

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 -----
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4 -----

5 INDUCTEV, INC.,
6 Petitioner,

7 v.

8 WITRICITY CORPORATION
9 Patent Owner.
10 -----

11 Case IPR2023-01182
12 U.S. Patent No. 8,461,719
13

14
15 Zoom Deposition of MARK ALLEN, Ph.D.
16 (Taken by the Patent Owner)
17 Philadelphia, Pennsylvania
18 Tuesday, May 7, 2024
19

20
21
22
23 Reported by: Marisa Munoz-Vourakis -
24 RMR, CRR and Notary Public
25

1 APPEARANCE OF COUNSEL BY ZOOM:

2 For the Petitioner:

3 LANCE A. LAWSON, ESQ.

4 ANDREW T. SPENCE, ESQ.

5 Burr & Forman LLP

6 One South at the Plaza, Suite 2610

7 101 S. Tryon Street

8 Charlotte, NC 28280

9 704-347-6475

10 llawson@burr.com

11 aspence@burr.com

12

13 Also Present by Zoom: MARK HORENSTEIN, Expert

14

15 For the Patent Owner:

16 BLAKE R. DAVIS, ESQ.

17 Latham & Watkins, LLP

18 505 Montgomery Street

19 San Francisco, CA 94111

20 415-391-0600

21 blake.davis@lw.com

22

23

24

25

o00

Zoom Deposition of MARK ALLEN, Ph.D. taken
by the Patent Owner, at Philadelphia, Pennsylvania, on the
7th day of May, 2024 at 3:02 p.m., before Marisa
Munoz-Vourakis, Registered Merit Reporter, Certified
Realtime Reporter and Notary Public.

I N D E X

Examination of:	Page
MARK ALLEN, Ph.D.	
EXAMINATION BY MR. LAWSON	5

DEPOSITION EXHIBITS

EXHIBIT NUMBER	DESCRIPTION	PAGE
Exhibit 1	Petition for Inter Partes Review of Patent '719	36
Exhibit 1001	'719 Patent	21
Exhibit 1007	Cook Patent Application	28
Exhibit 1009	Pohjonen Reference	40

P R O C E E D I N G S

Whereupon, MARK ALLEN, having
been first duly sworn testifying
was examined and testified as follows:

EXAMINATION BY COUNSEL FOR PATENT OWNER
BY MR. LAWSON:

Q. Good afternoon, Dr. Allen.

A. Hello.

Q. Glad you're able to make it here this
afternoon for this separate deposition proceeding.

We understand you have a hard stop at
7 p.m. eastern, and we will make sure that we meet that
deadline for you.

My name is Lance Lawson. I'm a partner at
the law firm of Burr Forman, and I represent the Patent
Owner in this case Witricity Corporation. And this is
in the proceeding IPR2023-01182, and it's regarding
the, what we'll refer to as the '719 Patent, which is
US Patent No. 8,461,719, okay.

And do you understand you're here to
testify about your declaration in that proceeding?

A. Yes.

Q. Okay.

MR. DAVIS: Mr. Lawson, if you don't
mind me interrupting, who is Mr. Horenstein

1 and Mr. Spence?

2 MR. LAWSON: I should have introduced
3 them. Andy Spence is a partner, a colleague
4 at my law firm, Burr Forman. He's also on
5 the -- is counsel of record for the
6 proceeding. And Ryan Corbett, who took your
7 deposition earlier this morning, will likely
8 join at some point this afternoon. He's
9 also counsel of record in this proceeding,
10 and Professor Mark Horenstein is a technical
11 expert on our side and is just monitoring
12 the proceeding today.

13 MR. DAVIS: Thank you.

14 MR. LAWSON: Okay.

15 Q. Okay. Like we did for your deposition this
16 morning, Dr. Allen, we have to go through a couple of
17 the formals regarding the procedures for the
18 deposition.

19 I understand you've been deposed, I think,
20 three or four times now, maybe five or six after your
21 deposition this morning, is that correct?

22 A. Yes.

23 Q. Okay. And were those depositions all in
24 the Witricity versus Inductev proceedings?

25 A. No. There have been some prior to that.

1 Q. Okay. All right. And about approximately
2 what time frame were those other proceedings that
3 weren't involved in the Witricity and Inductev, the
4 predecessor to Inductev?

5 A. I'm sorry, did you say were or were not
6 involved?

7 Q. Were not, the other proceedings that were
8 not related to Witricity versus Inductev proceedings?

9 A. I do not remember exactly, but I'm going to
10 say in the 2010 time frame, and then sort of in the
11 late '90s, early 2000s time frame.

12 Q. Okay. So you had one deposition in the
13 early 2000s time frame, then a deposition around 2010,
14 and then it had been no depositions and things until
15 the Witricity versus Inductev proceedings, is that
16 correct?

17 A. I believe that's correct, yes.

18 Q. Okay. As we go through the deposition,
19 I'll be asking you a series of questions. And you have
20 to -- it's your duty to answer those questions to the
21 best of your ability. Do you understand that?

22 A. I do.

23 Q. Okay. And while I ask the questions, and
24 sometimes for whatever reason I may be talking too fast
25 or you may not hear me correctly, I will assume that

1 you understand the question, unless you inform me that
2 you don't, is that fair?

3 A. Yes.

4 Q. Okay. Also, when you give your answers,
5 the court reporter cannot record -- or it's very
6 difficult to record nonverbal answers, so shaking of
7 the heads and things. So all your answers should be
8 verbal. Do you understand that?

9 A. I do.

10 Q. Okay. Are there any medications that
11 you're taking that would prevent you from being able to
12 testify truthfully today?

13 A. No.

14 Q. Are there any other reasons that might
15 prevent you from being able to testify truthfully
16 today?

17 A. No.

18 Q. Okay. Well, I don't think your deposition
19 here will be very long. We'll probably take at least
20 one break, and it will probably go around 45 to 50
21 minutes, and then we'll take a break. But if there's
22 any reason that you need to take a break for -- just
23 let me know and request that we take a break. If we're
24 in the middle of a question, things like that, we may
25 want to finish that line of questioning. But we'll try

1 to accommodate your request for a break. Is that fair?

2 A. Yes. Thank you.

3 Q. Okay. What did you do to prepare for your
4 deposition today?

5 MR. DAVIS: I'll just make a caution
6 not to reveal the substance of any
7 communications with counsel.

8 A. So I read through my declaration and some
9 of the associated exhibits. I did speak with counsel
10 to discuss them, and, yeah, that's it.

11 Q. Okay. Did you refer to any materials that
12 were not part of the -- of Inductev's petition or
13 exhibit list in the petition in preparation for your
14 deposition?

15 A. No, I did not.

16 Q. Okay. And do you have in front of you --
17 what materials do you have in front of you from the
18 petition and the exhibits that were part of the
19 petition, including your declaration?

20 A. So I have the declaration. I have the
21 associated exhibits of the declaration. I don't
22 believe I have things like file wrappers and what not
23 in front of me.

24 Q. Okay. So when you say you have exhibits --
25 go ahead, I'm sorry.

1 A. I do have them in soft copy.

2 Q. And you have them with you?

3 A. In soft copy I do.

4 Q. Okay. And so --

5 MR. DAVIS: Lance, if you want, I can
6 read into the record the specific exhibit
7 numbers that he's got?

8 MR. LAWSON: Sure. Why don't you go
9 ahead and do that, so we have that as a
10 matter of record.

11 MR. DAVIS: So he has Exhibit 1001,
12 1003, 1004, 1005 -- no, I'm looking at the
13 wrong one, sorry, scratch that. That was
14 from the earlier depo.

15 Okay. Let me start that list over.

16 MR. LAWSON: It will probably be
17 relatively similar.

18 MR. DAVIS: It probably is, but I will
19 start over just to make sure I don't miss
20 something.

21 So he has 1001, 1003, 1004, 1005, 6,
22 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,
23 19, 20, 21, 23, 27, 28, 29 and 1030.

24 MR. LAWSON: And just to be clear, he
25 has those with him right now, correct?

1 MR. DAVIS: Yeah, he has plain paper
2 copies. I believe he also has electronic
3 copies as well.

4 MR. LAWSON: Very good. Thank you for
5 that.

6 MR. DAVIS: Yep.

7 BY MR. LAWSON:

8 Q. All right. I looked at your CV. I
9 understand you're now the Chair of the Electrical
10 Engineering Department at Penn, is that correct?

11 A. That's right.

12 Q. Okay. And could you tell us what your
13 duties and responsibilities are as a professor in the
14 Electrical Engineering Department at Penn?

15 A. There's really three major things that
16 professors do, including myself: One is perform
17 research, typically with graduate students and post
18 docs; the second is to teach courses in various areas
19 of electrical engineering; and then the third is, you
20 know service, either to the community or administrative
21 service, like some of the chairman's duties that I
22 currently hold.

23 Q. Okay. What is your specialty, if you
24 would? What would you say is your specialty that you
25 specialize in in your teaching capacity?

1 A. So in teaching for the past few years, I've
2 typically taught courses in introductory for graduate
3 students, so first-year graduate students,
4 nanotechnology, and courses in device physics, so how
5 semiconductor devices operate and work.

6 Q. Okay. I think you testified to this
7 earlier this morning, but just to be clear, you haven't
8 taught, as part of your duties as a professor, you
9 haven't taught specific classes specifically on power
10 transfer, is that correct?

11 A. I've taught courses in circuit theory, and
12 we've done things like magnetic coupling and
13 transformers and what not, but that was some time ago,
14 and it was not a specialty course in wireless power
15 transfer.

16 Q. And you haven't taught any courses in
17 wireless power transfer related to mobile phones or
18 electrical vehicles, correct?

19 A. Not taught courses, no.

20 Q. Okay. All right. And that applies both in
21 your teaching capacity at the University of
22 Pennsylvania and also at your previous teaching
23 position at Georgia Tech, is that correct?

24 A. As I mentioned at Georgia Tech, I taught
25 the circuits courses that had magnetic coupling and

1 power transfer in them, but they were not specialty
2 courses in wireless power transfer.

3 Q. Okay. When you prepared your declaration
4 in this case, which is, for the record, it is
5 Exhibit 1003, what materials did you rely on when you
6 prepared your declaration?

7 A. So I listed the materials that I used to
8 help me form my opinions. They are all the various
9 references associated with the declaration.

10 I also looked at, I guess that's already
11 referenced in there, some of the provisional patents
12 that were filed, and I relied on my sort of general
13 knowledge in this area as well.

14 Q. Okay. You didn't refer to -- when you
15 prepared -- strike it.

16 When you prepared your declaration, you
17 didn't refer to any other references, other than those
18 that are listed as exhibits in Inductev's petition, is
19 that correct?

20 A. Sitting here today, I can't think of
21 anything that is not in the petition.

22 Q. Okay. And when you prepared your
23 declaration, who prepared the first draft of your
24 declaration?

25 A. So we first had -- I first had a series of

1 discussions with counsel, where we talked about --

2 MR. DAVIS: No. So I'm going to
3 caution Dr. Allen not to get into the
4 substance of any communications with
5 counsel.

6 A. Where we discussed the matter.

7 Q. Just to be clear, the question is not
8 seeking substantive conversations that you had with
9 counsel about the material. I'm just asking what you
10 did, who prepared the first -- who prepared the first
11 draft and how was it prepared?

12 A. Then counsel prepared the first draft and
13 then we had several back and forth editing sessions.

14 Q. Okay. In your declaration, it contains all
15 of your opinions that you have regarding this
16 proceeding and in particular Inductev's petition,
17 correct?

18 A. You mean by this proceeding, the one we're
19 talking about today? Yes, of course there's the other
20 proceeding.

21 Q. Correct. So the declaration that you
22 submitted in this case, which is IPR2023-01182
23 involving the '719 Patent, all of your opinions are
24 about that proceeding that support the petition are in
25 your declaration, is that correct?

1 A. In addition to my own knowledge, yes.

2 Q. Okay. All right. But the information of
3 your own knowledge and things that are relevant to the
4 petition and are relevant -- are in your declaration,
5 correct?

6 A. I'm sorry, I don't understand. Could you
7 say that again?

8 Q. Well, you said you referred to your
9 declaration has everything in support plus your
10 knowledge. But my point is anything that was relevant
11 to the petition you included in your declaration,
12 correct?

13 A. Yes, that's correct.

14 Q. Okay. So all of the opinions and things
15 that you have in support of Inductev's position in this
16 case are contained in your declaration, right?

17 A. Yes.

18 MR. DAVIS: Objection to form.

19 BY MR. LAWSON:

20 Q. And if we turn to the petition. Well, if
21 you turn to the petition. Inductev has four grounds
22 that they assert in their petition. Do you have that
23 understanding?

24 A. Yes.

25 Q. Okay. And in ground one and three, they

1 make the claim that Claim 16 of the '719 Patent is
2 obvious, correct?

3 A. Yes.

4 Q. Okay. And grounds 2 and 4 relate to
5 Inductev's position that Claim 17 is obvious, correct?

6 A. Yes.

7 Q. Okay. And your declaration has some
8 information, and it has your opinions that support
9 those four grounds, right?

10 A. Yes, that is correct.

11 Q. Okay. And the petition doesn't challenge
12 any other claims of the '719 Patent other than Claims
13 16 and 17, correct?

14 A. I was not asked to look at those, so my
15 declaration doesn't have anything, other than the 16
16 and 17 discussions.

17 Q. Right. Okay. So you don't have any
18 opinion, your declaration doesn't include any opinions
19 at all about Claims 1 to 15 of the '719 Patent,
20 correct?

21 A. Yeah, I've not looked at those in this
22 context.

23 Q. Now, in the petition, you assert that there
24 are particular claim constructions for particular -- so
25 just two particular claim terms in the '719 Patent, is

1 that correct?

2 MR. DAVIS: I just want to -- Lance, I
3 just want to make sure that the record is
4 clear and that we're not messing up
5 nomenclature.

6 So the petition is what Inductev
7 filed, and the declaration is what is
8 Dr. Allen's. And so I just want to make
9 sure that there's not a confusion between
10 the petition and the declaration.

11 MR. LAWSON: Sure.

12 Q. And Dr. Allen, are you confused when we
13 talk about the petition and we talk about your
14 declaration?

15 A. I was assuming you meant the declaration.

16 Q. Okay. All right. Well, if you go turn to
17 the petition on page 8, we'll start there.

18 MR. DAVIS: That's what I was trying
19 to get at. So Dr. Allen doesn't have a copy
20 of the petition. He has his declaration.

21 MR. LAWSON: He doesn't have a copy of
22 the petition? Yeah, but he has access to --
23 is there a way you can send him an
24 electronic copy, Blake, so we can ask him
25 questions about the petition? Because he

1 references -- the petition references his,
2 obviously his declaration and things.

3 MR. DAVIS: So I think we can send it.
4 Also if he can load it into the chat, I
5 guess, that would be fine.

6 (Pause.)

7 MR. DAVIS: I will also send this via
8 email to Dr. Allen.

9 MR. LAWSON: Sure.

10 (Pause.)

11 MR. LAWSON: We will be referring to
12 both from time to time during the
13 deposition.

14 (Pause.)

15 MR. DAVIS: Dr. Allen, you should
16 hopefully receive it soon.

17 (Pause.)

18 THE WITNESS: It hasn't come yet but
19 hopefully soon.

20 MR. DAVIS: It's six megabytes. It
21 might just take a little bit to make it
22 through.

23 (Pause.)

24 THE WITNESS: I think it is here.
25 Yes, I think I have it now.

1 BY MR. LAWSON:

2 Q. Are you able to open it?

3 A. Let me open it.

4 Yes, I have it. Sorry about the wait.

5 Q. Okay. And we'll start there, since you
6 have it open.

7 If you can go to page 8, it's the heading
8 claim construction. Just let me know when you get
9 there.

10 A. Not the 8th page, but page 8?

11 Q. Page 8 of the petition.

12 A. Section E.

13 Q. Yeah, where it has claim construction.

14 Just for the record, you're familiar with
15 the petition? You've read that, correct?

16 A. I have seen a draft of the petition.

17 Q. Okay. Did you read the petition or review
18 the petition in preparing for your deposition today?

19 A. I don't remember if it was the final draft,
20 but -- oh, you mean today? No, I did not read it
21 today.

22 Q. No, in preparation for your deposition
23 today?

24 A. No, I did not.

25 Q. Okay. So since the petition was filed, you

1 haven't read the petition?

2 A. That's correct.

3 Q. Okay. All right. Do you have an
4 understanding that on page 8 and 9, the only claim
5 constructions that are proposed in the petition, formal
6 claim constructions are the two terms. There are
7 characteristic size and characteristic thickness,
8 correct?

9 A. That's my understanding is that those are
10 specialized terms that the '719 Patent defines.

11 Q. If you turn in your declaration, that is
12 also your opinions, those two were specialized, were
13 defined in the '719 Patent, correct? Those are the
14 only two terms that were defined, that you defined in
15 your declaration, correct?

16 A. So I'm just going to check, but I think
17 that it's correct.

18 So looking at my declaration, it states
19 that the patent defines these two terms, and counsel
20 told me that if the patent defines terms, that should
21 govern.

22 Q. Okay. And you haven't defined any other
23 terms, specifically defined any of the other terms in
24 Claim 16 and 17, is that correct?

25 A. Me?

1 Q. Correct. You haven't offered any formal
2 opinion about the particular claim construction of any
3 of the elements of the other claim terms in Claim 16
4 and 17, correct?

5 A. My understanding is that the other terms
6 are plain meaning.

7 Q. Okay. But you haven't offered any opinion,
8 as a person skilled in the art, what that plain meaning
9 means, have you?

10 A. Written in this document? I don't -- have
11 not entered any definitions that are different than
12 plain meaning, no.

13 Q. Okay. And if you go to -- let's go to the
14 '719 Patent, which is Exhibit 1001, but we'll just
15 refer to the Exhibits as 1, 2, 3, because they go from
16 1001 to 1030, so we'll just refer to them as by the
17 last number.

18 (The document referred to was marked
19 Deposition Exhibit Number 1001 for
20 identification.)

21 Q. So Exhibit 1 is '719 Patent. Just let me
22 know when you have that in front of you.

23 A. I do.

24 Q. Okay. Could you go to the end with Claim
25 16 and 17?

1 A. Yes, I have it.

2 Q. Okay. And the last phrase of Claim 16, it
3 states: Wherein, at least one of the resonators is
4 enclosed in a low-loss tangent material.

5 Do you see that?

6 A. I do.

7 Q. In your declaration, you didn't offer a
8 formal opinion of what enclosed means, did you?

9 A. What enclosed means?

10 Q. Right. You didn't offer a definition for
11 enclosed?

12 A. Well, I cited other art that talks about
13 things being enclosed, right, resonators being
14 enclosed.

15 Q. But you didn't define, you didn't define
16 the term enclosed, correct?

17 A. But the other art did.

18 I'm sorry. I don't understand your
19 question.

20 Q. Well, you haven't -- you state in your
21 declaration on page 32 to 33 that there's two formal
22 definitions for those specific claim terms, but nowhere
23 else in your declaration do you offer definitions for
24 particular claim terms in other claim terms in Claims
25 16 and 17?

1 A. Other than their plain meaning?

2 Q. Correct.

3 A. I do not offer definitions, other than
4 their plain meaning. But I do refer to art that uses
5 those terms, presumably that's part of the plain
6 meaning.

7 Q. Right. But you didn't -- you don't have
8 any in your declaration? There's nothing that says an
9 enclosed means according to art it means this?

10 MR. DAVIS: Objection to form.

11 A. I'm sorry, but I just don't understand your
12 question. Are you asking if I wrote a dictionary?
13 Really, I'm not trying to be difficult. I just don't
14 understand.

15 Q. It's pretty straightforward, Dr. Allen.
16 The question is, for example, for enclosed,
17 you did not offer a particular definition for what
18 enclosed means?

19 MR. DAVIS: Objection, form.

20 A. Yeah, so in the context of many of the
21 citations, right, that we use, we use those
22 definitions.

23 So these are the definitions that an
24 ordinary person skill of the art would use. I mean, I
25 did not offer a definition of the word inductor, for

1 example. So this is why I am confused. I don't
2 understand your question.

3 Q. Just like you didn't offer a definition for
4 inductor, you also didn't offer a definition for
5 enclosed, correct?

6 A. But I -- I'm sorry, I just can't answer
7 your question any better than I'm trying to answer it.

8 I have cited art that uses these terms,
9 right. So, so I am relying on that art, the plain
10 meaning of the words in that art to formulate my
11 opinion. I'm sorry, I'm missing your point, but maybe
12 that's my problem.

13 Q. Well, there's a difference between what you
14 did on page 32, where you offered specific opinion
15 about what specific definition is for those claim
16 terms, the characteristics -- the size and
17 characteristic thickness, okay, but you didn't do that
18 for any of the other elements in Claims 16 and Claim
19 17, correct?

20 A. I did not offer those definitions in
21 paragraph 32. I took them from the patent. The patent
22 defined those terms, and I noted that in my
23 declaration.

24 Q. Right. And that's your understanding of
25 what those claim terms mean to a person skilled in the

1 art, correct?

2 A. Yes. I was told by counsel that if the
3 patent defines those terms, I should use them the way
4 the patent defines them.

5 Q. And in your opinion, the patent defines
6 those terms the way you have it stated in your
7 declaration?

8 A. I'm relying on what counsel told me.

9 Q. Okay. And if you go to Claim 17, the last
10 element there, which says, it reads: Wherein, at least
11 one of the resonators includes a coil of a plurality of
12 terms, terms of a conducting material connected to a
13 network of capacitors. Do you see that?

14 A. Yes, I do.

15 Q. Okay. And you haven't offered an opinion
16 about what connected to means, have you, in your
17 declaration?

18 A. Other than the citations I've made to the
19 art, I'm using what a person of ordinary skill would
20 mean connected to means.

21 Q. Okay. And you didn't define that,
22 specifically define that in your declaration, correct?

23 A. I did not offer a change to the plain
24 meaning of connected to, if that's what you're asking.

25 Q. Okay. And you didn't offer, you didn't

1 offer a specific definition of a network of capacitors
2 either, correct?

3 A. I did not offer a change to what the plain
4 meaning of a network of capacitors means.

5 Q. Okay.

6 A. I'm relying only on the prior art for the
7 plain meaning of those terms.

8 Q. Okay. Let's go to your declaration,
9 paragraph 149.

10 A. Yes, I have it. I have it.

11 Q. Okay. I'm getting there too.

12 A. Oh, I'm sorry.

13 Q. In there, in that first sentence, you say
14 that Cook 554 discloses that its second resonator could
15 be integrated into a mobile handheld device, correct?

16 A. So what it says is that Cook 554 second
17 resonator could be enclosed inside a material with a
18 low loss tangent by someone who's of ordinary skill.

19 Q. But what you said Cook 554 discloses, which
20 is the second part of your sentence, Cook 554 discloses
21 that the second resonator is integrated into a mobile
22 handheld device, right?

23 A. I'm sorry, could we -- I may be looking at
24 the wrong paragraph. Could you repeat again which
25 paragraph number?

1 Q. It's 149. I think that's actually the
2 second sentence.

3 A. Second sentence. That happens to be on the
4 next page, I'm sorry.

5 Q. Yes. Paragraph 149, second sentence, you
6 state that Cook 554 discloses that the second resonator
7 can be integrated into a mobile handheld device, right?

8 A. That is stated there, yes.

9 Q. And you state that a person of skill in the
10 art would have understood that integrated means
11 enclosed, right?

12 A. In this context, yes.

13 Q. Okay. And then you stated the person
14 skilled in the art would have understood that the outer
15 cover would be a low-loss tangent material, is that
16 correct?

17 A. That that would be in this context, yes.

18 Q. Okay. Okay. Let's go then to paragraph
19 218 of your declaration.

20 A. Yes, I have it.

21 Q. Are you there? Okay.

22 And now in paragraph 218, you're talking
23 about the Cook 523 reference, which is, for the record,
24 that's Exhibit 1007, correct?

25 A. That's correct.

1 (The document referred to was marked
2 Deposition Exhibit Number 1007 for
3 identification.)

4 Q. Okay. And in that first sentence of
5 paragraph 218, you state that it's your opinion that
6 Cook 523 discloses the second -- that the secondary
7 resonator that receives the wireless power is intended
8 to be integrated into a mobile handheld device,
9 correct?

10 (Pause.)

11 Q. I'm sorry I didn't hear your answer. Are
12 you still considering the question?

13 A. Oh, I'm sorry, I thought I answered.

14 Q. Oh, I'm sorry, I didn't hear it.
15 What was your answer?

16 A. I think your question was does paragraph
17 218 state that the secondary resonator that receives
18 wireless power is intended to be integrated into a
19 mobile handheld device, is that right? I said yes.

20 Q. That's what your opinion is, that Cook 523
21 discloses that, correct?

22 A. Yes.

23 Q. So Cook, so both Cook 554 and Cook 523,
24 based upon your opinion, both disclose a resonator
25 being integrated into a mobile handheld device,

1 correct?

2 A. I think that's one application, yes. They
3 both disclose that.

4 Q. Okay. And Cook 554 and Cook 523 they both
5 have the same named first inventor, correct?

6 A. I believe that's correct.

7 Q. Okay. So is it your position then that the
8 person skilled in the art would have understood that in
9 Cook 523 integrated means enclosed?

10 A. I think there are -- there are examples in
11 the '523 Patent where the resonant receiver is enclosed
12 in a package, yes.

13 Q. Okay. So it's your understanding then that
14 integrated into, as using 523, means enclosed in the
15 same way that Cook 554 used integrated into?

16 MR. DAVIS: Objection, form.

17 A. I think there is an example of that.

18 Q. Okay. So that's your opinion?

19 A. There is an example of that. I can point
20 to an example of that where that is the case.

21 Q. Okay. Let's go to Cook 523, if you would,
22 and let's look at figure, start at Figure 12a, if you
23 would. We'll look at Figures 12a, Cook 523.

24 A. Yes, I have it.

25 MR. LAWSON: Which, again, just for

1 the record for the court reporter, that's
2 Exhibit 1007.

3 A. I have it. Okay.

4 Q. Hold on a second. I'm having a little
5 issue here with -- there it is, my Adobe, having an
6 issue. There we go.

7 So if you look at Figure 12a, is the
8 resonant antenna, as shown in Figure 12a, is that
9 enclosed in the external -- in the mobile device's
10 external housing, in your opinion?

11 A. So if I look at Figure 12a, I look at the
12 text surrounding Figure 12a, it states that the
13 antenna's surrounding the perimeter of the case and
14 touching the perimeter. I suppose it could be
15 enclosed, but the drawing suggests that it is wrapped
16 around the outside of the case.

17 Q. Okay. And if you look at Figure 12b, is
18 the resonant antenna in 12b enclosed in the mobile
19 device's external housing?

20 A. I don't believe so, because if I look at
21 the text associated with Figure 12b, it says that the
22 winding is separated by a gap from the metallic case.

23 Q. Okay. And if we go to Figure 12c, is the
24 resonant antenna in Figure 12c enclosed in the mobile
25 device's external housing, in your opinion?

1 A. I think with 12c, there is a possibility of
2 sliding the coil inside the case and back out of the
3 case. As I read the text, it talks about a claim shell
4 that can slide back and forth.

5 So I suppose it could -- I don't know is
6 the short answer, but the longer answer is I suppose it
7 could exist in either form.

8 Q. Okay. Is it your opinion that if it was
9 enclosed inside that metallic case enclosed, like you
10 said, it was inside, that it would be operational?

11 A. It could be more difficult to operate
12 inside the metallic case, certainly.

13 Q. Okay. And when the -- in Figure 12c, when
14 it's open, as you said, as is shown there, it's
15 currently shown -- it's a clam shell, would you
16 consider that when it's in the deployed, as is shown in
17 Figure 12c, is that enclosed in the mobile device's
18 external housing?

19 A. I don't think a person of ordinary skill
20 would say that that is enclosed.

21 Q. Let's go to Figure 13a, if you would.

22 A. Yes, I have it.

23 Q. In your opinion, is the resonant antenna in
24 Figure 13a enclosed in the mobile device's external
25 housing?

1 A. It's not enclosed within the metallic case,
2 right. It's separated from the metallic case by a --
3 by a Ferrite sheet. But I don't see anything that may
4 or may not be on the other side of the coil, but it is
5 not within what is labeled metallic case.

6 Q. Okay. And if you look at Figure 13b.

7 A. I see it, yes.

8 Q. In your opinion, is the resonant antenna in
9 Figure 13b enclosed in the mobile device's external
10 housing?

11 A. I think there the resonant antenna is
12 enclosed, and there is -- there are geometric features
13 to allow the device to operate, even though it is
14 enclosed.

15 Q. Okay. Go back up to Figure 12a.

16 In Figure 12a, is the outer cover of the
17 mobile handheld device made of a low-loss tangent
18 material, in your opinion?

19 MR. DAVIS: Objection to form.

20 A. I do not see an outer cover. Could you
21 direct me more specifically?

22 Q. If you look at Figure 12a, there happens to
23 be a non-metallic case. Do you see that?

24 A. I see non-metallic case, yes.

25 Q. Okay. In Figure 12a, is the case for the

1 mobile handheld device made of a low-loss tangent
2 material, in your opinion?

3 MR. DAVIS: Objection to form.

4 A. Is the case made of low-loss tangent
5 material? It is non-metallic, according to the
6 specification, or according to the drawing, excuse me.
7 I don't know that there is a specification or not about
8 the loss tangent of that non-metallic case sitting here
9 now.

10 Q. Okay. In your opinion, if you look at
11 Figure 12b, in your opinion, is the case shown in
12 Figure 12b for a mobile handheld device made of a
13 low-loss tangent material?

14 MR. DAVIS: Objection, form.

15 A. What's labeled metallic case if it's made
16 of metal is not considered a low-loss tangent material
17 but the gap presumably would be.

18 Q. So, okay. You're talking about the gap
19 shown there at 1221?

20 A. 1221, yes.

21 Q. But the rest of the case is not made of a
22 low-loss tangent material, correct?

23 A. If it is made of metal, it's very unlikely
24 to be a low-loss tangent material.

25 Q. Okay. And if you look at 12c, Figure 12c,

1 in your opinion, is the clamshell case for that mobile
2 handheld device made of a low-loss tangent material?

3 A. So in Figure 12c, the clamshell case is
4 referred to as metallic. Again, most metals are not
5 low-loss tangent materials.

6 Q. And if you look at Figure 13A.

7 A. Yes, I see it.

8 Q. Is the case for the mobile handheld device
9 shown in Figure 13A made of a low-loss tangent
10 material, in your opinion?

11 A. So the case is labeled as metallic, and
12 most metals are not low-loss tangent materials.

13 Q. And if I direct your attention to Figure
14 13b, same question. In your opinion, is the case for
15 the mobile handheld device shown in Figure 13b made of
16 a low-loss tangent material?

17 A. So 13b is a bit more interesting, because
18 there are regions of the enclosure that are metallic
19 and regions that are not. But certainly the regions
20 that are metallic are, for the same reason, unlikely to
21 be made of a low-loss tangent material.

22 Q. Okay. And there's that Figure 13b doesn't
23 show any other material, other than the metallic case
24 and the Ferrite Rod Antenna, right?

25 A. I do not see any --

1 MR. DAVIS: Objection to form.

2 A. I do not see any labels pointing to labeled
3 materials in Figure 13e.

4 Q. Okay.

5 MR. DAVIS: Dr. Allen, if you can give
6 me a second before you answer in case I do
7 have objections, it will let me get it in.

8 THE WITNESS: I'm sorry.

9 MR. LAWSON: It's okay. Okay. We've
10 been going about a little over 50 minutes.
11 I think this is probably a good time to take
12 a ten-minute break, if that works for you,
13 Dr. Allen?

14 THE WITNESS: Perfect. That works
15 fine.

16 MR. LAWSON: We'll go back. It's
17 almost 3:55. Why don't we plan on
18 reconvening at 4:05.

19 (Off the record at 3:55 p.m.)

20 (On the record at 4:06 p.m.)

21 MR. LAWSON: Okay. Just a matter for
22 the record, I think why don't we label the
23 petition as exhibit number -- just number 1
24 instead of 1001 for the patents and
25 everything, just give it a different number.

1 Does that make sense, Blake, or do you want
2 to go with -- do you have a better
3 suggestion on that?

4 MR. DAVIS: I mean you can also just
5 refer to it as the petition.

6 MR. LAWSON: Why don't we refer to it
7 as the petition and everybody will
8 understand.

9 For the record, it will be, the
10 petition will be what is entitled Petition
11 for Inter Partes review of US Patent No.
12 8,461,719. Let's label it number 1.

13 (The document referred to was marked
14 Deposition Exhibit Number 1 for
15 identification.)

16 MR. LAWSON: All the other exhibits
17 start with 1000, so just label it number 1.

18 Q. Dr. Allen, since we're talking about the
19 petition, you have that in front of you in electronic
20 form. Can you go to page 8, please, back to the claim
21 construction section.

22 A. Yes, I have it.

23 Q. Okay. And in there, there is a footnote
24 number 3. If you go over that, it says: Petitioner
25 reserves the right to argue alternative constructions

1 in other proceedings, and where such a defense is
2 available that the claims are indefinite.

3 Do you see that?

4 A. I do.

5 Q. You don't have any opinion -- your opinions
6 do not include any contention that any of the claim
7 terms in Claim 16 or 17 are indefinite, do you?

8 MR. DAVIS: Objection. Dr. Allen, if
9 you can just give me -- take two seconds
10 after the question, and that will give me
11 time and save the court reporter a little
12 bit of her sanity, I think.

13 The objection was relevance.

14 A. I've not been asked to render an opinion on
15 that.

16 Q. Okay. But when -- it's your opinion, is it
17 not, that Claim 16 is obvious on two different grounds;
18 grounds one and grounds three listed in the petition?

19 A. Yes, I'm looking more at my report, but
20 yes, that is my contention or my --

21 Q. Okay. When you came up with your opinion
22 that each of the -- that Claim 16 was obvious, it was
23 your opinion that the prior art that you cited
24 disclosed each of the elements listed in Claim 16,
25 correct?

1 A. In combination in some cases, that is
2 correct.

3 Q. Okay. And when you looked at each of those
4 elements in Claim 16, you didn't have any difficulty
5 understanding what those claim terms meant, correct?

6 MR. DAVIS: Objection, form,
7 relevance.

8 A. I believe some of the -- some of the terms
9 that were used were not well defined or justified in
10 the patent, is what I dimly recall. So I did my best
11 to use plain meaning to understand them.

12 Q. Okay. And were you able to, using as a
13 person skilled in the art, when you used the plain
14 meaning, were you able to understand them when you said
15 that the prior art disclosed each of those claim
16 elements?

17 A. So based on my extrapolation, if that's the
18 right word, of what they might mean, yes, that's how I
19 based my opinion.

20 Q. Okay. And the same thing for Claim 17,
21 correct?

22 A. Yeah, based on sort of my thinking, if
23 something was not well specified in the specification
24 of the patent, I did my best to fill it in, so to
25 speak, using what a person of ordinary skill would do.

1 Q. And your opinion was that a person of
2 ordinary skill would understand it as you explain in
3 your declaration, correct?

4 A. Based on the meanings that I assigned to
5 the claim terms, yes.

6 Q. Right. And you assigned a meaning to the
7 claim terms based upon how they were used in the '719
8 patent, correct?

9 A. Noting that there were some terms not
10 defined as well as I would like, I did my best, yes.

11 Q. Okay. Let's go to your declaration at
12 paragraph 74, please, paragraph 74 of Dr. Allen's
13 declaration.

14 A. Yes, I have it. I have it.

15 Q. Okay. And in there, you state that the
16 Cook 554 discloses wireless energy transfer that is
17 based on couple magnetic resonance using magnetic field
18 antennas, correct?

19 A. That is what I quote from the Cook 554
20 patent, that is correct.

21 Q. Okay. Well, you quote from it, but you say
22 that is what the Cook 554 is disclosing, correct?

23 A. That is correct.

24 Q. Also, and then let's go to paragraph 99 of
25 your declaration.

1 A. Yes, I have it.

2 Q. Okay. There you said Cook 523 is
3 describing energy transfer wirelessly from the
4 transmitting resonant antenna to a receiving antenna,
5 right?

6 A. Receiving resonant antenna, yes.

7 Q. Yeah, receiving resonant antenna.

8 And where is a resonator comprising an
9 inductive coil and a capacitor, as shown in Figure 1,
10 right?

11 A. That is correct.

12 Q. Okay. All right. If we go to paragraph 93
13 of your declaration.

14 A. Yes, I have it.

15 Q. Okay. There you're talking about the
16 Pohjonen reference, correct?

17 A. Correct.

18 MR. LAWSON: And madame court
19 reporter, the Pohjonen reference is
20 Exhibit 1009.

21 (The document referred to was marked
22 Deposition Exhibit Number 1009 for
23 identification.)

24 MR. LAWSON: And I will send that to
25 you at the conclusion of the deposition so

1 that you have a copy of that.

2 Q. Okay. Dr. Allen, in paragraph 93, you
3 state Pohjonen concerns the selection of cover material
4 and structures for a portable radio device that
5 includes an internal antenna to "enhance the antenna's
6 efficiency," right?

7 A. Correct.

8 Q. Okay. And regarding Cook 554, is the Cook
9 554 teaching and disclosing a magnetic field antenna?

10 MR. DAVIS: Objection form,
11 foundation.

12 A. So antenna in this art is used to describe
13 multiple functionalities. So in the wireless energy
14 transfer that Cook typically discusses, he's using an
15 antenna for magnetically resonant wireless power
16 transfer.

17 Q. Right. And as you stated earlier, that was
18 using -- and he's using it as a magnetic field antenna,
19 correct?

20 A. Well, I think I just want to be sure I
21 understand what you mean by the term magnetic field
22 antenna.

23 Q. Okay. I will ask you. Do you have an
24 understanding of what a magnetic field antenna means?

25 A. So a resonant antenna that transfers energy

1 through magnetic field coupling is what Cook is
2 describing.

3 Q. Well, let's go back to your paragraph 74.
4 You state in there that Cook discloses "wireless energy
5 transfer" that is "based on coupled magnetic resonance
6 using magnetic field antennas," right?

7 A. So that is, I think, what I tried to say,
8 right, is that I'm coupling energy from one resonant
9 antenna to another using magnetic fields.

10 Q. You said using magnetic field antennas,
11 correct?

12 A. That's what I quote from the patent, yes.

13 Q. Okay. Well, what does -- what is your
14 understanding of coupling magnetic resonance using the
15 magnetic field antennas?

16 A. So the antenna is the device that's moving
17 the energy back and forth, right. It's transmitting
18 the energy. It's receiving the energy.

19 In the case of Cook, that energy is
20 primarily in the form of magnetic field.

21 Q. And is that -- so Cook is using a magnetic
22 field antenna, correct?

23 A. So Cook is describing it as a magnetic
24 field antenna.

25 Q. Okay. And do you agree with that

1 description?

2 A. I prefer to think of it as an antenna that
3 transfers energy back and forth primarily through
4 magnetic field coupling.

5 Q. Okay. All right. And with respect to Cook
6 523, the resonant antenna disclosed in Cook 523 also
7 using magnetic field antennas?

8 A. So, again, they're using resonant antennas
9 to exchange energy. That energy exchange is primarily
10 through magnetic field interaction.

11 Q. Okay. All right. And then turning to
12 Pohjonen that you just discussed a little bit ago, is
13 the internal antenna of Pohjonen using a magnetic field
14 antenna primarily?

15 MR. DAVIS: Objection, form,
16 foundation.

17 A. So Pohjonen's description of an antenna is
18 to exchange energy, but not necessarily focused on the
19 magnetic field dominating the energy transfer.

20 Q. Okay. So what is it? What is it? It's
21 not using it for dominating magnetic field transfer,
22 what is it doing? Is it sending out radiating waves
23 far field?

24 A. It's --

25 MR. DAVIS: Objection to form.

1 A. I'm not sure that it is specified
2 exclusively as that, but a typical cell phone antenna
3 say would be exchanging energy electromagnetically, as
4 opposed to primarily magnetically.

5 Q. So if you're exchanging energy primarily
6 electromagnetically, as in Pohjonen, is that exchanging
7 energy to determine it's far field?

8 MR. DAVIS: Objection to the form,
9 foundation.

10 A. It depends on, you know, the wavelength
11 that's being utilized. It depends on the distance,
12 right, between the antenna and the other antenna and so
13 on. I think it could be.

14 Q. Are you able to understand what the term
15 far field means in this context, the antenna used in
16 Pohjonen?

17 MR. DAVIS: Objection, lacks
18 foundation.

19 A. I know what a -- I know what the far field
20 is, if that's what you're asking.

21 Q. Yeah. Could you explain that, please, your
22 understanding of far field?

23 A. If the physical separation between antennas
24 is large compared with the wavelength that is
25 associated with the energy being transferred, you are

1 in the far field; and conversely, you're in the near
2 field.

3 Q. Okay. And in the Cook 554 and Cook 523,
4 are they primarily using the magnetic field antennas in
5 the near field, based upon the way you just explained
6 it?

7 MR. DAVIS: Objection to form,
8 foundation.

9 A. So the antennas are likely to be much more
10 effective in the near field, based on the frequencies
11 that are described in that -- in those patents.

12 Q. And then conversely, on Pohjonen, it's
13 going to be much more effectively in the far field,
14 correct?

15 A. I don't recall Pohjonen actually
16 specifically stating that. But I do think that it is
17 possible for Pohjonen to be far-field transmission. I
18 do think that in both cases, whether it be near field
19 or far field, you want to make sure that you don't
20 dissipate energy needlessly in any sort of surrounding
21 housing.

22 Q. Okay. Let's go to your declaration at
23 paragraph 223, please.

24 A. Yes, I have it.

25 Q. You state in paragraph 223, you're talking

1 about your cite to Cook 523 and Column 1, 37 to 41,
2 okay.

3 And if you go to -- if we go to Cook 523 at
4 Column 1, lines 37 to 41, if you put that out --

5 MR. LAWSON: Cook 523, again, madame
6 court reporter, that's Exhibit 1007.

7 A. Yes, I see it.

8 Q. And there it says: An efficient power
9 transfer may be carried out between two antennas by
10 storing energy in the near field of the transmitting
11 antenna, rather than sending the energy into free space
12 in the form of a traveling electromagnetic wave, right?

13 A. That's what it says, yes.

14 Q. And then on -- let's go back to paragraph
15 99 of your declaration. You cite -- on paragraph 99,
16 you cite to Cook 523 at Column 2, 49 to 53, right?

17 A. Excuse me, I just need a minute.

18 Q. Go ahead, yep.

19 (Pause.)

20 A. So I'm on paragraph 93 of my declaration.

21 Q. Right. And you cite to Cook 523 there at
22 Columns(sic) 2, 49 to 53, correct?

23 A. In paragraph 93?

24 Q. Paragraph 99.

25 A. 99?

1 Q. Yeah, paragraph 99, I'm sorry.

2 A. Yes, I cite Cook 523 in paragraph 99.

3 Q. And if you go to Cook 523 at Column 2,
4 lines 49 to 53, let me know when you get there.

5 (Pause.)

6 Q. Are you there?

7 A. Yeah, sorry.

8 Q. Yeah, it states there in Cook Column 2,
9 lines 49 to 53 states that the antenna is non-radiative
10 in the sense that much of the output of the antenna is
11 not electromagnetic radiating energy, but is rather a
12 magnetic field, which is more stationary. And of
13 course part of the output from the antenna will in fact
14 radiate, right?

15 A. Yes, that's what it says.

16 Q. Okay. So does the resonant antennas in
17 Cook 554 store their energy in the near field of the
18 transmitting antenna rather than sending the energy
19 into free space in the form of a traveling
20 electromagnetic wave?

21 MR. DAVIS: Objection, foundation,
22 form.

23 A. I think it's a question of how much energy
24 is stored and propagated.

25 Q. Okay.

1 A. So --

2 Q. Go ahead.

3 A. Please, go ahead.

4 Q. And so the resonator -- the resonant
5 antennas in Cook 554 then stored much more of the
6 energy, a significantly amount more of the energy in
7 the near field of the transmitting antenna, rather than
8 sending the energy into the free space in the form of a
9 traveling electromagnetic wave, correct?

10 MR. DAVIS: Objection, form,
11 foundation.

12 A. I think a person of ordinary skill who's
13 trying to make a magnetic field-based energy transfer
14 device, would attempt to design such a system in that
15 way.

16 Q. Okay. And what do you mean in that way?

17 A. Where more of the magnetic field is held
18 locally rather than -- more of the energy is held in a
19 local magnetic field, rather than propagated as
20 electromagnetic radiation.

21 Q. Right. And when you say the local magnetic
22 field, the person skilled in the art would understand
23 that to be the near field, correct?

24 A. Near field.

25 Q. Okay. And does the antenna in Pohjonen

1 store most of the energy in the near field of the
2 transmitting antenna?

3 MR. DAVIS: Objection, form
4 foundation.

5 A. So it obviously depends on the application
6 that one is using the Pohjonen antenna for. Whether
7 one is close or far in wavelengths compared to the --
8 well, whether the distance is large or small compared
9 with the wavelength at which the energy is being
10 exchanged. I think in a typical cell phone
11 application, it would be more of a far-field
12 application. Nonetheless, in both applications, it's
13 necessary to reduce the amount of wasted energy in the
14 vicinity of the antenna.

15 Q. Okay. And do you have an understanding
16 what it would mean for a resonant antenna to be
17 non-radiative?

18 MR. DAVIS: Objection, foundation,
19 form.

20 A. I think a person of ordinary skill would
21 refer to a non-radiative antenna as one the majority of
22 whose energy is in the near field.

23 Q. Okay. And are the resonant antennas in
24 Cook 554 generally non-radiative, in your opinion, as a
25 person skilled in the art?

1 A. So I think, as it says in Cook, there would
2 be some far-field radiation, but the goal would be to
3 try to have most of the energy in the near field.

4 Q. Similarly, Pohjonen, it's -- well, strike
5 that.

6 In contrast to Cook 554, in Pohjonen, the
7 antenna -- the antenna, the purpose would not be to
8 keep the majority of the energy in the near field,
9 isn't that correct?

10 MR. DAVIS: Objection, form
11 foundation.

12 A. So we would have to know where the
13 receiving antenna is in order to understand that
14 question, and whether or not it's close or far in terms
15 of wavelengths.

16 Q. Well, if you were using the mobile phone
17 device that's disclosed in Pohjonen, and it was
18 communicating with another mobile phone, it would be
19 radiating, correct?

20 MR. DAVIS: Objection, form,
21 foundation.

22 A. So if I think about the, some of the oh,
23 what were they called, non-cellular portable phones for
24 use within a home, some of those, the wavelengths were
25 quite large, right, compared to the distance between

1 where the phone is and the local base station.

2 For a typical cellular phone, I believe
3 that it's more likely that -- did I say that right?

4 For a wireless phone, the distance might be
5 quite small compared to the wavelength. But for a
6 wireless phone, it might be quite large.

7 And so -- sorry, let me try one more time.

8 For a wireless phone, the distance might be
9 small compared with the wavelength between the phone
10 and the base station.

11 Whereas for a cellular phone, more
12 typically that distance is large.

13 So in the former case, it would be
14 non-radiative, or less radiative example; and in the
15 latter case, it would be trying to be radiative.

16 Sorry, I had to say that three times.

17 MR. LAWSON: No, that's okay. I think
18 we'll take -- just take a five-minute break
19 here and see if I need to go over my notes.
20 I'm not sure -- we'll come back. I may have
21 a couple more questions, but I want to go
22 back over my notes and then determine
23 whether or not we have to -- I've got more
24 questions or not.

25 So why don't we reconvene at say 4:40

1 eastern, so in seven minutes. Does that
2 work, Blake and Dr. Allen?

3 (Off the record at 4:33 p.m.)

4 (On the record at 4:40 p.m.)

5 MR. LAWSON: Dr. Allen, at this time,
6 I don't have any further questions.

7 THE WITNESS: Thank you.

8 MR. DAVIS: I have no further
9 questions.

10 (Whereupon the deposition was
11 concluded at 4:40 p.m.)

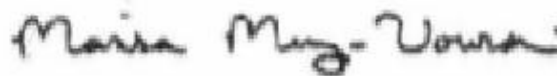
12 (Signature reserved.)
13
14
15
16
17
18
19
20
21
22
23
24
25

C E R T I F I C A T E

I, Marisa Munoz-Vourakis, Stenographic Reporter, RMR, CRR and Notary Public, certify that on May 7, 2024, in Philadelphia, Pennsylvania, having produced satisfactory evidence of identification, and having been first duly sworn or affirmed by me according to the emergency video notarization requirements contained in G.S. 10B-25, to tell the truth, thereupon testified as set forth in the preceding pages, exclusive of errata sheet and signature page, if required, the examination being reported by me verbatim and reduced to typewritten form by me personally.

I further certify that I am neither counsel for, related to, nor employed by any of the parties to this action in which this proceeding was conducted, and further, that I am not a relative or employee of any attorney or counsel employed by the parties thereof, nor financially or otherwise interested in the outcome of the action.

IN WITNESS WHEREOF, I have hereunto subscribed my name
this May 8, 2024



MARISA MUNOZ-VOURAKIS

Notary #20032900127

Mark Allen

May 8, 2024

RE: Inductev, Inc. v. Witricity Corporation

5/7/2024, Mark Allen , Ph.D. - ('719 Patent) (#6675796)

The above-referenced transcript is available for review.

Within the applicable timeframe, the witness should read the testimony to verify its accuracy. If there are any changes, the witness should note those with the reason, on the attached Errata Sheet.

The witness should sign the Acknowledgment of Deponent and Errata and return to the deposing attorney. Copies should be sent to all counsel, and to Veritext at litsup-ga@veritext.com

Return completed errata within 30 days from receipt of testimony.

If the witness fails to do so within the time allotted, the transcript may be used as if signed.

Yours,

Veritext Legal Solutions

Inductev, Inc. v. Witricity Corporation

Mark Allen , Ph.D. - ('719 Patent) (#6675796)

E R R A T A S H E E T

PAGE_____ LINE_____ CHANGE_____

REASON_____

PAGE_____ LINE_____ CHANGE_____

REASON_____

PAGE_____ LINE_____ CHANGE_____

REASON_____

PAGE_____ LINE_____ CHANGE_____

REASON_____

PAGE_____ LINE_____ CHANGE_____

REASON_____

PAGE_____ LINE_____ CHANGE_____

REASON_____

Mark Allen , Ph.D. - ('719 Patent) Date

Inductev, Inc. v. Witricity Corporation

Mark Allen , Ph.D. - ('719 Patent) (#6675796)

ACKNOWLEDGEMENT OF DEPONENT

I, Mark Allen , Ph.D. - ('719 Patent), do hereby declare
that I have read the foregoing transcript, I have made any
corrections, additions, or changes I deemed necessary as
noted above to be appended hereto, and that the same is
a true, correct and complete transcript of the testimony
given by me.

Mark Allen , Ph.D. - ('719 Patent)

Date

*If notary is required

SUBSCRIBED AND SWORN TO BEFORE ME THIS

_____ DAY OF _____, 20____.

NOTARY PUBLIC

[& - 719]

Page 1

&	33:25,25 34:3	21 4:9 10:23	4:33 52:3
& 2:5,17	13 10:22	21571 53:23	5
1	13a 31:21,24 34:6,9	218 27:19,22 28:5,17	5 4:4
1 4:8 16:19 21:15,21 35:23 36:12,14,17 40:9 46:1,4	13b 32:6,9 34:14,15,17,22	223 45:23,25	5/7/2024 54:5
10 10:22	13e 35:3	23 10:23	50 8:20 35:10
1000 36:17	14 10:22	25 53:8	505 2:18
1001 4:9 10:11 10:21 21:14,16 21:19 35:24	149 26:9 27:1,5	2610 2:6	523 27:23 28:6 28:20,23 29:4 29:9,11,14,21 29:23 40:2 43:6,6 45:3 46:1,3,5,16,21 47:2,3
1003 10:12,21 13:5	15 10:22 16:19	27 10:23	53 46:16,22 47:4,9
1004 10:12,21	16 10:22 16:1 16:13,15 20:24 21:3,25 22:2 22:25 24:18 37:7,17,22,24 38:4	28 4:10 10:23	554 26:14,16,19 26:20 27:6 28:23 29:4,15 39:16,19,22 41:8,9 45:3 47:17 48:5 49:24 50:6
1005 10:12,21	17 10:22 16:5 16:13,16 20:24 21:4,25 22:25 24:19 25:9 37:7 38:20	28280 2:8	
1007 4:10 27:24 28:2 30:2 46:6	18 10:22	29 10:23	
1009 4:11 40:20,22	19 10:23	3	
101 2:7	2	3 21:15 36:24 30 54:16 32 22:21 24:14 24:21 33 22:21 36 4:8 37 46:1,4 3:02 3:8 3:55 35:17,19	
1030 10:23 21:16		4	6
10b 53:8	2 16:4 21:15 46:16,22 47:3 47:8	4 16:4 40 4:11 41 46:1,4 415-391-0600 2:20 45 8:20 49 46:16,22 47:4,9 4:05 35:18 4:06 35:20	6 10:21 6675796 54:5 55:2 56:2
11 10:22	20 10:23 56:15		7
12 10:22	2000s 7:11,13		7 1:18 5:12 10:22 53:4
1221 33:19,20	20032900127 53:25		704-347-6475 2:9
12a 29:22,23 30:7,8,11,12 32:15,16,22,25	2010 7:10,13		719 4:8,9 5:18 14:23 16:1,12 16:19,25 20:10
12b 30:17,18 30:21 33:11,12	2024 1:18 3:8 53:4,22 54:3		
12c 30:23,24 31:1,13,17			

[719 - associated]

Page 2

20:13 21:14,21 39:7 54:5 55:2 55:24 56:2,4 56:12 74 39:12,12 42:3 7th 3:8	accuracy 54:9 acknowledge... 56:3 acknowledg... 54:12 action 53:15,19 actually 27:1 45:15 addition 15:1 additions 56:6 administrative 11:20 adobe 30:5 affirmed 53:7 afternoon 5:7 5:10 6:8 ago 12:13 43:12 agree 42:25 ahead 9:25 10:9 46:18 48:2,3 allen 1:15 3:6 4:3 5:2,7 6:16 14:3 17:12,19 18:8,15 23:15 35:5,13 36:18 37:8 41:2 52:2 52:5 54:1,5 55:2,24 56:2,4 56:12 allen's 17:8 39:12 allotted 54:19	allow 32:13 alternative 36:25 amount 48:6 49:13 andrew 2:4 andy 6:3 answer 7:20 24:6,7 28:11 28:15 31:6,6 35:6 answered 28:13 answers 8:4,6,7 antenna 30:8 30:18,24 31:23 32:8,11 34:24 40:4,4,6,7 41:5 41:9,12,15,18 41:22,24,25 42:9,16,22,24 43:2,6,13,14,17 44:2,12,12,15 46:11 47:9,10 47:13,18 48:7 48:25 49:2,6 49:14,16,21 50:7,7,13 antenna's 30:13 41:5 antennas 39:18 42:6,10,15 43:7,8 44:23 45:4,9 46:9 47:16 48:5	49:23 appeal 1:3 appearance 2:1 appended 56:7 applicable 54:8 application 4:10 29:2 49:5 49:11,12 applications 49:12 applies 12:20 approximately 7:1 area 13:13 areas 11:18 argue 36:25 art 21:8 22:12 22:17 23:4,9 23:24 24:8,9 24:10 25:1,19 26:6 27:10,14 29:8 37:23 38:13,15 41:12 48:22 49:25 asked 16:14 37:14 asking 7:19 14:9 23:12 25:24 44:20 aspence 2:11 assert 15:22 16:23 assigned 39:4,6 associated 9:9 9:21 13:9
8			
8 10:22 17:17 19:7,10,11 20:4 36:20 53:22 54:3 8,461,719 1:12 5:19 36:12 8th 19:10			
9			
9 10:22 20:4 90s 7:11 93 40:12 41:2 46:20,23 94111 2:19 99 39:24 46:15 46:15,24,25 47:1,2			
a			
ability 7:21 able 5:9 8:11 8:15 19:2 38:12,14 44:14 above 54:6 56:7 access 17:22 accommodate 9:1			

[associated - community]

Page 3

30:21 44:25 assume 7:25 assuming 17:15 attached 54:11 attempt 48:14 attention 34:13 attorney 53:17 54:13 available 37:2 54:6	blake.davis 2:21 board 1:3 break 8:20,21 8:22,23 9:1 35:12 51:18 burr 2:5 5:15 6:4 burr.com 2:10 2:11	cell 44:2 49:10 cellular 50:23 51:2,11 certainly 31:12 34:19 certified 3:9 certify 53:4,13 chair 11:9 chairman's 11:21 challenge 16:11 change 25:23 26:3 55:4,7,10 55:13,16,19 changes 54:10 56:6 characteristic 20:7,7 24:17 characteristics 24:16 charlotte 2:8 chat 18:4 check 20:16 circuit 12:11 circuits 12:25 citations 23:21 25:18 cite 46:1,15,16 46:21 47:2 cited 22:12 24:8 37:23 claim 16:1,1,5 16:24,25 19:8 19:13 20:4,6 20:24 21:2,3,3	21:24 22:2,22 22:24,24 24:15 24:18,25 25:9 31:3 36:20 37:6,7,17,22,24 38:4,5,15,20 39:5,7 claims 16:12,12 16:19 22:24 24:18 37:2 clam 31:15 clamshell 34:1 34:3 classes 12:9 clear 10:24 12:7 14:7 17:4 close 49:7 50:14 coil 25:11 31:2 32:4 40:9 colleague 6:3 column 46:1,4 46:16 47:3,8 columns 46:22 combination 38:1 come 18:18 51:20 communicating 50:18 communicati... 9:7 14:4 community 11:20
b	c		
back 14:13 31:2,4 32:15 35:16 36:20 42:3,17 43:3 46:14 51:20,22 base 51:1,10 based 28:24 38:17,19,22 39:4,7,17 42:5 45:5,10 48:13 believe 7:17 9:22 11:2 29:6 30:20 38:8 51:2 best 7:21 38:10 38:24 39:10 better 24:7 36:2 bit 18:21 34:17 37:12 43:12 blake 2:16 17:24 36:1 52:2	c 5:1 53:2,2 ca 2:19 called 50:23 capacitor 40:9 capacitors 25:13 26:1,4 capacity 11:25 12:21 carried 46:9 case 1:11 5:16 13:4 14:22 15:16 29:20 30:13,16,22 31:2,3,9,12 32:1,2,5,23,24 32:25 33:4,8 33:11,15,21 34:1,3,8,11,14 34:23 35:6 42:19 51:13,15 cases 38:1 45:18 caution 9:5 14:3		

[compared - davis]

Page 4

compared 44:24 49:7,8 50:25 51:5,9 complete 56:8 completed 54:16 comprising 40:8 concerns 41:3 concluded 52:11 conclusion 40:25 conducted 53:15 conducting 25:12 confused 17:12 24:1 confusion 17:9 connected 25:12,16,20,24 consider 31:16 considered 33:16 considering 28:12 construction 19:8,13 21:2 36:21 constructions 16:24 20:5,6 36:25 contained 15:16 53:8	contains 14:14 contention 37:6 37:20 context 16:22 23:20 27:12,17 44:15 contrast 50:6 conversations 14:8 conversely 45:1 45:12 cook 4:10 26:14 26:16,19,20 27:6,23 28:6 28:20,23,23,23 29:4,4,9,15,21 29:23 39:16,19 39:22 40:2 41:8,8,14 42:1 42:4,19,21,23 43:5,6 45:3,3 46:1,3,5,16,21 47:2,3,8,17 48:5 49:24 50:1,6 copies 11:2,3 54:14 copy 10:1,3 17:19,21,24 41:1 corbett 6:6 corporation 1:7 5:16 54:4 55:1 56:1	correct 6:21 7:16,17 10:25 11:10 12:10,18 12:23 13:19 14:17,21,25 15:5,12,13 16:2,5,10,13,20 17:1 19:15 20:2,8,13,15,17 20:24 21:1,4 22:16 23:2 24:5,19 25:1 25:22 26:2,15 27:16,24,25 28:9,21 29:1,5 29:6 33:22 37:25 38:2,5 38:21 39:3,8 39:18,20,22,23 40:11,16,17 41:7,19 42:11 42:22 45:14 46:22 48:9,23 50:9,19 56:8 corrections 56:6 correctly 7:25 counsel 2:1 5:5 6:5,9 9:7,9 14:1,5,9,12 20:19 25:2,8 53:13,17 54:14 couple 6:16 39:17 51:21	coupled 42:5 coupling 12:12 12:25 42:1,8 42:14 43:4 course 12:14 14:19 47:13 courses 11:18 12:2,4,11,16,19 12:25 13:2 court 8:5 30:1 37:11 40:18 46:6 cover 27:15 32:16,20 41:3 crr 1:23 53:4 currently 11:22 31:15 cv 11:8 <tr> <td colspan="4">d</td></tr> <tr> <td colspan="4"> d 4:1 5:1 date 55:24 56:12 davis 2:16 5:24 6:13 9:5 10:5 10:11,18 11:1 11:6 14:2 15:18 17:2,18 18:3,7,15,20 23:10,19 29:16 32:19 33:3,14 35:1,5 36:4 37:8 38:6 41:10 43:15,25 44:8,17 45:7 47:21 48:10 </td></tr>	d				d 4:1 5:1 date 55:24 56:12 davis 2:16 5:24 6:13 9:5 10:5 10:11,18 11:1 11:6 14:2 15:18 17:2,18 18:3,7,15,20 23:10,19 29:16 32:19 33:3,14 35:1,5 36:4 37:8 38:6 41:10 43:15,25 44:8,17 45:7 47:21 48:10			
d											
d 4:1 5:1 date 55:24 56:12 davis 2:16 5:24 6:13 9:5 10:5 10:11,18 11:1 11:6 14:2 15:18 17:2,18 18:3,7,15,20 23:10,19 29:16 32:19 33:3,14 35:1,5 36:4 37:8 38:6 41:10 43:15,25 44:8,17 45:7 47:21 48:10											

[davis - drawing]

Page 5

49:3,18 50:10 50:20 52:8 day 3:8 56:15 days 54:16 deadline 5:13 declaration 5:21 9:8,19,20 9:21 13:3,6,9 13:16,23,24 14:14,21,25 15:4,9,11,16 16:7,15,18 17:7,10,14,15 17:20 18:2 20:11,15,18 22:7,21,23 23:8 24:23 25:7,17,22 26:8 27:19 39:3,11,13,25 40:13 45:22 46:15,20 declare 56:4 deemed 56:6 defense 37:1 define 22:15,15 25:21,22 defined 20:13 20:14,14,22,23 24:22 38:9 39:10 defines 20:10 20:19,20 25:3 25:4,5	definition 22:10 23:17,25 24:3,4,15 26:1 definitions 21:11 22:22,23 23:3,22,23 24:20 department 11:10,14 depends 44:10 44:11 49:5 deployed 31:16 depo 10:14 deponent 54:13 56:3 deposed 6:19 deposing 54:13 deposition 1:15 3:6 4:6 5:10 6:7,15,18,21 7:12,13,18 8:18 9:4,14 18:13 19:18,22 21:19 28:2 36:14 40:22,25 52:10 depositions 6:23 7:14 derive's 30:25 describe 41:12 described 45:11 describing 40:3 42:2,23	description 4:7 43:1,17 design 48:14 determine 44:7 51:22 device 12:4 26:15,22 27:7 28:8,19,25 32:13,17 33:1 33:12 34:2,8 34:15 41:4 42:16 48:14 50:17 device's 30:9 30:19 31:17,24 32:9 devices 12:5 dictionary 23:12 difference 24:13 different 21:11 35:25 37:17 difficult 8:6 23:13 31:11 difficulty 38:4 dimly 38:10 direct 32:21 34:13 disclose 28:24 29:3 disclosed 37:24 38:15 43:6 50:17	discloses 26:14 26:19,20 27:6 28:6,21 39:16 42:4 disclosing 39:22 41:9 discuss 9:10 discussed 14:6 43:12 discusses 41:14 discussions 14:1 16:16 dissipate 45:20 distance 44:11 49:8 50:25 51:4,8,12 docs 11:18 document 21:10,18 28:1 36:13 40:21 doing 43:22 dominating 43:19,21 dr 5:7 6:16 14:3 17:8,12 17:19 18:8,15 23:15 35:5,13 36:18 37:8 39:12 41:2 52:2,5 draft 13:23 14:11,12 19:16 19:19 drawing 30:15 33:6
---	---	---	---

[duly - field]

Page 6

duly 5:3 53:6 duties 11:13,21 12:8 duty 7:20	email 18:8 emergency 53:7 employed 53:14,17 employee 53:16 enclosed 22:4,8 22:9,11,13,14 22:16 23:9,16 23:18 24:5 26:17 27:11 29:9,11,14 30:9,15,18,24 31:9,9,17,20,24 32:1,9,12,14 enclosure 34:18 energy 39:16 40:3 41:13,25 42:4,8,17,18,18 42:19 43:3,9,9 43:18,19 44:3 44:5,7,25 45:20 46:10,11 47:11,17,18,23 48:6,6,8,13,18 49:1,9,13,22 50:3,8 engineering 11:10,14,19 enhance 41:5 entered 21:11 entitled 36:10 errata 53:10 54:11,13,16	esq 2:3,4,16 everybody 36:7 evidence 53:6 exactly 7:9 examination 4:2,4 5:5 53:11 examined 5:4 example 23:16 24:1 29:17,19 29:20 51:14 examples 29:10 exchange 43:9 43:9,18 exchanged 49:10 exchanging 44:3,5,6 exclusive 53:10 exclusively 44:2 excuse 33:6 46:17 exhibit 4:7,8,9 4:10,11 9:13 10:6,11 13:5 21:14,19,21 27:24 28:2 30:2 35:23 36:14 40:20,22 46:6 exhibits 4:6 9:9 9:18,21,24 13:18 21:15 36:16	exist 31:7 expert 2:13 6:11 explain 39:2 44:21 explained 45:5 external 30:9 30:10,19,25 31:18,24 32:9 extrapolation 38:17
e			f
e 4:1 5:1,1 19:12 53:2,2 55:3,3,3 earlier 6:7 10:14 12:7 41:17 early 7:11,13 eastern 5:12 52:1 editing 14:13 effective 45:10 effectively 45:13 efficiency 41:6 efficient 46:8 either 11:20 26:2 31:7 electrical 11:9 11:14,19 12:18 electromagne... 46:12 47:11,20 48:9,20 electromagne... 44:3,6 electronic 11:2 17:24 36:19 element 25:10 elements 21:3 24:18 37:24 38:4,16			f 53:2 fact 47:13 fails 54:18 fair 8:2 9:1 familiar 19:14 far 43:23 44:7 44:15,19,22 45:1,13,17,19 49:7,11 50:2 50:14 fast 7:24 features 32:12 ferrite 32:3 34:24 field 39:17 41:9 41:18,21,24 42:1,6,10,15,20 42:22,24 43:4 43:7,10,13,19 43:21,23 44:7 44:15,19,22 45:1,2,4,5,10 45:13,17,18,19

[field - heading]

Page 7

46:10 47:12,17 48:7,13,17,19 48:22,23,24 49:1,11,22 50:2,3,8 fields 42:9 figure 29:22,22 30:7,8,11,12,17 30:21,23,24 31:13,17,21,24 32:6,9,15,16,22 32:25 33:11,12 33:25 34:3,6,9 34:13,15,22 35:3 40:9 figures 29:23 file 9:22 filed 13:12 17:7 19:25 fill 38:24 final 19:19 financially 53:18 fine 18:5 35:15 finish 8:25 firm 5:15 6:4 first 5:3 12:3 13:23,25,25 14:10,10,12 26:13 28:4 29:5 53:6 five 6:20 51:18 focused 43:18 follows 5:4	footnote 36:23 foregoing 56:5 form 13:8 15:18 23:10,19 29:16 31:7 32:19 33:3,14 35:1 36:20 38:6 41:10 42:20 43:15,25 44:8 45:7 46:12 47:19,22 48:8,10 49:3 49:19 50:10,20 53:12 formal 20:5 21:1 22:8,21 formals 6:17 forman 2:5 5:15 6:4 former 51:13 formulate 24:10 forth 14:13 31:4 42:17 43:3 53:9 foundation 41:11 43:16 44:9,18 45:8 47:21 48:11 49:4,18 50:11 50:21 four 6:20 15:21 16:9 frame 7:2,10,11 7:13	francisco 2:19 free 46:11 47:19 48:8 frequencies 45:10 front 9:16,17 9:23 21:22 36:19 functionalities 41:13 further 52:6,8 53:13,16	30:6,23 31:21 32:15 35:16 36:2,20,24 39:11,24 40:12 42:3 45:22 46:3,3,14,18 47:3 48:2,3 51:19,21 goal 50:2 going 7:9 14:2 20:16 35:10 45:13 good 5:7 11:4 35:11 govern 20:21 graduate 11:17 12:2,3 ground 15:25 grounds 15:21 16:4,9 37:17 37:18,18 guess 13:10 18:5
		g	
		g 5:1 g.s. 53:8 ga 54:15 gap 30:22 33:17,18 general 13:12 generally 49:24 geometric 32:12 georgia 12:23 12:24 getting 26:11 give 8:4 35:5,25 37:9,10 given 56:9 glad 5:9 go 6:16 7:18 8:20 9:25 10:8 17:16 19:7 21:13,13,15,24 25:9 26:8 27:18 29:21	
			h
			h 55:3 handheld 26:15 26:22 27:7 28:8,19,25 32:17 33:1,12 34:2,8,15 happens 27:3 32:22 hard 5:11 heading 19:7

[heads - long]

Page 8

heads 8:7 hear 7:25 28:11 28:14 held 48:17,18 hello 5:8 help 13:8 hereto 56:7 hereunto 53:21 hold 11:22 30:4 home 50:24 hopefully 18:16 18:19 horenstein 2:13 5:25 6:10 housing 30:10 30:19,25 31:18 31:25 32:10 45:21	54:4 55:1 56:1 inductev's 9:12 13:18 14:16 15:15 16:5 inductive 40:9 inductor 23:25 24:4 inform 8:1 information 15:2 16:8 inside 26:17 31:2,9,10,12 integrated 26:15,21 27:7 27:10 28:8,18 28:25 29:9,14 29:15 intended 28:7 28:18 inter 4:8 36:11 interaction 43:10 interested 53:18 interesting 34:17 internal 41:5 43:13 interrupting 5:25 introduced 6:2 introductory 12:2 inventor 29:5	involved 7:3,6 involving 14:23 ipr2023-01182 1:11 5:17 14:22 issue 30:5,6	late 7:11 latham 2:17 law 5:15 6:4 lawson 2:3 4:4 5:6,14,24 6:2 6:14 10:8,16 10:24 11:4,7 15:19 17:11,21 18:9,11 19:1 29:25 35:9,16 35:21 36:6,16 40:18,24 46:5 51:17 52:5 legal 54:23 likely 6:7 45:9 51:3 line 8:25 55:4,7 55:10,13,16,19 lines 46:4 47:4 47:9 list 9:13 10:15 listed 13:7,18 37:18,24 litsup 54:15 little 18:21 30:4 35:10 37:11 43:12 llawson 2:10 llp 2:5,17 load 18:4 local 48:19,21 51:1 locally 48:18 long 8:19
i		join 6:8 justified 38:9	
		k	
		keep 50:8 know 8:23 11:20 19:8 21:22 31:5 33:7 44:10,19 44:19 47:4 50:12 knowledge 13:13 15:1,3 15:10	
		l	
identification 21:20 28:3 36:15 40:23 53:6 include 16:18 37:6 included 15:11 includes 25:11 41:5 including 9:19 11:16 indefinite 37:2 37:7 inductev 1:5 6:24 7:3,4,8,15 15:21 17:6		label 35:22 36:12,17 labeled 32:5 33:15 34:11 35:2 labels 35:2 lacks 44:17 lance 2:3 5:14 10:5 17:2 large 44:24 49:8 50:25 51:6,12	

[longer - nanotechnology]

Page 9

longer 31:6 look 16:14 29:22,23 30:7 30:11,11,17,20 32:6,22 33:10 33:25 34:6 looked 11:8 13:10 16:21 38:3 looking 10:12 20:18 26:23 37:19 loss 22:4 26:18 27:15 32:17 33:1,4,8,13,16 33:22,24 34:2 34:5,9,12,16,21 low 22:4 26:18 27:15 32:17 33:1,4,13,16,22 33:24 34:2,5,9 34:12,16,21 lw.com 2:21	42:14,15,20,21 42:23 43:4,7 43:10,13,19,21 45:4 47:12 48:13,17,19,21 magnetically 41:15 44:4 major 11:15 majority 49:21 50:8 make 5:9,12 9:5 10:19 16:1 17:3,8 18:21 36:1 45:19 48:13 marisa 1:23 3:8 53:3,24 mark 1:15 2:13 3:6 4:3 5:2 6:10 54:1,5 55:2,24 56:2,4 56:12 marked 21:18 28:1 36:13 40:21 material 14:9 22:4 25:12 26:17 27:15 32:18 33:2,5 33:13,16,22,24 34:2,10,16,21 34:23 41:3 materials 9:11 9:17 13:5,7 34:5,12 35:3	matter 10:10 14:6 35:21 mean 14:18 19:20 23:24 24:25 25:20 36:4 38:18 41:21 48:16 49:16 meaning 21:6,8 21:12 23:1,4,6 24:10 25:24 26:4,7 38:11 38:14 39:6 meanings 39:4 means 21:9 22:8,9 23:9,9 23:18 25:16,20 26:4 27:10 29:9,14 41:24 44:15 meant 17:15 38:5 medications 8:10 meet 5:12 megabytes 18:20 mentioned 12:24 merit 3:9 messing 17:4 metal 33:16,23 metallic 30:22 31:9,12 32:1,2 32:5,23,24	33:5,8,15 34:4 34:11,18,20,23 metals 34:4,12 middle 8:24 mind 5:25 minute 35:12 46:17 51:18 minutes 8:21 35:10 52:1 missing 24:11 mobile 12:17 26:15,21 27:7 28:8,19,25 30:9,18,24 31:17,24 32:9 32:17 33:1,12 34:1,8,15 50:16,18 monitoring 6:11 montgomery 2:18 morning 6:7,16 6:21 12:7 moving 42:16 multiple 41:13 munoz 1:23 3:9 53:3,24
m			n
madame 40:18 46:5 made 25:18 32:17 33:1,4 33:12,15,21,23 34:2,9,15,21 56:5 magnetic 12:12 12:25 39:17,17 41:9,18,21,24 42:1,5,6,9,10			n 4:1 5:1 name 5:14 53:21 named 29:5 nanotechnolo... 12:4

[nc - output]

Page 10

nc 2:8 near 45:1,5,10 45:18 46:10 47:17 48:7,23 48:24 49:1,22 50:3,8 necessarily 43:18 necessary 49:13 56:6 need 8:22 46:17 51:19 needlessly 45:20 neither 53:13 network 25:13 26:1,4 nomenclature 17:5 non 32:23,24 33:5,8 47:9 49:17,21,24 50:23 51:14 nonverbal 8:6 notarization 53:8 notary 1:23 3:10 53:4,25 56:13,19 note 54:10 noted 24:22 56:7 notes 51:19,22 noting 39:9	number 4:7 21:17,19 26:25 28:2 35:23,23 35:25 36:12,14 36:17,24 40:22 numbers 10:7 o o 5:1 oo 3:3 objection 15:18 23:10,19 29:16 32:19 33:3,14 35:1 37:8,13 38:6 41:10 43:15,25 44:8 44:17 45:7 47:21 48:10 49:3,18 50:10 50:20 objections 35:7 obvious 16:2,5 37:17,22 obviously 18:2 49:5 offer 22:7,10 22:23 23:3,17 23:25 24:3,4 24:20 25:23,25 26:1,3 offered 21:1,7 24:14 25:15 office 1:1 oh 19:20 26:12 28:13,14 50:22	okay 5:19,23 6:14,15,23 7:1 7:12,18,23 8:4 8:10,18 9:3,11 9:16,24 10:4 10:15 11:12,23 12:6,20 13:3 13:14,22 14:14 15:2,14,25 16:4,7,11,17 17:16 19:5,17 19:25 20:3,22 21:7,13,24 22:2 24:17 25:9,15,21,25 26:5,8,11 27:13,18,18,21 28:4 29:4,7,13 29:18,21 30:3 30:17,23 31:8 31:13 32:6,15 32:25 33:10,18 33:25 34:22 35:4,9,9,21 36:23 37:16,21 38:3,12,20 39:11,15,21 40:2,12,15 41:2,8,23 42:13,25 43:5 43:11,20 45:3 45:22 46:2 47:16,25 48:16 48:25 49:15,23 51:17	open 19:2,3,6 31:14 operate 12:5 31:11 32:13 operational 31:10 opinion 16:18 21:2,7 22:8 24:11,14 25:5 25:15 28:5,20 28:24 29:18 30:10,25 31:8 31:23 32:8,18 33:2,10,11 34:1,10,14 37:5,14,16,21 37:23 38:19 39:1 49:24 opinions 13:8 14:15,23 15:14 16:8,18 20:12 37:5 opposed 44:4 order 50:13 ordinary 23:24 25:19 26:18 31:19 38:25 39:2 48:12 49:20 outcome 53:18 outer 27:14 32:16,20 output 47:10 47:13
---	--	--	--

[outside - possibility]

Page 11

outside 30:16 own 15:1,3 owner 1:8,16 2:15 3:7 5:5,16 p p 5:1 p.m. 3:8 5:12 35:19,20 52:3 52:4,11 package 29:12 page 4:2,7 17:17 19:7,10 19:10,11 20:4 22:21 24:14 27:4 36:20 53:11 55:4,7 55:10,13,16,19 pages 53:10 paper 11:1 paragraph 24:21 26:9,24 26:25 27:5,18 27:22 28:5,16 39:12,12,24 40:12 41:2 42:3 45:23,25 46:14,15,20,23 46:24 47:1,2 part 9:12,18 12:8 23:5 26:20 47:13 partes 4:8 36:11 particular 14:16 16:24,24	16:25 21:2 22:24 23:17 parties 53:14 53:17 partner 5:14 6:3 past 12:1 patent 1:1,3,8 1:12,16 2:15 3:7 4:8,9,10 5:5,15,18,19 14:23 16:1,12 16:19,25 20:10 20:13,19,20 21:14,21 24:21 24:21 25:3,4,5 29:11 36:11 38:10,24 39:8 39:20 42:12 54:5 55:2,24 56:2,4,12 patents 13:11 35:24 45:11 pause 18:6,10 18:14,17,23 28:10 46:19 47:5 penn 11:10,14 pennsylvania 1:17 3:7 12:22 53:5 perfect 35:14 perform 11:16 perimeter 30:13,14	person 21:8 23:24 24:25 25:19 27:9,13 29:8 31:19 38:13,25 39:1 48:12,22 49:20 49:25 personally 53:12 petition 4:8 9:12,13,18,19 13:18,21 14:16 14:24 15:4,11 15:20,21,22 16:11,23 17:6 17:10,13,17,20 17:22,25 18:1 19:11,15,16,17 19:18,25 20:1 20:5 35:23 36:5,7,10,10,19 37:18 petitioner 1:5 2:2 36:24 ph.d. 1:15 3:6 4:3 54:5 55:2 55:24 56:2,4 56:12 philadelphia 1:17 3:7 53:5 phone 44:2 49:10 50:16,18 51:1,2,4,6,8,9 51:11	phones 12:17 50:23 phrase 22:2 physical 44:23 physics 12:4 plain 11:1 21:6 21:8,12 23:1,4 23:5 24:9 25:23 26:3,7 38:11,13 plan 35:17 plaza 2:6 please 36:20 39:12 44:21 45:23 48:3 plurality 25:11 plus 15:9 pohjonen 4:11 40:16,19 41:3 43:12,13 44:6 44:16 45:12,15 45:17 48:25 49:6 50:4,6,17 pohjonen's 43:17 point 6:8 15:10 24:11 29:19 pointing 35:2 portable 41:4 50:23 position 12:23 15:15 16:5 29:7 possibility 31:1
---	---	--	---

[possible - references]

Page 12

possible 45:17 post 11:17 power 12:9,14 12:17 13:1,2 28:7,18 41:15 46:8 preceding 53:10 predecessor 7:4 prefer 43:2 preparation 9:13 19:22 prepare 9:3 prepared 13:3 13:6,15,16,22 13:23 14:10,10 14:11,12 preparing 19:18 present 2:13 presumably 23:5 33:17 pretty 23:15 prevent 8:11,15 previous 12:22 primarily 42:20 43:3,9 43:14 44:4,5 45:4 prior 6:25 26:6 37:23 38:15 probably 8:19 8:20 10:16,18 35:11	problem 24:12 procedures 6:17 proceeding 5:10,17,21 6:6 6:9,12 14:16 14:18,20,24 53:15 proceedings 6:24 7:2,7,8,15 37:1 produced 53:5 professor 6:10 11:13 12:8 professors 11:16 propagated 47:24 48:19 proposed 20:5 provisional 13:11 public 1:23 3:10 53:4 56:19 purpose 50:7 put 46:4	questions 7:19 7:20,23 17:25 51:21,24 52:6 52:9 quite 50:25 51:5,6 quote 39:19,21 42:12	reasons 8:14 recall 38:10 45:15 receipt 54:17 receive 18:16 receiver 29:11 receives 28:7 28:17 receiving 40:4 40:6,7 42:18 50:13 reconvene 51:25 reconvening 35:18 record 6:5,9 8:5,6 10:6,10 13:4 17:3 19:14 27:23 30:1 35:19,20 35:22 36:9 52:3,4 reduce 49:13 reduced 53:12 refer 5:18 9:11 13:14,17 21:15 21:16 23:4 36:5,6 49:21 reference 4:11 27:23 40:16,19 referenced 13:11 54:6 references 13:9 13:17 18:1,1
		r	
		r 2:16 5:1 53:2 55:3,3 radiate 47:14 radiating 43:22 47:11 50:19 radiation 48:20 50:2 radiative 47:9 49:17,21,24 51:14,14,15 radio 41:4 rather 46:11 47:11,18 48:7 48:18,19 read 9:8 10:6 19:15,17,20 20:1 31:3 54:9 56:5 reads 25:10 really 11:15 23:13 realtime 3:10 reason 7:24 8:22 34:20 54:11 55:6,9 55:12,15,18,21	
	q		
	question 8:1,24 14:7 22:19 23:12,16 24:2 24:7 28:12,16 34:14 37:10 47:23 50:14 questioning 8:25		

referred 15:8 21:18 28:1 34:4 36:13 40:21 referring 18:11 regarding 5:17 6:17 14:15 41:8 regions 34:18 34:19,19 registered 3:9 relate 16:4 related 7:8 12:17 53:14 relative 53:16 relatively 10:17 relevance 37:13 38:7 relevant 15:3,4 15:10 relied 13:12 rely 13:5 relying 24:9 25:8 26:6 remember 7:9 19:19 render 37:14 repeat 26:24 report 37:19 reported 1:23 53:11 reporter 3:9,10 8:5 30:1 37:11 40:19 46:6 53:3	represent 5:15 request 8:23 9:1 required 53:11 56:13 requirements 53:8 research 11:17 reserved 52:12 reserves 36:25 resonance 39:17 42:5,14 resonant 29:11 30:8,18,24 31:23 32:8,11 40:4,6,7 41:15 41:25 42:8 43:6,8 47:16 48:4 49:16,23 resonator 26:14,17,21 27:6 28:7,17 28:24 40:8 48:4 resonators 22:3 22:13 25:11 respect 43:5 responsibilities 11:13 rest 33:21 return 54:13,16 reveal 9:6 review 4:8 19:17 36:11 54:7	right 7:1 10:25 11:8,11 12:20 15:2,16 16:9 16:17 17:16 20:3 22:10,13 23:7,21 24:9 24:24 26:22 27:7,11 28:19 32:2 34:24 36:25 38:18 39:6 40:5,10 40:12 41:6,17 42:6,8,17 43:5 43:11 44:12 46:12,16,21 47:14 48:21 50:25 51:3 rmr 1:23 53:3 rod 34:24 ryan 6:6 s s 2:7 5:1 55:3 san 2:19 sanity 37:12 satisfactory 53:5 save 37:11 says 23:8 25:10 26:16 30:21 36:24 46:8,13 47:15 50:1 scratch 10:13 second 11:18 26:14,16,20,21 27:2,3,5,6 28:6	30:4 35:6 secondary 28:6 28:17 seconds 37:9 section 19:12 36:21 see 22:5 25:13 32:3,7,20,23,24 34:7,25 35:2 37:3 46:7 51:19 seeking 14:8 seen 19:16 selection 41:3 semiconductor 12:5 send 17:23 18:3 18:7 40:24 sending 43:22 46:11 47:18 48:8 sense 36:1 47:10 sent 54:14 sentence 26:13 26:20 27:2,3,5 28:4 separate 5:10 separated 30:22 32:2 separation 44:23 series 7:19 13:25
--	--	--	--

[service - system]

Page 14

service 11:20 11:21 sessions 14:13 set 53:9 seven 52:1 several 14:13 shaking 8:6 sheet 32:3 53:10 54:11 shell 31:3,15 short 31:6 show 34:23 shown 30:8 31:14,15,16 33:11,19 34:9 34:15 40:9 sic 46:22 side 6:11 32:4 sign 54:12 signature 52:12 53:10,23 signed 54:19 significantly 48:6 similar 10:17 similarly 50:4 sitting 13:20 33:8 six 6:20 18:20 size 20:7 24:16 skill 23:24 25:19 26:18 27:9 31:19 38:25 39:2 48:12 49:20	skilled 21:8 24:25 27:14 29:8 38:13 48:22 49:25 slide 31:4 sliding 31:2 small 49:8 51:5 51:9 soft 10:1,3 solutions 54:23 soon 18:16,19 sorry 7:5 9:25 10:13 15:6 19:4 22:18 23:11 24:6,11 26:12,23 27:4 28:11,13,14 35:8 47:1,7 51:7,16 sort 7:10 13:12 38:22 45:20 south 2:6 space 46:11 47:19 48:8 speak 9:9 38:25 specialize 11:25 specialized 20:10,12 specialty 11:23 11:24 12:14 13:1 specific 10:6 12:9 22:22 24:14,15 26:1	specifically 12:9 20:23 25:22 32:21 45:16 specification 33:6,7 38:23 specified 38:23 44:1 spence 2:4 6:1 6:3 start 10:15,19 17:17 19:5 29:22 36:17 state 22:20 27:6,9 28:5,17 39:15 41:3 42:4 45:25 stated 25:6 27:8,13 41:17 states 1:1 20:18 22:3 30:12 47:8,9 stating 45:16 station 51:1,10 stationary 47:12 stenographic 53:3 stop 5:11 store 47:17 49:1 stored 47:24 48:5 storing 46:10	straightforward 23:15 street 2:7,18 strike 13:15 50:4 structures 41:4 students 11:17 12:3,3 submitted 14:22 subscribed 53:21 56:14 substance 9:6 14:4 substantive 14:8 suggestion 36:3 suggests 30:15 suite 2:6 support 14:24 15:9,15 16:8 suppose 30:14 31:5,6 sure 5:12 10:8 10:19 17:3,9 17:11 18:9 41:20 44:1 45:19 51:20 surrounding 30:12,13 45:20 sworn 5:3 53:7 56:14 system 48:14
--	--	---	--

[t - turn]

Page 15

t	terms 16:25	28:16 29:2,10	transfer 12:10
t 2:4 53:2,2	20:6,10,14,19	29:17 31:1,19	12:15,17 13:1
55:3,3	20:20,23,23	32:11 35:11,22	13:2 39:16
take 8:19,21,22	21:3,5 22:22	37:12 41:20	40:3 41:14,16
8:23 18:21	22:24,24 23:5	42:7 43:2	42:5 43:19,21
35:11 37:9	24:8,16,22,25	44:13 45:16,18	46:9 48:13
51:18,18	25:3,6,12,12	47:23 48:12	transferred
taken 1:16 3:6	26:7 37:7 38:5	49:10,20 50:1	44:25
talk 17:13,13	38:8 39:5,7,9	50:22 51:17	transfers 41:25
talked 14:1	50:14	thinking 38:22	43:3
talking 7:24	testified 5:4	third 11:19	transformers
14:19 27:22	12:6 53:9	thought 28:13	12:13
33:18 36:18	testify 5:21	three 6:20	transmission
40:15 45:25	8:12,15	11:15 15:25	45:17
talks 22:12	testifying 5:3	37:18 51:16	transmitting
31:3	testimony 54:9	time 7:2,10,11	40:4 42:17
tangent 22:4	54:17 56:8	7:13 12:13	46:10 47:18
26:18 27:15	text 30:12,21	18:12,12 35:11	48:7 49:2
32:17 33:1,4,8	31:3	37:11 51:7	traveling 46:12
33:13,16,22,24	thank 6:13 9:2	52:5 54:18	47:19 48:9
34:2,5,9,12,16	11:4 52:7	timeframe 54:8	trial 1:3
34:21	theory 12:11	times 6:20	tried 42:7
taught 12:2,8,9	thereof 53:17	51:16	true 56:8
12:11,16,19,24	thickness 20:7	today 6:12 8:12	truth 53:9
teach 11:18	24:17	8:16 9:4 13:20	truthfully 8:12
teaching 11:25	thing 38:20	14:19 19:18,20	8:15
12:1,21,22	things 7:14 8:7	19:21,23	try 8:25 50:3
41:9	8:24 9:22	told 20:20 25:2	51:7
tech 12:23,24	11:15 12:12	25:8	trying 17:18
technical 6:10	15:3,14 18:2	took 6:6 24:21	23:13 24:7
tell 11:12 53:9	22:13	touching 30:14	48:13 51:15
ten 35:12	think 6:19 8:18	trademark 1:1	tryon 2:7
term 22:16	12:6 13:20	transcript 54:6	tuesday 1:18
41:21 44:14	18:3,24,25	54:19 56:5,8	turn 15:20,21
	20:16 27:1		17:16 20:11

[turning - zoom]

Page 16

turning 43:11 two 16:25 20:6 20:12,14,19 22:21 37:9,17 46:9 typewritten 53:12 typical 44:2 49:10 51:2 typically 11:17 12:2 41:14 51:12	use 23:21,21,24 25:3 38:11 50:24 used 13:7 29:15 38:9,13 39:7 41:12 44:15 54:19 uses 23:4 24:8 using 25:19 29:14 38:12,25 39:17 41:14,18 41:18 42:6,9 42:10,14,21 43:7,8,13,21 45:4 49:6 50:16 utilized 44:11	vourakis 1:23 3:9 53:3,24	witricity 1:7 5:16 6:24 7:3,8 7:15 54:4 55:1 56:1 word 23:25 38:18 words 24:10 work 12:5 52:2 works 35:12,14 wrapped 30:15 wrappers 9:22 written 21:10 wrong 10:13 26:24 wrote 23:12
u		w	
u.s. 1:12 understand 5:11,20 6:19 7:21 8:1,8 11:9 15:6 22:18 23:11,14 24:2 36:8 38:11,14 39:2 41:21 44:14 48:22 50:13 understanding 15:23 20:4,9 21:5 24:24 29:13 38:5 41:24 42:14 44:22 49:15 understood 27:10,14 29:8 united 1:1 university 12:21	v v 1:6 54:4 55:1 56:1 various 11:18 13:8 vehicles 12:18 verbal 8:8 verbatim 53:12 verify 54:9 veritext 54:14 54:23 veritext.com 54:15 versus 6:24 7:8 7:15 vicinity 49:14 video 53:7	wait 19:4 want 8:25 10:5 17:2,3,8 36:1 41:20 45:19 51:21 wasted 49:13 watkins 2:17 wave 46:12 47:20 48:9 wavelength 44:10,24 49:9 51:5,9 wavelengths 49:7 50:15,24 waves 43:22 way 17:23 25:3 25:6 29:15 45:5 48:15,16 we've 12:12 35:9 whereof 53:21 winding 30:22 wireless 12:14 12:17 13:2 28:7,18 39:16 41:13,15 42:4 51:4,6,8 wirelessly 40:3 witness 18:18 18:24 35:8,14 52:7 53:21 54:8,10,12,18	x x 4:1 y yeah 9:10 11:1 16:21 17:22 19:13 23:20 38:22 40:7 44:21 47:1,7,8 year 12:3 years 12:1 yep 11:6 46:18
			z
			zoom 1:15 2:1 2:13 3:6

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted

fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

Veritext Legal Solutions complies with all federal and State regulations with respect to the provision of court reporting services, and maintains its neutrality and independence regardless of relationship or the financial outcome of any litigation. Veritext requires adherence to the foregoing professional and ethical standards from all of its subcontractors in their independent contractor agreements.

Inquiries about Veritext Legal Solutions' confidentiality and security policies and practices should be directed to Veritext's Client Services Associates indicated on the cover of this document or at www.veritext.com.