 103:10 105:1,4 105:7 107:5 109:11,14 110:2,5,6,21 112:6,10,14,15 112:19 113:11 114:3 116:2 124:1,19 125:22 127:16 129:21 130:22 131:3 133:8 position 120:4 possession 33:16 possible 66:1 69:4 122:12,13 123:5 potential 128:21 power 17:7 124:18 125:12 125:21 126:3	127:18 131:3 131:18 132:13 132:18 133:10 133:14,20 powering 126:9 PPG 43:19 55:5 58:15,19 59:7 59:14 79:20 80:1,15 103:14 106:4,9,19 107:3,10,17 108:3,5,8,12 110:11,11,16,17 111:6,7 113:1,7 113:10 practice 26:11 42:15 44:21 45:3 48:8 preceding 91:22 precluded 140:21 predict 128:2 premise 100:7,10 102:13 preparation 9:6 prepare 9:1 13:4 prepared 8:7,12 13:1,6 preparing 8:19 12:12 14:2,11 14:15 preprocessing 102:19 presentations 78:9 presented 78:1 142:4,8 presenting 78:6 pretty 108:17 112:9 130:5 previous 30:21 32:1 56:5 previously 4:10 6:18 7:21 21:11 76:13 77:10 119:2 prior 12:12 71:9 71:20 72:8 73:3	74:1 130:2 140:10 privilege 50:18 52:2 privileged 12:21 privy 32:6 probably 33:12 Procedure 48:15 144:14 proceeding 5:12 5:22 6:13,14 7:1,10 9:13,15 10:15,22 11:7 11:17 14:6 15:1 118:14,19 140:5 proceedings 5:2 10:7 11:20 48:18 78:18,20 79:2,4 process 13:1,3 38:8 76:7 106:19 107:13 111:1 processed 70:15 76:3,11 110:13 110:18 111:2 116:5 117:6 processes 17:1 processing 16:10 16:18,22 17:13 17:21 18:11,17 19:8 20:3,5 22:1,2,3,4 24:13,15 36:5,8 36:13,14,17,19 36:19 37:6,6,10 37:13,19 38:4,5 38:6 39:9,9,21 40:1,11,13 41:16,18 42:21 43:15 45:13,14 46:6,7,12,13 47:9 52:13,13 53:1,4,5,11,18 53:20 54:11,13 54:19 55:3,5,13	55:18 56:2,8,9 59:4,10,15 61:6 61:8,11,15,15 61:19 62:8,13 62:16 64:18 65:6,11 67:1 68:8,16 69:8,9 70:6,11,14 71:10,20 72:8 72:15,17 73:3 74:2 88:4 90:17 92:7 94:12 96:7 96:13 102:17 105:3 106:2 114:4 115:14 135:6,10,11,15 136:2,8,12,13 136:22 137:18 138:1,6,12 professional 2:7 128:7 prohibited 48:10 48:19 project 114:9 prominent 79:22 proper 49:18 properly 49:14 proposal 126:12 proposed 125:19 proposing 87:8 126:8 prototype 20:12 20:19 21:5,16 22:16,19 24:8 25:8 26:14 35:2 36:7,22 37:8 38:2,19 41:22 42:9 43:10,15 44:1,12 46:15 46:15 52:15,15 54:17 55:3 56:15,22 57:6 59:3,21 60:4 61:3,12 prototype's 56:7 provide 9:19 17:14 23:15,16
---	--	---	--	---

34:12 59:22 60:7 provided 8:11 15:11 18:20 34:4,22 39:2 provides 17:6 23:21 41:22 42:10 63:10 65:14 69:20 71:16 providing 130:20 132:5,8 proximity 122:9 122:17 Public 2:10 143:10 pulsatile 58:11 64:3 pulse 43:18 55:4 58:4 59:6,14 86:3 112:7 114:10 124:5 125:1,4 127:7 purchased 144:8 purpose 36:14 45:12 46:5,13 52:14 85:22 87:11 119:21 put 97:8 113:20 114:7 putting 98:13	47:3,20 48:21 49:19,21 51:17 53:21 54:8 55:15 61:21 65:16 66:22 70:17 81:19 83:14 85:18 97:8 100:6,11 100:13 109:17 113:8 122:11 128:5 132:21 133:17 136:3 136:20 138:3 questioning 47:13 99:10,17 questions 22:18 40:22 41:10,12 49:2,3 50:10 51:6,13 52:6 141:8,19 142:16 144:14 145:10,13 quickly 123:10 132:15 133:11 133:15 quite 76:16 91:8 quote 68:5 quoted 88:22	read 24:11 31:12 31:17 32:12 33:16 39:4,6 55:22 71:15 103:7 115:5 118:17 122:19 122:21 138:14 145:6 reader 114:3 reading 15:15 32:13 33:4,17 34:8 39:19 45:20 54:22 80:12 81:15 85:8,9 118:21 119:13 121:19 137:20 138:11 ready 144:6 really 33:8 41:9 112:18 Realtime 2:8,8 51:4 recall 9:11 10:17 10:18 11:2,18 60:11 78:16 79:3 91:14 129:16 141:19 receive 36:8 75:16 79:1 84:7 received 21:17 23:21 35:3,22 43:16 55:13 56:4 59:18 88:3 91:5 94:12 100:21 123:13 receiver 85:15 103:14 110:14 110:19 111:7 113:2 120:22 124:19 125:13 125:15,21 126:4,9 127:17 128:3 129:4,11 129:14,22 130:2,5,15 131:2,6,17,22 132:4,5,12,16	133:1,9,14,18 134:4 receives 17:1 70:12 receiving 115:14 135:14 recess 48:4,5 77:5 77:6 117:15,16 141:14,15 rechargeable 130:8 recitations 42:1 recited 73:18 76:2 99:15 recites 134:22 136:17 137:12 recognition 75:18 recognized 131:4 recollection 84:21 record 50:11,14 105:21 recorded 145:10 145:14 rectangle 83:13 83:13 red 103:13 104:5 104:7,16 105:6 105:14 106:4,9 106:16 107:7 108:5 109:22 110:11,16 111:6 reduce 105:12,17 reduced 26:10 42:15 44:21 45:3 reduction 134:10 refer 20:1 21:9 30:20 31:22 40:9 41:13 56:5 63:7 66:8 75:13 101:22 116:3 121:2 138:8 reference 13:20 18:7 74:13 75:14 77:9	89:10 104:12 111:15 120:11 121:11 referenced 144:6 references 74:15 referral 4:11 6:20 8:1 21:13 77:12 119:4 referred 94:17 95:11 referring 5:21 6:4 6:8,13 7:5 19:2 20:16 25:11 27:20 29:3 33:9 34:15 58:21 62:12 64:13,14 65:9 67:17 71:8 75:21 76:13 77:17 88:19 89:2 92:8 93:2 95:1,2 138:20 refers 35:21 57:21 72:6 73:2 75:16 88:4 94:12 101:16 reflectance 114:10 127:6 reflected 86:1 reflector 125:4 refresh 83:2 88:11 118:22 refusing 30:17 regarding 5:11 5:12 9:13 10:12 10:15 11:17 26:3 91:15 100:8 Register 48:11 Registered 2:7 regular 129:8 reject 95:21 96:4 related 8:10 10:1 12:11,15 88:11 141:6 143:5 relative 58:12 143:6 relatively 114:2
Q	R			
qualification 15:9 qualify 76:2 108:20 quality 58:11 quantify 134:6 question 19:15 19:22 21:2 22:22 26:16 29:1,19 30:7,18 31:7,10,22 32:4 34:1,3,7,13 37:4 38:18 39:8 40:15 41:1,3,4	R 1:13 2:2 4:2 5:5 144:1,4 145:5 146:9 radiation 63:21 64:1 radios 129:8 range 123:4 rate 43:19 55:4 58:4 59:6,14 80:9,16 83:16 83:20 112:2 raw 70:12 71:12 73:12,12,13 74:4 114:19 115:3,22 116:10 re-ask 64:7			

relaying 98:8	127:1 129:3	136:16	111:6,7 113:1,7	82:22 87:18
relevance 49:16	130:4 131:8	revealing 12:21	113:13	112:8
50:17 52:1	133:21	review 12:12	sampling 112:19	seconds 113:2,17
relied 36:7	required 70:20	140:9 144:8	SARASOTA	section 16:15
relying 105:20	71:2 118:5,8,9	reviewing 8:13	143:11	26:13 43:22
remember 11:14	121:6 126:22	13:13	satisfied 137:1	44:17 45:2
11:20 78:12	requirement	revised 13:5	satisfy 66:17	48:15 55:17
99:7,8 118:21	100:1	revising 142:12	86:12 100:1	88:12 120:13
119:13	requirements	RF 107:22 113:3	101:7	sections 93:3
remind 48:7	38:13	RICHARDSON	saturation 98:22	see 7:13 16:21
remote 1:13 2:1	requires 40:10	3:4	savings 17:7	17:10 19:21
3:1 84:1 86:4	41:15 54:10	right 5:15 8:6,16	saying 100:15	20:20 21:10
87:2 114:10	66:9 73:22	16:4 50:12 51:4	102:6 108:21	52:17,18 56:18
123:3,7 128:22	100:17	52:8 62:4 92:22	125:22 126:14	57:11 58:4 61:9
remotely 85:6,20	requiring 53:8	93:6 96:12	131:22	63:3 69:11,12
86:5,10 125:13	research 114:9	117:18 121:13	says 21:15 28:20	69:16 70:8 71:8
133:1	resistor 35:13	121:18,20	36:6 37:12	74:14 81:3,5,15
repeat 19:14 54:9	respect 60:1,8	123:20 124:4	39:20 53:3,17	82:7,8,17,19,20
92:10	76:1 89:10	124:21 142:12	55:1 59:2,15	82:22 83:2,7,9
repeated 50:10	91:21 92:2	rough 9:19 10:9	61:10 79:12	84:20 86:1 88:6
51:16 64:16	97:14 119:15	roughly 15:2	83:9 98:13	88:7 89:13 90:1
repeats 111:19	respects 38:16	RPR 1:18 2:6	110:16 123:9	90:6,16 92:3,4
112:2	respond 28:11	143:3,9	124:17 135:9	95:22 98:11
repetition 112:13	33:13	RSA 1:19 2:6	136:4 137:17	102:17 103:15
rephrase 83:17	responder 128:8	Rule 48:14	138:9,15,21	103:16 104:9
95:8 100:12	130:10	rules 48:14 51:10	139:12,14	104:10 111:10
128:15	responders 129:1	144:14	scenario 121:14	113:19 115:18
rephrasing	responds 63:22	run 57:7	122:15 133:4	118:15 121:16
109:19	response 70:2	running 59:9	scenarios 66:15	124:7,16
replace 130:9,15	responses 32:1	130:17 131:7	122:12	125:17 127:21
131:5	responsive 66:10	131:18 132:22	scope 19:12,19	127:22 130:18
replacing 129:21	69:1 71:6,22	Ruth 3:13 9:5	39:14 40:5,18	131:14 135:3,4
Reported 1:18	72:5,13,20 73:1		41:5 54:2 66:15	137:14,19
Reporter 2:7,8,9	73:11,19,20	S	66:20 67:15	139:8
represent 57:19	88:2,15,16 89:1	sake 99:9	72:12,19	seeing 99:7
representatives	89:6,11,15	sample 79:15	screen 56:14,21	seen 12:14 116:6
11:16	94:11 98:19,21	105:14,18	58:2 80:18 81:6	select 80:21 84:6
represented 90:9	100:3,16 101:9	108:5,8 110:11	81:8 84:17,19	84:12
reproduced	101:15,21	110:12,16,17	85:3	selected 84:1
89:19	115:13	samples 37:2	screenshot 22:20	144:10
requested 50:3	rest 26:12 91:12	103:14 104:6	scrolling 80:1,4	sends 16:19 17:3
require 17:19	resulting 108:5	104:16 105:6,8	SD 75:15 76:10	38:8
18:15 47:8	132:4	105:10 106:4,9	searches 9:8,8	sense 124:2,20
52:21 61:17,18	retained 10:21	106:19 107:3	second 16:5	126:13
62:7 71:22	14:21 86:9	107:11,17	17:11 37:12	sensed 37:1
72:14 73:11,14	retrieve 132:19	108:4,5,12	56:13 58:1	sensor 17:1 20:22
73:17,21 115:2	returning 26:15	109:4,14,21,22	60:18 65:7	21:7,16,20 22:4

22:7,11 23:2,18 24:2,12,14 34:19 35:2 36:9 36:21 43:17 59:5,19 61:12 63:10,18,19 64:18 65:6,10 65:14 67:1 68:7 68:15 69:6,7,14 69:15,20 70:1,4 70:5,12,13,18 70:19,20 71:2,4 71:16 72:6,7 73:2,3,9,11 74:1,5,19 75:1 75:3,10,11,11 75:19,22 81:12 81:13 82:1,1 83:13,15,19 84:4,6,8 85:6 85:13,21 86:11 88:3,5,14 89:20 90:3,11 91:15 91:16,19 92:1,5 92:6,15,20 93:2 93:9,12,13,16 94:1,11,14,19 94:21 95:2,9,16 97:9,14 98:17 99:5,6,12,15,18 99:19,21,22 100:2,18 101:6 101:8,16,17 102:1,2,6,7,8,9 102:12,14,15 103:6,10,12,20 104:1,6,15 105:5 106:5,6 106:10,16,21 107:2,10,16 108:11,19 112:22 113:6 113:16 114:19 115:12 116:1 120:16,22 121:3,6 122:10 122:18 123:15	131:16 132:7 135:12,15 136:14 137:12 138:1,6,9 sensors 75:17 121:15 122:3 123:6,10,13 sent 107:22 125:14 sentence 36:12 37:12 61:9 72:10 80:12 88:22 92:10 103:4 104:4 106:15 108:2 110:9 111:5 112:22 115:5 122:21 127:22 131:15 sentences 45:20 106:3 114:15 122:22 separate 80:13 September 78:3 143:20 series 22:17 set 108:3 setup 69:4 sheet 144:11 145:11 146:6 short 106:18 Shorthand 2:9 show 29:2 33:11 showed 84:21 showing 22:21 56:22 58:15 79:9 80:8,19 85:2 shown 22:19 41:22 42:9 46:15 52:15 56:14 57:9 58:1 58:5 79:18 80:2 80:7 81:21 95:10 99:13 110:14 111:16 shows 56:15	79:15 81:11,22 95:17 side 121:13 sign 84:14 132:19 133:21 144:7,8 signal 21:21 22:6 22:13,14 23:1,9 23:9,13,13,17 36:13 37:5 45:13 46:6,12 52:12 58:11 63:11,13 64:6,9 64:20 65:4,5,9 65:10,15,17,17 65:18,21 66:4,5 66:6 67:1,2,3 67:18,19,20 68:2,5,7,7,15 68:21 69:9,21 70:15 71:3,17 71:19 72:1,1,11 72:14,16,16 73:12,15 74:5 75:12 90:4,8,21 91:4,4,9,11 92:11,13 93:7 93:14,21 94:17 94:19 95:3,4,6 95:11 96:2,14 96:16,17,18,22 97:3,10 99:20 100:19 102:19 105:2,11,16 106:1,14 107:6 107:14 109:9 109:11 110:7 115:2,3 signalling 41:7 signals 17:1,2 20:3 22:1,8,10 23:1 24:2,5,5,9 24:12 36:3,4,9 36:10 39:22 40:12 41:16 43:16 53:18 54:11 59:4,18 61:7,11,14	62:14 66:10 70:13 71:5,9,13 71:22 72:5,12 72:19,22 73:10 73:18,19,20,21 73:21 75:20 76:2,7 88:2,15 88:16 89:1,5,11 89:15 94:10 98:18,21 100:3 100:16 101:9 101:15,20 106:2 113:10 114:20 115:1 115:13,14,15 116:1,4,11 117:3,5,6 119:16,19 135:14,16 signals' 114:21 115:7,22 116:3 signature 7:16 142:21 144:6 144:12 145:4 145:17 146:22 signed 144:11 signing 144:10 similar 61:10 132:5 simple 41:4 79:13 simply 130:15 131:5 simultaneously 84:15,16,18 Sincerely 144:18 single 41:1 49:13 57:19 105:13 site 58:13 63:21 64:4 98:21 100:5 101:11 134:7 six 105:9 127:14 Sixth 3:7 skill 7:5 28:1,15 29:5,8,21 30:10 30:11 31:1,15 32:5,10,14 33:5	skip 114:12 solely 36:8 solution 126:9,16 126:18 129:2 131:8 soon 96:11,21 sorry 16:10 27:8 42:3 43:11 46:2 59:16 60:20 64:7 74:7 81:4 82:18 84:2,10 90:15 103:7 116:17 119:6 128:12 130:13 133:5 135:18 138:4 sound 12:8 77:3 sounds 117:13 source 34:20 98:19 100:4 101:10 South 3:7 speak 12:17 speaking 48:8,16 51:14 specialized 118:5 specific 10:5 11:3 11:10 23:18 25:10 28:7 34:14 43:5 44:9 58:20 62:1 66:20 67:7 68:10 70:21,22 83:22 86:17 87:7 91:2,18 108:17 109:14 110:1 112:9 129:18 specifically 9:15 16:6 22:2 25:19 45:1,10 48:12 51:18 64:13 66:3 67:17 85:9 86:18 91:21 97:12 101:19 105:8 107:4 109:4,21
---	---	---	--	--

110:20 112:12 115:10 116:9 119:15 134:15 134:19 specification 16:13 17:13 18:22 63:7 69:16,17 71:8 71:14 75:8,9 88:19 92:5 93:10,17 specifics 99:8 spend 8:19 SpO2 17:14,19 18:11,15 19:7 19:10,18 20:4 37:14,20 38:7 38:11 39:12,22 40:4,12,16 41:17 42:20 43:18 45:13 46:7 47:8 52:22 53:8,9,13,19,22 54:12 55:4,12 55:18 56:3,8 57:16,22 59:6 59:14 61:7,13 61:18 62:7,14 80:9,12,16 83:16,19 98:17 100:2 101:8 134:22 135:6 135:10,16,18,22 136:2,12,18,21 137:13,18 138:2,7,10,12 138:17 139:5,6 139:15,16,17,21 139:21 Standard 1:15 start 16:6 96:11 103:16 130:21 started 11:3 96:6 starting 44:17 88:12 98:9 103:8 starts 97:22 98:3	103:2 121:22 134:21 136:17 137:11 state 2:10,10,11 2:12 8:9 16:9 16:17 17:4,5 42:17 48:13 54:16 55:20 69:6 72:2,21 74:17 75:14 87:22 88:13 90:3 97:8 106:3 106:15 107:4 108:2 110:10 111:18 112:22 113:9 114:16 118:3 126:20 127:16 130:13 130:14 132:3 143:11,13,15,19 stated 26:18 49:7 49:14 51:9 52:11 62:13 63:9 68:4 94:8 103:5,9 104:4 108:13 109:20 110:20 117:22 124:1 125:11 statement 12:2 69:20 90:7 94:4 137:9 statements 49:10 75:8 states 1:1 41:15 49:7 83:12 107:19 136:7 139:3,20 stating 43:13 68:6 108:18 111:6 115:10 133:8 136:4 step 72:17 108:15 114:4 steps 76:9 96:7 96:13 113:13 114:16 116:8 stethoscope	124:6 125:1 sticking 104:3 130:11 stop 16:11 storage 75:1 store 76:6 107:21 stored 75:15 106:6,21 108:6 108:8 stores 75:1 107:16 storing 76:11 straightforward 41:3 stream 113:3 Street 1:21 3:7,14 144:2 145:1 146:2 strictly 48:9,18 structure 35:7 subjected 91:11 submission 7:19 submitted 7:9 13:21 20:12,14 140:5 Subsection 45:2 45:5 49:6 115:11 sufficient 38:12 suggest 49:10 Suite 1:21 3:8 145:1 146:2 sum 107:17 summarize 92:9 summarized 118:8 summarizing 122:20 summary 20:14 26:4 44:12 59:22 119:22 134:2 summed 106:4,9 106:20 108:3 108:12 summing 37:1 sums 107:10	supply 131:17 support 26:4 41:22 42:10 43:11 44:2,13 46:17 47:7 52:21 56:1 61:2 105:21 supported 54:17 supporting 60:4 supports 25:15 26:18 42:20 55:11 supposed 51:7,18 sure 57:4 67:12 117:11 118:22 128:3,9 129:9 141:11,13 suspended 142:22 switch 76:17 sworn 5:7 143:4 system 21:16 25:2,13 26:16 28:18 30:9 35:3 36:7 38:3,19 46:15 52:15 56:7 63:5 64:14 79:13 81:22 83:9,14,18 84:2 84:3 85:5,11,19 86:1,8,12,17 87:4 89:21 98:18 100:2 101:9 103:7,11 109:5,7,8,15,16 110:4 111:21 112:11 120:15 120:20 129:11 129:13 132:12 133:9,16 135:6 135:11 136:2 136:12 137:13 137:18 138:2,7 138:10,13,17 139:6,16,18,22 system's 43:15 55:3 57:6 59:3	61:12 123:1 systems 2:8 42:9 109:12 131:13 T take 22:11 23:2 32:9 38:1 46:22 47:15 48:1 49:20 70:20 76:22 86:7,21 101:18 105:5,8 105:17 112:8 117:10 141:9 taken 20:18 48:4 77:5 83:20 105:9,10 109:14,22 117:15 141:14 143:6 takes 104:6,15 107:2 132:19 talk 9:15 77:8 79:8 97:12 117:18 120:20 123:17,21 134:15,18 140:17 talked 69:19 92:18 talking 7:19 22:18 24:21 25:7 43:22 45:6 46:2 47:14 52:8 56:20 61:6 62:2 62:4 65:2,4 67:6,8,8 68:2,9 68:19 69:2 75:7 76:1 83:8 85:10 88:8,22 93:1,18 93:19 96:9 98:14 116:10 125:19 talks 20:2 70:9 85:15 tech 15:11 technical 15:12 technique 105:11
--	---	--	---	---

106:1 109:10 127:1 techniques 69:9 technology 130:10 telephone 9:1 telling 36:16 temporarily 106:6,21 108:6 108:8 ten 15:2 48:3 105:10 term 6:3,7 27:13 27:14 28:3,14 28:16 29:5,10 30:1,13 31:3,8 31:17 32:15,18 33:6,9,12,14,18 34:14 49:13 51:18 65:9 69:14 71:12,21 73:10,18,20 74:3 75:3 77:16 89:10 91:15 92:1,15,17,20 93:2,4,9,11,16 94:4 100:16 107:13 115:1 119:16,19 126:17 terms 5:18,20 24:7 27:4,8 71:12 118:2,6 120:1 137:6 testified 5:7 testify 15:13 testifying 14:21 15:9 49:5 testimony 26:3 43:10 48:12,20 50:4 143:4 text 111:6,11,14 Thank 15:14 45:8 117:14 142:19,20 thing 99:13 102:5 things 43:3 98:5	think 15:8 27:5 30:20 41:7 43:2 55:20 72:21 80:11 82:9 91:8 97:7 113:19 117:4 122:11 136:3 137:4,8 thinking 30:19 third 17:12 58:5 104:4 131:15 Thomas 15:17,20 16:1 thought 82:11,21 three 9:17 60:9 114:15 120:21 throat 46:21 throwing 130:4 time 1:15 7:6 8:18 28:2,16 29:10,22 31:2 31:16 49:20 50:9 76:18,21 79:5 84:22 85:3 97:18 106:18 130:5 137:4,8 144:13 times 14:20 15:2 30:5 50:11 54:8 61:22 62:12 131:11 tissue 63:21 64:4 98:20,22 100:4 101:10 tissues 63:12,14 64:10,22 65:19 66:7 67:5,22 68:17 title 86:1 titled 20:13 today 5:11,18 41:2,8 47:15 140:10,18 141:19 today's 8:7,12,19 9:1,7 top 45:11 46:1,10 47:21 52:10,18	57:17 84:9 89:22 95:4 96:9 101:18 115:17 120:18 121:2 123:22 130:12 top-most 57:12 topic 117:10 total 15:6 totally 102:13 135:8 TRADEMARK 1:1 trans-impedance 90:10,21 91:12 95:18,19 96:3 99:22 100:22 101:6 102:11 transceiver 107:22 transcript 144:6 144:7 145:7 transcription 145:10,12 transmission 64:2 transmit 63:20 113:14 transmits 113:1,6 113:10,17 transmitted 39:10 59:8 69:6 70:5 75:10 92:6 110:13,19 111:3,7 transmitting 18:12 139:5,15 139:21 transreflectance 64:2 travelling 65:5,10 68:15 triage 123:11,12 123:14,14 128:22 trial 1:2 48:7 trivial 114:2 true 68:6 122:6	122:14 133:17 145:9,11 try 105:12,16 119:7,10 trying 66:10,14 turn 16:4 56:10 57:14 74:6 82:5 117:7 120:7 134:14 turning 79:7 81:12 82:1 89:7 127:10 132:10 139:2 turns 106:16,17 two 7:9 27:8 35:11 56:19 93:18 106:3 129:14,17 132:1,4,17,18 133:19,20 type 37:1 76:12 112:7 127:19 types 109:12 typo 139:10	101:13 103:6 103:10 107:6 110:22 112:6 116:3 124:2,20 126:1 127:17 129:21 undisturbed 105:11 unique 121:22 unit 83:22 123:3 United 1:1 12:8 unnecessarily 124:18 unnecessary 48:16 unprocessed 72:1 73:15,21 75:11 75:12,20 updating 80:6 uploaded 82:21 uploading 119:11 upper 90:11 91:2 use 5:19,20 6:3,7 6:12 7:4 27:4 36:9 74:3 75:3 77:16 86:5 91:22 93:11,16 104:22 105:16 107:12 111:21 112:14 125:20 126:19 128:18 128:21 131:19 user 20:13 26:4 44:12 55:8 56:15,22 57:5 57:13 58:2,6,14 59:21 60:5 61:4 79:10,12,16 80:8,20 81:21 84:1,5,11 98:20 100:4 101:11 user's 21:19 24:1 35:5 36:1 uses 24:6 71:12 71:12 129:14 132:4 utilize 131:17
--	---	---	--	---

utilizes 63:17	139:5,15	58:20 59:7,15	wirelessly 120:21	130:3 131:8
V	variety 75:17	79:18,20 80:2,3	139:4,14	132:17 133:19
v 1:6 144:3 145:4	varying 23:8,16	80:15	witness 2:3 4:2	138:14 139:17
146:8	68:22,22	way 17:12 46:16	5:6 10:1 11:2	write 13:2,12
vague 9:22 10:13	version 7:14 63:2	47:14 52:16	13:16 18:1,19	written 11:6,8
11:1 13:15	82:4,7	102:22 110:21	19:14 21:14	13:13 144:22
17:22 18:18	versus 12:7	129:13	23:4 24:20 25:7	wrong 103:7
19:13 23:3	video 20:12,19	wearable 79:13	25:18 27:3,18	X
24:19 25:5,17	21:5 22:19 26:2	83:22 84:11	28:6 30:4 31:21	Y
27:1,16 28:5	26:3 36:22 37:8	86:3 114:10	32:18 33:22	yeah 43:21 57:4,8
29:12 30:15	38:2 41:22	125:4 127:6	34:11 35:20	67:11,12 72:21
31:11,19 32:16	42:10 43:10	wearing 85:6,20	38:17 39:1,18	77:2 79:21
33:1,20 35:8,18	44:1,12 46:15	86:11 121:5	40:9 41:13	103:21
38:15 39:15	52:16 54:18	122:9,17	44:16 45:19	year 10:16
40:8,20,22 41:2	56:15,22 59:21	123:15	46:20 47:5,19	years 9:16,17
41:6,12 44:15	60:4 61:3	well-known	48:9,22 49:3,4	78:14
47:11 49:19	view 134:12	105:22	49:11 50:12,20	yep 98:7 139:11
50:8 51:9,15	vital 84:14	went 53:17 126:1	50:22 51:17	Z
65:1 86:14	132:19 133:21	Wentzel 3:14 4:6	52:3,6 53:3	zoom 9:1 83:7
116:15 134:1	volatile 108:6,9	9:4,22 10:13	54:7 62:11	zoomed 82:3
138:18	voltage 22:13	11:1 13:15	76:20 86:15	0
validity 140:13	23:7,16 64:5,8	17:22 18:18	87:6 116:16	0.5 113:2,17
value 18:16 19:7	64:12,19 65:1,2	19:13 23:3	117:9,13 119:5	1
19:11,18 38:7	65:18,22 68:22	24:19 25:5,17	134:2 138:19	1 12:4 18:8 19:12
38:11 39:13	vortex 70:15	27:1,16 28:5	143:4 144:8	19:20 20:2 26:5
40:4,17 42:21	W	29:12 30:3,15	145:5,17 146:9	26:9 38:13 39:5
45:14 47:9	waive 144:9	31:19 32:16	witnesses 48:17	39:6,14,20 40:5
53:10,13,22	waived 50:4	33:20 34:10	wondering 35:16	40:10,18 42:1
55:2,12 56:3	142:21	35:8,18 38:15	109:3	42:11,14 43:12
57:12,18,20,22	want 9:15 44:4	38:22 39:15	word 13:3 49:13	44:2,19 48:14
58:1,5 59:8	60:14 68:18	40:7,19 41:9	50:8 51:16	53:17 60:5
61:18 62:8	74:3 79:8 82:5	44:15 45:17	wording 46:10	62:13 63:16
135:17	82:16 90:15,18	47:11,17 50:5	words 13:11,13	67:16 71:22
values 16:19 17:2	94:22 95:15	50:22 51:5 52:5	50:10 104:22	89:3,6 114:22
17:7,9,15,17,19	97:12 117:7,18	53:2 54:4 62:10	work 11:7 14:5	115:2,8 120:13
18:11 20:4	121:10 123:17	86:14 87:5	112:7 131:13	143:18
36:11 39:22	123:21 134:14	116:15 134:1	worked 9:3,20	1:42 117:15
40:12 41:17	134:15,18	138:18 141:9	10:8 15:4,6	1:54 117:16
43:18,18 53:19	138:14	141:13,17	109:8	10,736,507 1:7
54:12,18 55:19	wanted 99:2	142:15,19	working 11:3	5:13 6:9
56:7 57:19 59:6	warranted 125:3	whereabouts	119:10	10:54:37 51:8
59:10,13,17	Washington 1:21	121:18	works 41:11 83:3	10:55 48:4
61:8,13 62:15	143:17 145:2	windows 80:14	109:2	100 112:17
80:9,13 135:1	146:3	wired 24:9,17,21	worn 83:19 121:3	
135:19,22	waveform 43:19	25:4,9 26:21	wouldn't 13:16	
136:18,21	55:5 58:15,19	27:4,9,13	87:9 105:13	
		wireless 123:4	112:10 129:2	

1001 4:13 6:19 7:1	21:14 26:5,9 34:22 35:21	1K 61:1,5 62:5,7	22 36:6 37:4 134:16,21	5 4:5 45:5 134:22 136:17 143:22
1009 82:20	38:13 39:5,6,14	2	136:17 139:2	50 77:3 136:7
1010 82:20	40:5,18 42:1,11	2 85:13 90:1,1	143:14	137:17
1011 4:14 77:9,11	42:14 43:12	99:13 111:17	232-0646 1:22	507 6:7,15,22
77:17 82:15,18	44:2,20 45:2	113:3,18	145:2	10:12,15 11:13
82:18 120:13	54:2 60:6 62:2	115:11 143:16	25 98:14	11:15,18,21
121:11	67:16 89:3	2:27 141:14	28 63:16	12:6,12,19
106 16:6,9,14,17	97:17 99:11	2:33 141:15	3	13:22 14:7
107 16:7,14 17:5	114:22 115:2,8	2:34 142:22	3 49:6 70:10 78:3	16:13,16,18
17:13 18:10,21	134:18 136:11	20 1:14 2:4 5:1	79:7,8,12,14,15	17:6,19 18:3,15
109 120:8,9,12,14	137:21 139:4	8:20 10:10 15:4	79:18,22 80:2,8	19:6,20 25:3,8
120:19	130 69:8 70:11,14	144:4 145:5	80:11 81:11,18	25:11,16 26:6
10th 7:13	92:7	146:10	81:21 82:4	26:10,19 28:2
11:05 48:5	132 115:20	20036 1:21 145:2	83:22 84:10	28:16,18,19
11:53 77:5	116:13,20	146:3	121:11,12,17	29:3,9,10,16,22
110 63:10 65:14	133 114:13	2006 78:3,15	30 45:11 46:1,2	30:10 31:2,8,12
69:7,20 70:5,12	13959 1:19 2:6	2011 26:11 42:16	46:11 47:22	31:16,17 32:7
70:13 71:16	143:3,13	44:22 45:4	52:18 78:3	32:11,13,20
75:11 92:6	13A 97:13,20,22	202 1:22 145:2	31 44:21	33:4,7,10,11,14
111 74:7,9,11,15	98:1,3,4,10,11	202)-232-0646	31st 26:11 42:16	33:16,17 34:8
74:17 90:1	98:16 99:15	144:15	45:3	36:15 38:14
119 4:15	137:10	202)232-0646	32 57:4	39:5,7,14 42:14
12 143:12	13B 98:5 136:6	146:4	3200 3:8	44:13,20 45:12
12.5 111:20 112:2	137:17	2024 1:14 2:4 5:1	33 57:11	46:5,14 52:14
12:49 77:6	13D 43:14 45:6	7:12,13 144:4	34 119:17	60:2,6 61:1
120 69:7 70:6	46:18,19 47:8	144:20 145:5	35 57:14 58:4,17	62:22 63:5,8,15
92:7	52:21 53:3	146:10	58:21 141:12	64:15 65:20
123 62:22 72:2,10	13E 54:17 55:11	2024-00294 1:6	37 48:15	67:7,17 68:5,10
72:22 101:12	55:17 134:20	5:12 6:14	39 119:17	70:21 71:3
124 62:19,20,21	136:16	2025 143:14,16	4	76:14 88:9,19
63:4,9 65:8	14 37:11	143:20,22	41 26:7 41:21	92:2,15,18 93:3
69:5,18 71:16	141 4:6	2026 143:18	42:7,8,12,18	93:10,20 95:1
75:5,7,21 76:14	146 123:18,19	2028 143:12	44:18	97:21 118:2,6
87:16,19 88:18	125:10,18	2029 4:15 118:12	42 20:7,9,16	120:2 134:14
91:22 92:4 93:2	14th 3:14 144:2	119:1,3	42.1B 48:16	52 98:14 138:20
93:17 94:7 95:1	152 127:10,13	2037 4:16 7:22	43 20:18 21:6	53 136:7
100:14	129:3 131:13	8:3 13:20 16:5	22:21 25:14,20	55 77:3 117:12
125 89:8,13,19	153 129:20	87:14 117:20	26:17,17 27:20	55402 3:8
126 103:2,17,22	130:11,21	2038 4:17 21:12	34:18	56 120:18 121:2
104:3	154 132:10	21:15	45 97:22 98:9	6
127 103:22 108:1	16 59:1	2039 20:13	137:11	6 4:13 44:17
110:10 111:5	1730 1:21 145:1	2040 3:14 20:14	48772 48:11	55:17 70:8,9
128 103:22	146:2	144:2	5	60 3:7 43:6,8,13
112:21	19 139:2,20	21 4:17 97:22		44:8,9,10 45:9
129 103:22	1A 62:22 63:3	98:9 136:7		45:10 46:3
13 18:8 19:12,20	64:16 67:8	137:11		

47:21 52:9,10 112:16 612-337-2510 3:9 62 54:16 55:1,21 63 88:13 65 69:12 66 56:10,18,20,21 57:3 89:18,22 92:10 93:11 95:10 97:9 99:14 67 103:2 68 111:10 7 7 4:16 70 112:17 71 115:19 72 115:18 77 4:14 48:11 7th 7:12,15 8 80 111:20 112:3 112:12 124:17 81 123:22,22 126:21 812 1:21 145:1 146:2 84 60:15,21 86 127:13 89 117:7,19 9 9 143:20 9:59 1:15 2:5 5:1 90 58:4 118:11 92614 3:15 144:2 94 118:11 949-760-0404 3:15				
---	--	--	--	--