

1 UNITED STATES PATENT AND TRADEMARK OFFICE

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

5 TEXAS INSTRUMENTS INCORPORATED,

6 Petitioner,

7 v.

8 PARKERVISION, INC.,

9 Patent Owner.
10 _____

11 IPR2024-00934

12 Patent No. 7,496,342 B2
13 _____

14
15 REMOTELY CONDUCTED VIDEOTAPED DEPOSITION OF

16 IAN GALTON, PHD

17 MONDAY, JULY 28, 2025

18 11:05 A.M. CDT

19 JOB NO.: 593123

20 PAGES: 1 - 50

21 REPORTED BY: KARISA EKENSEAIR, CCR RPR RMR RDR

22 CSR CA #14546

1 DEPOSITION OF IAN GALTON, PHD, CONDUCTED VIA
2 ZOOM VIDEOCONFERENCE.
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10 Pursuant to notice, before Karisa J.
11 Ekenseair, Certified Shorthand Reporter in and for
12 the States of Arkansas, Oklahoma, Missouri,
13 Illinois, Tennessee, Georgia, New Mexico,
14 Washington, and California; National Registered
15 Professional Reporter; National Registered Merit
16 Reporter; National Registered Diplomate Reporter;
17 Notary Public.
18
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ALSO PRESENT:

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T A B L E O F C O N T E N T S

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STYLE AND NUMBER..... 1

APPEARANCES..... 3

WITNESS: IAN GALTON, PHD

EXAMINATION BY MR. CHARKOW..... 7

CERTIFICATE OF REPORTER..... 49

EXHIBITS

(ATTACHED TO TRANSCRIPT)

NUMBER	DESCRIPTION	PAGE
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EXHIBIT 1	UNITED STATES PATENT NO. 7,496,342.....	10
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EXHIBIT 2	PRACTICAL RF DESIGN MANUAL, BATES NUMBER QCPV000102471 THROUGH 102493.....	21
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EXHIBIT 3	THIRD DECLARATION OF DR. IAN GALTON.....	22
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P R O C E E D I N G S

THE VIDEOGRAPHER: Here begins Media No. 1
in the deposition of Dr. Ian Galton, PhD, in the
matter of Texas Instruments, Incorporated versus
ParkerVision, Inc., in the United States Patent
and Trademark Office before the Patent Trial and
Appeal Board, IPR2024-00934.

Today's date is July 28, 2025 and the time
on the video monitor is 11:05 a.m. Central.

The remote videographer is Lucas Shaker
representing Planet Depos. All parties of this
video deposition are attending remotely. Would
counsel please voice-identify themselves and state
whom they represent starting with the taking
attorney.

MR. CHARKOW: Jason Charkow with Daignault
Iyer firm on behalf of ParkerVision.

MR. MAGEE: Robert Magee of Blue Peak Law
Group on behalf of Petitioner Texas Instruments.
With me today is also Josh Griswold and Rishi
Gupta.

THE VIDEOGRAPHER: Thank you, Counsel.

Transcript of Ian Galton, Ph.D.
Conducted on July 28, 2025

7

1	The court reporter today is Karisa	11:06:20
2	Ekenseair representing Planet Depos. The witness	11:06:21
3	will now be sworn.	11:06:24
4	THE REPORTER: My name is Karisa	11:06:26
5	Ekenseair. I am a California Certified Shorthand	
6	Reporter, License Number 14546.	
7	Would the witness please raise their right	
8	hand and be sworn.	
9	IAN GALTON, PHD	
10	of lawful age, being first duly sworn, deposes and	
11	says in reply to the questions propounded as	
12	follows:	
13	EXAMINATION	11:06:46
14	BY MR. CHARKOW:	11:06:46
15	Q Please state your full name for the	11:06:47
16	record.	11:06:50
17	A Ian Galton.	11:06:50
18	Q Is there any reason you can't give	11:06:51
19	truthful and accurate testimony sitting here	11:06:53
20	today?	11:06:55
21	A No.	11:06:56
22	Q Okay. You're familiar with the '342	11:06:56

1	patent, correct?	11:07:01
2	A I am.	11:07:01
3	Q And you understand that's the subject of	11:07:02
4	this IPR that's ending in '934?	11:07:03
5	A I do.	11:07:07
6	Q Okay. With regards to the '342 patent,	11:07:08
7	your opinion is that the total charge stored, the	11:07:12
8	claim language, total charge stored means that the	11:07:17
9	charge stored during one charging cycle, correct?	11:07:21
10	A No. That's not correct.	11:07:24
11	Q No. Okay. What -- what's your view of	11:07:25
12	what "a total charge stored" means?	11:07:31
13	A Total charge means the total charge on the	11:07:34
14	capacitor. But you didn't quote the whole	11:07:36
15	passage. It's "total charge stored therein," and	11:07:36
16	that has a didn't meaning.	11:07:45
17	Q Oh, okay. So let's -- let's do that then.	11:07:47
18	Strike that.	11:07:48
19	With regards to the '342 patent, your	11:07:48
20	opinion is that "total charge stored therein"	11:07:51
21	means the charge stored during one charging cycle,	11:07:54
22	correct?	11:07:58

1	A During the charging cycle immediately	11:07:58
2	following the -- sorry, during one -- during the	11:08:02
3	cycle immediately before the switch was open.	11:08:07
4	That's how I interpret the claim.	11:08:11
5	Q Okay. So your opinion with regards to the	11:08:14
6	'342 patent is that "total charge stored therein"	11:08:17
7	means the charge stored during the charging cycle	11:08:21
8	immediately before the switch was opened, correct?	11:08:33
9	A Yes. Although, if we interpret it your	11:08:36
10	way, or your expert's way, the findings still	11:08:40
11	hold.	11:08:43
12	Q Okay. Sir, I just want you to listen to	11:08:43
13	the questions and answer the questions. I	11:08:46
14	had nothing -- I didn't ask anything about anybody	11:08:49
15	else's interpretation. Just please listen to the	11:08:52
16	questions. Just tell me if I'm right or wrong.	11:08:54
17	Strike that.	11:08:57
18	So your opinion with regards to the '342	11:08:58
19	patent is that "total charge stored therein" in	11:09:00
20	the claim language means the charge stored during	11:09:03
21	the charging cycle immediately before the switch	11:09:06
22	was open; correct or incorrect?	11:09:08

1	A Correct.	11:09:10
2	Q Okay. And so your view is the word	11:09:10
3	-- strike that.	11:09:19
4	Your view is the term "total charge" in	11:09:19
5	the '342 patent claim 14 would mean something	11:09:27
6	different than "total charge" -- strike that.	11:09:32
7	Your view in terms of the total charge	11:09:34
8	stored, that language in claim 14 of the '342	11:09:38
9	patent would mean something -- it means something	11:09:42
10	different than total charge stored therein,	11:09:45
11	correct?	11:09:49
12	A Let me just -- sorry, Bobby.	11:09:49
13	Let me just go to the claim and just	11:09:53
14	refresh my memory exactly what it says.	11:09:55
15	Q Sure.	11:09:57
16	MR. CHARKOW: So why don't we mark as	11:09:59
17	Exhibit 1 to your deposition, we'll mark the '342	11:10:02
18	patent which is Exhibit 1001 in the IPR.	11:10:05
19	(Exhibit 1 marked for identification.)	11:10:12
20	A Okay. You said claim 14. Did you mean	11:10:13
21	claim 18?	11:10:16
22	Q Yeah. Hold on one second, sorry. I may	11:10:20

1	be getting cases confused.	11:10:27
2	A And, actually, I think you meant the --	11:10:40
3	the claims in question are -- start at 18 and go	11:10:43
4	to --	11:10:45
5	Q Yeah.	11:10:45
6	A -- 21.	11:10:45
7	Q Claim 18, yeah.	11:10:47
8	A But I still think you're wrong. I think	11:10:48
9	you mean claim 19.	11:10:50
10	Q Well, yeah, claim 18 is incorporated	11:10:53
11	by claim -- claim 18 is incorporated into claim 19	11:10:56
12	so the language is -- is found in claim 18, but	11:10:59
13	whatever so --	11:11:01
14	A It's actually not. Read it carefully.	11:11:02
15	Q Okay. So let's go for claim 19. All	11:11:08
16	right. So strike that.	11:11:11
17	All right. So your view in terms of the	11:11:39
18	total charge stored, the language in claim 19	11:11:42
19	through 21 of the '342 patent would mean something	11:11:48
20	different than "total charge stored therein,"	11:11:53
21	correct?	11:11:57
22	MR. MAGEE: Objection to form.	11:11:57

1	A Can you repeat the question? Because I --	11:11:59
2	I don't think you said what you meant to say.	11:12:03
3	If you want to take a break and think	11:12:25
4	about it, I'm fine with that.	11:12:30
5	Q I got it. Just give me a question [sic].	11:12:32
6	Okay. Yeah. I meant what I said, so	11:12:36
7	strike that.	11:12:57
8	So your view is that in claim 19 of the	11:12:57
9	'342 patent -- well, strike that.	11:13:02
10	Your view is that in claims 19 through 21	11:13:03
11	of the '342 patent, the term "total charge stored"	11:13:07
12	has a different meaning than "total charge stored	11:13:14
13	therein," correct?	11:13:18
14	MR. MAGEE: Objection to form.	11:13:19
15	A I do because I -- my understanding is	11:13:20
16	that, you know, every word in a claim has to mean	11:13:25
17	something. And if you can cross out "therein"	11:13:28
18	without changing the meaning, that violates that	11:13:30
19	principle. So -- so, yes that's how I interpreted	11:13:33
20	it.	11:13:36
21	Q Okay. With regards to DeMaw, you remember	11:13:36
22	DeMaw, right?	11:13:42

1	A Yes.	11:13:42
2	Q Okay. With regards to DeMaw in your	11:13:42
3	original declaration when you calculated the	11:13:45
4	discharge percentages, you did so by looking at	11:13:48
5	what came into the capacitor in one charging cycle	11:13:51
6	and what was discharged by the capacitor in the	11:13:55
7	subsequent charging cycle -- discharge cycle,	11:13:58
8	correct?	11:14:00
9	A That is correct. But in the -- in the	11:14:00
10	revised declaration I sent you, we also did it the	11:14:01
11	way your expert proposed and -- and got materially	11:14:06
12	the same results.	11:14:08
13	Q Sir, I -- I understand that. I'm just	11:14:09
14	trying to understand -- just if you can answer my	11:14:12
15	question. Again, I didn't ask you anything about	11:14:14
16	anybody else's declaration or anybody else's	11:14:17
17	position is. So let me ask the question again. I	11:14:20
18	just asked the question. It's a yes-or-no	11:14:22
19	question. So if you listen to the question, I	11:14:23
20	don't care that you did other stuff. I'm just	11:14:26
21	trying to understand what you did in your original	11:14:28
22	declaration, so please listen to the question.	11:14:31

1	Strike that.	11:14:33
2	With regards to the DeMaw in your original	11:14:33
3	declaration, when you calculated the discharge	11:14:35
4	percentages you did so by looking at what came	11:14:37
5	into the capacitor in one charging cycle and what	11:14:40
6	was discharged by the capacitor in the subsequent	11:14:44
7	discharging cycle, correct?	11:14:47
8	A Yes. That is what I did in my original	11:14:49
9	declaration.	11:14:54
10	Q Okay. And with regards to Macnally in	11:14:54
11	your original declaration when you calculated the	11:14:57
12	discharge percentages, you did so by looking at	11:14:59
13	what came into the capacitor in one charging cycle	11:15:02
14	and what was discharged by the capacitor in the	11:15:06
15	subsequent discharging cycle, correct?	11:15:10
16	A That is correct.	11:15:12
17	Q Okay. And for your original -- strike	11:15:12
18	that.	11:15:18
19	For your original simulation of DeMaw, you	11:15:18
20	did -- you recall you did not use the Siliconix	11:15:21
21	U430 JFET but instead you used an NJF instead,	11:15:26
22	correct?	11:15:34

1 A It's a Siliconix U430. That's what we 11:15:34
2 intended to use and we inadvertently used the JFET 11:15:37
3 supplied by LTspice. 11:15:43

4 Q Okay. And how is the NJF that you used in 11:15:45
5 your original simulation different than the 11:15:49
6 Siliconix U430? 11:15:51

7 A It has different transconductance and 11:15:55
8 different -- slightly different $V_{gs}(\text{off})$ values. 11:16:00
9 Just the parameters, the operating programs are 11:16:05
10 slightly different. 11:16:08

11 Q When you say the operating parameters of 11:16:09
12 the NJF that you used in your original 11:16:12
13 calculations are slightly different, what do you 11:16:15
14 mean? 11:16:17

15 A Well, I gave examples. So the 11:16:17
16 transconductance is different. The -- the plot 11:16:20
17 of -- of current as a function of both V_{gs} and 11:16:25
18 V_{ds} , those values are slightly different, things 11:16:30
19 like that. 11:16:32

20 Q When you say the plot of current as a 11:16:34
21 function of both V_{gs} and V_{ds} are different, what 11:16:39
22 do you mean? 11:16:42

1 A I mean, if you -- if you use the model to 11:16:42
2 plot the drain current as a function of V_{gs} , or if 11:16:46
3 you use the simulated -- simulation models to plot 11:16:51
4 the drain current versus V_{ds} , the plots will not 11:16:57
5 lie on top of each other. 11:17:04

6 Q What do you mean "the plots will not lie 11:17:06
7 on top of each other"? 11:17:08

8 A Well, you take the two different models, 11:17:09
9 you generate the plots that I just described and 11:17:12
10 you -- and you look at, for instance, the drain 11:17:14
11 current versus V_{gs} current provided by the -- the 11:17:18
12 two models, if the models were identical, those 11:17:23
13 plots would lie on top of each other; if they're 11:17:26
14 not identical, they will not lie on top of each 11:17:28
15 other. 11:17:32

16 Q Okay. So is it correct that if you took 11:17:33
17 your original simulation that you did using the 11:17:37
18 incorrect transistor model or incorrect JFET 11:17:42
19 and -- strike that. 11:17:49

20 Is it correct that if you took the plots 11:17:50
21 using your original simulations that used the 11:17:53
22 incorrect JFET model and you kind of put them on 11:17:55

1	top of the simulations that you did using the	11:17:58
2	correct JFET model which was the Siliconix U430,	11:18:03
3	the -- those two plots would not line up, correct?	11:18:10
4	A It's true that the plots would not line	11:18:14
5	up, but it's -- it wasn't an incorrect JFET model.	11:18:16
6	It was just different than suggested in -- in	11:18:20
7	DeMaw. But it functions -- it still was a JFET.	11:18:23
8	It still resulted in -- in the desired performance	11:18:26
9	of the mixer, desired in the sense that the mixer	11:18:31
10	performed well as a mixer.	11:18:34
11	It was inadvertent in that we intended to	11:18:36
12	use the -- the -- the brand and model name	11:18:39
13	suggested by DeMaw, but -- but it was not	11:18:43
14	incorrect to use the other one. And in fact, we	11:18:47
15	would have used that model that we did	11:18:49
16	intentionally, had DeMaw not mentioned what type	11:18:53
17	of JFET they were using in the diagram.	11:18:57
18	Q All right. So let me -- let me take out	11:18:59
19	the -- the incorrect statement and let me just ask	11:19:03
20	it clean so I can get a clean answer. Strike	11:19:05
21	that.	11:19:08
22	If you took the plot, plot that you	11:19:08

1 created using your original simulations that use 11:19:14
2 the JFET model, the generic JFET model that you 11:19:19
3 used, and you put them on top of the simulations 11:19:23
4 that you did using the Siliconix U430 model, those 11:19:25
5 two plots would not line up; correct or incorrect? 11:19:30

6 A They would be similar but they -- but they 11:19:34
7 would not line up perfectly. 11:19:36

8 Q Okay. And how did -- how does the -- 11:19:37
9 strike that. 11:19:47

10 How does the -- the generic JFET that you 11:19:47
11 used in your original simulations, how does the 11:19:54
12 operation of that differ than the Siliconix U430? 11:19:57

13 A I think you asked this and I've answered 11:20:07
14 it. I mean, you -- you -- it has different 11:20:09
15 transconductance, different Vgs values, a 11:20:12
16 different -- you know, slightly different current 11:20:16
17 versus Vgs, current versus Vds. These are things 11:20:20
18 that I've already answered. 11:20:22

19 Q Right. But how does it cause the 11:20:23
20 transistor to behave differently? 11:20:26

21 MR. MAGEE: Objection, form. 11:20:29

22 A I think I just answered that question. I 11:20:29

1	don't know how to answer it any differently.	11:20:31
2	Q Okay. Strike that.	11:20:33
3	When you were analyzing DeMaw, you used	11:20:40
4	conventional current to analyze charge and	11:20:43
5	discharge, correct?	11:20:46
6	MR. MAGEE: Objection to form.	11:20:50
7	A When you say we used conventional current,	11:20:51
8	can you say -- can you describe what you mean by	11:20:55
9	that?	11:20:56
10	Q Well, what do you understand conventional	11:20:56
11	current to be?	11:20:59
12	A Conventional current is the -- it's --	11:20:59
13	it's a measure of current which is positive when	11:21:03
14	it flows in the opposite direction of electron	11:21:06
15	current, and it's negative when it flows in the	11:21:12
16	direction of electron current.	11:21:14
17	Q Okay. And so when you're analyzing DeMaw,	11:21:16
18	you use conventional current to analyze the charge	11:21:19
19	and discharge, correct?	11:21:23
20	A Let me think. I mean, we didn't	11:21:28
21	explicitly use conventional or nonconventional.	11:21:33
22	We -- we basically analyzed the accumulation of	11:21:37

1	charge on the plates of the capacitor. And	11:21:44
2	so -- so that's -- whether you use conventional	11:21:47
3	current or nonconventional current, it doesn't	11:21:51
4	change -- it doesn't change your calculation of	11:21:53
5	how much charge is stored. Because, ultimately,	11:21:57
6	you just multiply by minus one twice in the -- in	11:22:01
7	the derivation and -- and the negatives cancel	11:22:06
8	out.	11:22:10
9	So -- so we didn't explicitly use either	11:22:10
10	conventional current or electron current in our	11:22:13
11	calculations. We just simply calculated how much	11:22:18
12	charge was accumulated.	11:22:21
13	Q All right.	11:22:24
14	MR. CHARKOW: I'm going to move to strike	11:22:24
15	as nonresponsive. I'm going to drop another	11:22:25
16	document into chat.	11:22:29
17	A I'm not seeing any other document.	11:22:48
18	Q It's -- it's a little big. It's coming.	11:22:50
19	A Okay. It just came. Give me a second.	11:22:52
20	Okay. Got it.	11:22:56
21	Q You've been provided Exhibit 2 to your	11:22:57
22	deposition?	11:23:00

1	(Exhibit 2 marked for identification.)	11:23:01
2	Q Exhibit 2 is a -- is a publication by	11:23:01
3	DeMaw. And this is Exhibit 20 -- strike that.	11:23:04
4	You've been provided with Exhibit 2 to	11:23:15
5	your deposition which is a publication by DeMaw	11:23:17
6	and it's Exhibit 1016 in the IPR.	11:23:21
7	Do you have that in front of you?	11:23:25
8	A I do, but would it be okay if I use my	11:23:26
9	version of this document, simply because	11:23:29
10	everything is rotated here?	11:23:32
11	Q Yeah. You can't because you've got to use	11:23:33
12	the version that I'm giving you. Just rotate it.	11:23:36
13	There should be a rotate button.	11:23:39
14	A I know how to do it, so go ahead.	11:23:41
15	Q Okay. I -- just for the record, I can't,	11:23:43
16	you know what I'm saying? Like I got to --	11:23:45
17	A It's fine. It's fine.	11:23:45
18	Q So can you turn to -- it's PDF page 8,	11:23:47
19	which I believe has the relevant Figure 6.7?	11:23:52
20	A Okay. Got it.	11:23:57
21	Q All right. So do you see on the right	11:23:58
22	side of -- DeMaw which is PDF page 8, there's a	11:24:17

1	Figure 6.7?	11:24:23
2	Do you see that?	11:24:25
3	A Yes.	11:24:25
4	Q Okay. And DeMaw discloses a 12-volt bias	11:24:25
5	current, right, in the lower right-hand corner?	11:24:29
6	A Yes.	11:24:32
7	Q Okay. And the 12 volts is sitting on the	11:24:33
8	capacitors of DeMaw, correct?	11:24:39
9	A The 12-volt bias does -- does set up	11:24:41
10	a -- a constant voltage on those -- on those	11:24:45
11	capacitors, yes, a bias voltage.	11:24:47
12	Q All right. So you can put that aside.	11:24:50
13	MR. CHARKOW: So let's go to your next	11:24:59
14	exhibit, your declaration, the third declaration.	11:25:02
15	A Are you going to send this to me?	11:25:08
16	Q Yes. Sorry, they're -- they're sometimes	11:25:10
17	big and they take a second to load. It's on its	11:25:12
18	way.	11:25:26
19	(Exhibit 3 marked for identification.)	11:25:26
20	Q All right. So you've been provided	11:25:27
21	Exhibit 3 to your deposition. Exhibit 3 to your	11:25:28
22	deposition is your third declaration and it bears	11:25:33

1	Exhibit 1060 in the IPR.	11:25:35
2	Let me know when you have that in front of	11:25:37
3	you.	11:25:40
4	A Got it.	11:25:40
5	Q Okay. Can you go to page -- paragraph 57	11:25:41
6	of your declaration, please?	11:25:44
7	A Hold on a second. Paragraph 57?	11:25:46
8	Q Yes, please.	11:25:49
9	A All right. One second. Do you happen to	11:25:51
10	know what page that's on?	11:25:53
11	Q It's PDF page 36.	11:25:54
12	A Okay. Got it.	11:26:01
13	Q So this paragraph talks about some	11:26:02
14	modifications that you made to your Python code	11:26:04
15	that you used to calculate discharge percentages,	11:26:07
16	correct?	11:26:11
17	A Yes.	11:26:11
18	Q Okay. So if you could look at the next	11:26:12
19	page, page 37, please.	11:26:17
20	A Okay.	11:26:19
21	Q And right before paragraph 58, there's a	11:26:20
22	snip across the page.	11:26:24

1	Do you see it, with some red highlights?	11:26:26
2	A Yes.	11:26:32
3	Q On the right side of that -- of the	11:26:32
4	bottom-most snip, the top of it says, "versus	11:26:34
5	total charge on cap."	11:26:38
6	Do you see that?	11:26:40
7	A On the right side, yes.	11:26:42
8	Q Okay. And then if you keep reading down	11:26:44
9	two more lines down, it says "bias removed."	11:26:47
10	Do you see that?	11:26:50
11	A Yes.	11:26:51
12	Q Okay. And where -- so when you ran your	11:26:51
13	new simulations to take into account -- well,	11:26:58
14	strike that.	11:27:01
15	When you ran your new simulations and came	11:27:02
16	up with new histogram plots to account for	11:27:04
17	Dr. Ricketts' position in terms of what "total	11:27:09
18	charge stored therein" means, you removed the bias	11:27:11
19	current from those capacitors when you performed	11:27:15
20	your calculations, correct?	11:27:18
21	A I did not remove the bias current.	11:27:19
22	Q Okay. What does "bias removed" means?	11:27:21

1	A It means we subtracted the bias voltage.	11:27:25
2	And -- and the reason we did that is explained in	11:27:29
3	detail in my third declaration.	11:27:31
4	But it's based on the -- the claim	11:27:33
5	language. The claim -- even if you don't agree	11:27:36
6	with the -- my argument about "therein," the claim	11:27:39
7	clearly talks about charging and discharging	11:27:41
8	because of the information signal. And the bias	11:27:45
9	is not part of the information signal, so -- so it	11:27:47
10	would be ridiculous to leave that in there. It	11:27:51
11	wouldn't be meaningful.	11:27:54
12	MR. CHARKOW: Move to strike as	11:27:55
13	nonresponsive.	11:27:57
14	Q Let me clean up the question. Strike	11:27:59
15	that.	11:28:00
16	In your new simulations that you performed	11:28:00
17	where it says "bias removed," that means you	11:28:08
18	removed the bias voltage that was sitting on those	11:28:11
19	capacitors, correct, in performing your	11:28:15
20	calculations of -- of discharge percentages,	11:28:17
21	correct?	11:28:20
22	A Yes.	11:28:20

1	Q Okay. In your new calculations of	11:28:22
2	discharge percentages when you were factoring in	11:29:25
3	Dr. Ricketts' view of what "total charge stored	11:29:27
4	therein" means, you only factored in the charge	11:29:31
5	that comes into the capacitors during charging	11:29:38
6	cycles, correct?	11:29:42

7	A No.	11:29:43
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8	Q Well, you didn't -- you didn't factor in	11:29:44
9	the charge that came in during, you know, the --	11:29:48
10	the voltage that was on the capacitors from the	11:29:49
11	bias -- well, strike that.	11:29:52

12	What are -- sorry, strike that.	11:29:54
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13	What other charge did you consider, other	11:30:02
14	than charge coming into the -- in during charging	11:30:08
15	cycles?	11:30:12

16	A So when -- whenever the capacitor is	11:30:12
17	connected to anything, it can -- it can charge or	11:30:18
18	discharge, depending on -- on the voltages that,	11:30:21
19	you know, that -- that change over time of the	11:30:25
20	voltages. And so it can both charge and discharge	11:30:30
21	when the switch is closed, and the same for -- for	11:30:34
22	all of the embodiments in the '342 patent. And it	11:30:38

1 can both charge and discharge when the switch is 11:30:41
2 open. 11:30:44

3 So for -- for every circuit that's shown 11:30:44
4 in -- in -- for the embodiments shown in '342 and 11:30:48
5 for all of the prior art, it's not true that 11:30:56
6 the -- that the capacitor only charges when the 11:31:01
7 switch is closed and only discharges when the 11:31:04
8 switch is open. 11:31:06

9 And so we looked when -- when evaluating 11:31:08
10 the charge at the total charge change during time 11:31:15
11 it was closed, and we looked at the total charge 11:31:18
12 change during the time that it was open, and we 11:31:21
13 based our calculations on that. And we -- the 11:31:24
14 bias current -- sorry, the bias voltage doesn't 11:31:27
15 represent a charge change. It just represents a 11:31:31
16 static charge which is always there and is not a 11:31:33
17 result of the information signal. So it -- it's 11:31:36
18 not part of the charge that's discussed in the 11:31:39
19 claims 19 through 21. 11:31:43

20 MR. CHARKOW: Move to strike as 11:31:46
21 nonresponsive. 11:31:48

22 Q So when you were doing your new 11:31:49

1	calculations -- and when I'm talking about new	11:31:55
2	calculations, I'm talking about the calculations	11:31:57
3	that took into account Dr. Ricketts' view of the	11:31:59
4	meaning of "total charge stored therein." Okay?	11:32:03
5	You understand that?	11:32:07
6	A Yes.	11:32:08
7	Q Okay. So when you were doing those new	11:32:08
8	calculations for Macnally and DeMaw, you looked at	11:32:10
9	the total time that the -- that the switch was	11:32:21
10	open -- sorry, strike that.	11:32:29
11	So when you were doing those new	11:32:34
12	calculations and analyzing DeMaw and Macnally, you	11:32:36
13	looked at periods of time when the switch was	11:32:42
14	open, correct?	11:32:53
15	A What do you mean "looked at the periods of	11:32:55
16	time when the switch was open"? That doesn't mean	11:32:57
17	anything to me.	11:33:00
18	Q You did your calculations for the entire	11:33:00
19	period of time that a switch was open, meaning	11:33:02
20	between -- between charging cycles. Well, strike	11:33:06
21	that.	11:33:14
22	You did your calculations the entire time	11:33:14

1 that a switch was open before it closed again, 11:33:17
2 correct? 11:33:23

3 A The question just doesn't make sense to 11:33:23
4 me. We looked at -- we looked at both when the 11:33:26
5 switch was closed and when the switch was open. 11:33:29
6 If we only looked at it when the switch was open, 11:33:31
7 then we would have had -- we would have had no 11:33:34
8 knowledge of how much charge was on the capacitor. 11:33:37
9 So we looked -- we looked at the capacitor over 11:33:39
10 the whole time period and that tells us how much 11:33:45
11 charge is stored on the capacitor at any given 11:33:49
12 time, and then we looked at how much was 11:33:52
13 discharged when the switch was open. 11:33:54

14 Q Okay. And with regards to your new 11:34:03
15 calculations, those new calculations -- well, 11:34:08
16 strike that. 11:34:13

17 So if you can go to paragraph 115 of your 11:34:13
18 report. 11:34:19

19 A Any idea what page that's on? 11:34:20

20 Q Hold on. 11:34:22

21 A All right. I'm there. 11:34:32

22 Q Okay. So I want to talk about this a 11:34:33

1	little more so I can understand it.	11:34:37
2	You say, "Below are histograms obtained by	11:34:39
3	simply post-processing the Macnally circuit	11:34:43
4	simulation described in Section VII of my	11:34:46
5	supplementary expert report with com.py modified	11:34:50
6	as shown above."	11:34:56
7	Do you see that?	11:34:56
8	A I do.	11:34:57
9	Q What -- what does that mean?	11:34:58
10	A It means what it says. I mean, can you be	11:35:00
11	more specific?	11:35:02
12	Q Yeah. I don't know what that means. Are	11:35:03
13	you using the same exact Python code that you used	11:35:08
14	for DeMaw? Are you talking about what you used	11:35:11
15	for DeMaw? I don't know what you're talking	11:35:13
16	about. Like, it --	11:35:16
17	A I mean, it seems self-explanatory to me,	11:35:17
18	but I'll try to explain it further.	11:35:21
19	So it's clearly not the same Python code	11:35:23
20	because it says here it's been modified. And your	11:35:25
21	next question might be, well, how did you modify	11:35:28
22	it? And -- and my answer would be, as shown above	11:35:31

1 in those snippets we were just discussing. 11:35:34

2 But the -- but the simulation data, we 11:35:37

3 used the original data. I mean, the -- we 11:35:39

4 didn't -- we didn't rerun the simulation. We just 11:35:44

5 reran the post-processing Python code with those 11:35:47

6 modifications. 11:35:53

7 Q Right. Okay. Is that true for DeMaw as 11:35:53

8 well, you just -- you offered the original 11:35:57

9 simulation data and you reran the data? 11:35:59

10 A Yes. 11:36:04

11 Q Okay. Okay. So for both DeMaw and 11:36:04

12 Macnally, you took what was in the original 11:36:10

13 simulations and you reran the data you got from 11:36:12

14 the original simulations and that's how you 11:36:17

15 created the new histograms? 11:36:19

16 A Yes. 11:36:22

17 Q With -- with regards to DeMaw when you say 11:36:23

18 you reran the original simulations, are you 11:36:29

19 talking about the ones that use the U430 JFET 11:36:32

20 model or the -- the NFJ model? 11:36:36

21 A It says as described in Section VII. 11:36:41

22 I -- we'd have -- we should look at that. I 11:36:45

1	suspect it's U430, but I just don't remember	11:36:48
2	offhand. If we -- if we want to look at Section	11:36:50
3	VII, we can -- we can evaluate that.	11:36:54
4	Q Sure. Go ahead.	11:36:57
5	A All right. Let's see, let me try to find	11:37:01
6	that. Give me a second. I got to -- without	11:37:11
7	having it in a Word document, it's kind of hard to	11:37:21
8	find the --	11:37:24
9	Q It should be searchable.	11:37:25
10	A I know. I tried to search on Section VII	11:37:28
11	and it didn't work. Give me a second.	11:37:30
12	Wait a minute. Something is messed up	11:37:33
13	here.	11:37:42
14	I think Section VII is -- is incorrect,	11:37:43
15	so --	11:37:47
16	Q You see my problem?	11:37:53
17	A Yeah, I do. That looks like a typo. Hold	11:37:54
18	on.	11:38:05
19	It's the new simulations that I ran in my	11:38:33
20	second declaration.	11:38:36
21	Q So would that include both models, both	11:38:37
22	JFET models or just the Siliconix?	11:38:42

1	A	Honestly, I don't remember. I -- I have	11:38:45
2		to -- I mean, if you want, we can take a break and	11:38:50
3		I can review it. But I don't remember offhand.	11:38:53
4		Let me look at one other thing.	11:38:57
5		That Section VII is definitely a typo.	11:38:59
6		Yeah. I don't recall offhand. I	11:39:16
7		can -- if you wanted me to take a break and -- and	11:39:18
8		look at it, I will. But I -- in real-time, I	11:39:20
9		don't have an answer for you.	11:39:23
10	Q	When you were doing the -- the new	11:39:25
11		calculations in your most recent declaration using	11:39:28
12		Dr. Ricketts' view of "total charge stored	11:39:33
13		therein," did you calculate the discharge	11:39:37
14		percentages using the discharge that was occurring	11:39:42
15		for the entire time between apertures?	11:39:48
16	A	I did.	11:39:52
17	Q	Okay. And for both Macnally and DeMaw,	11:39:53
18		correct?	11:39:59
19	A	Yes.	11:39:59
20	Q	You've heard of the term "conventional	11:40:05
21		current," correct?	11:40:08
22	A	Yes.	11:40:08

1	Q And conventional current is taught in	11:40:08
2	engineering classes, correct?	11:40:13
3	A It is, yes.	11:40:15
4	Q And conventional current is a concept that	11:40:15
5	is discussed in the electronics industry, correct?	11:40:18
6	A I don't know what you mean by discussed in	11:40:20
7	the electronic industry, but it is known to	11:40:22
8	engineers because it -- it is taught in -- in	11:40:24
9	classes.	11:40:28
10	Q Right. But it -- but you know, people in	11:40:29
11	the -- circuit designers, for instance, that work	11:40:35
12	in industry, like, for various companies, they	11:40:38
13	know what conventional current is, right?	11:40:41
14	A Well, yeah, because they went to college	11:40:43
15	and learned about it in their classes, so yes.	11:40:46
16	Q And with regards to conventional current,	11:40:48
17	current flows from negative to positive, correct?	11:40:51
18	A By convention, and -- conventional current	11:40:55
19	is -- is defined that way. But in real life in	11:41:01
20	physics, current is the flow of electrons and	11:41:05
21	electrons flow from negative to positive.	11:41:09
22	MR. CHARKOW: I'm going to move to strike	11:41:12

1 as nonresponsive. 11:41:13

2 Q Please listen to the question. I didn't 11:41:14

3 ask anything about electrons. I asked about 11:41:17

4 conventional current. So please listen to the 11:41:19

5 question. Strike that. 11:41:19

6 With regards to conventional current, 11:41:22

7 current flows from positive to negative; is that 11:41:25

8 correct or incorrect? 11:41:27

9 A I mean, conventional current is defined 11:41:28

10 that way, but -- but it's -- it's -- it has no 11:41:31

11 physical meaning. It's just, there's -- there's 11:41:35

12 essentially a sign error that's there for 11:41:37

13 historical reasons like we talked about in the 11:41:40

14 last deposition. And it doesn't matter what sign 11:41:43

15 you choose for your current when you're doing your 11:41:47

16 calculations as long as you're consistent. 11:41:48

17 Because the sign only matters for a thing called 11:41:51

18 Kirchhoff's current law. 11:41:54

19 And as a result of that, it simply -- when 11:41:55

20 you're analyzing a circuit, you got a set of 11:41:58

21 equations. And the sign error simply changes the 11:42:01

22 sign of the equation, every term in the equation, 11:42:05

1 so it doesn't change the meaning. 11:42:07

2 So it's -- it's a meaningless convention 11:42:09

3 and as long as you stick with either conventional 11:42:13

4 current or electron current, it -- it doesn't 11:42:16

5 matter. But -- but the bottom line is, current is 11:42:18

6 actually the flow of electrons and the flow of 11:42:22

7 electrons goes in the opposite direction of 11:42:25

8 conventional current. 11:42:28

9 Q Okay. With regards to conventional 11:42:29

10 current it's defined as -- as current flowing from 11:42:31

11 negative to positive; is that a correct statement 11:42:35

12 or incorrect statement? 11:42:37

13 A Conventional current is -- is defined as 11:42:39

14 flowing from negative to positive -- from positive 11:42:41

15 to negative. 11:42:44

16 Q Okay. And with regards to conventional 11:42:45

17 current, charge is flowing from higher potential 11:42:49

18 to a lower potential, correct? 11:42:52

19 A No, that is not correct. 11:42:55

20 Q Okay. With regards to conventional 11:42:57

21 current, positive charge is flowing from a higher 11:43:03

22 potential to a lower potential, correct? 11:43:06

1 A There are no positive charges so it 11:43:08
2 doesn't -- that doesn't mean anything. 11:43:09

3 Q All right. So you've never heard in your 11:43:10
4 whole career in many decades that conventional 11:43:14
5 current charge flows from a higher potential to a 11:43:17
6 lower potential? You've never, never heard that? 11:43:20

7 A If the charge is -- if the charge is 11:43:22
8 electrons, which they are, no, I've never heard it 11:43:25
9 because it's wrong. It's -- no matter how you 11:43:28
10 slice it, the charge carriers, which are 11:43:31
11 electrons, flow from negative to positive. 11:43:34

12 So and you -- and you're saying, well, it 11:43:35
13 was in textbooks and stuff. Well, when I was a 11:43:37
14 kid I learned about American Indians and -- and it 11:43:41
15 was -- they were called that, they were called 11:43:45
16 American Indians at the time simply because 11:43:47
17 Christopher Columbus made a mistake and nobody 11:43:50
18 believed American Indians were actually from the 11:43:55
19 Indies. So -- so, you know, the mistake became a 11:43:58
20 convention, at least for a while, but the 11:44:01
21 convention doesn't change reality. 11:44:04

22 And the reality is the charge carriers are 11:44:06

1	negative, they're electrons. And negative charges	11:44:09
2	flow from low potential to high potential.	11:44:13
3	MR. CHARKOW: Move to strike as	11:44:16
4	nonresponsive.	11:44:18
5	Q With regards to conventional current,	11:44:19
6	current flows from a higher potential to lower	11:44:21
7	potential, correct?	11:44:24
8	A Say that one more item.	11:44:24
9	Q With regard to conventional current,	11:44:30
10	current flows from a higher potential to a lower	11:44:32
11	potential, correct?	11:44:34
12	A Conventional current is defined to flow	11:44:35
13	from a higher potential to a lower potential.	11:44:37
14	Q Okay. And in circuits, capital "I" stands	11:44:40
15	for "current," correct?	11:44:44
16	A It can.	11:44:45
17	MR. MAGEE: Objection, form.	11:44:46
18	A It can also stand for an inductor. I	11:44:47
19	mean, it -- it can be a bunch of things.	11:44:50
20	Q Okay. In circuit -- well, just tell me if	11:44:52
21	it's correct or incorrect. Well, strike that.	11:44:56
22	In circuits, capital "I" or a lowercase	11:44:58

1	"i" can stand for "current," correct?	11:45:01
2	A Yes.	11:45:04
3	Q Okay. And -- and capital "I" or lowercase	11:45:04
4	"i" refers to conventional current when it stands	11:45:09
5	for "current," correct?	11:45:13
6	A Not necessarily, but -- but that's often	11:45:14
7	the case.	11:45:16
8	Q Okay. In a circuit diagram, if you see a	11:45:17
9	symbol "I," a positive "I" with an arrow, the	11:45:20
10	arrow is pointing in the direction of conventional	11:45:24
11	current flow, correct?	11:45:26
12	A That's usually the case, but it doesn't	11:45:27
13	have to be that way always.	11:45:29
14	Q Okay. You're familiar with Ohm's Law,	11:45:31
15	correct?	11:45:35
16	A Yes.	11:45:35
17	Q Ohm's Law is a fundamental principle of	11:45:35
18	circuit analysis, right?	11:45:38
19	A Yes.	11:45:39
20	Q And the current "I", through a conductor	11:45:40
21	between two points is directly proportional to	11:45:49
22	voltage across the two points, correct?	11:45:54

1	A Yes. If the conductor has resistance,	11:45:55
2	that is true.	11:46:00
3	Q And the formula for Ohm's Law is voltage	11:46:01
4	equals current, "I", times resistance, "R,"	11:46:05
5	correct?	11:46:08
6	A Yes.	11:46:08
7	Q All right. And you're also familiar with	11:46:09
8	Kirchhoff's Current Law, correct?	11:46:13
9	A Yes.	11:46:15
10	Q Kirchhoff's Current Law states that sum of	11:46:15
11	currents entering a node equals the sum of	11:46:17
12	currents leaving it, correct?	11:46:21
13	A Yes.	11:46:22
14	Q And the formula for power is voltage "V"	11:46:22
15	times current "I," correct?	11:46:25
16	A Yes.	11:46:27
17	Q So the formula is "P" equals "I" times	11:46:27
18	"V," correct?	11:46:31
19	A Yes.	11:46:31
20	Q All right. And power is energy per unit	11:46:31
21	time, correct?	11:46:38
22	A Yes.	11:46:39

1	Q Okay. And power is the rate of -- the	11:46:40
2	rate at which energy is transferred through a	11:46:46
3	circuit, correct?	11:46:50
4	MR. MAGEE: Objection to form.	11:46:51
5	A Say that one more time.	11:46:53
6	Q Let me just grab it from the realtime.	11:46:54
7	Strike that.	11:47:01
8	Power is the rate at which energy is	11:47:02
9	transferred through a circuit?	11:47:04
10	MR. MAGEE: Objection to form.	11:47:06
11	A That's kind of a meaningless question. I	11:47:07
12	mean, it's power of what? I mean, power -- you	11:47:11
13	have to talk about power dissipated by a resistor	11:47:12
14	or power converted to radio waves. I mean,	11:47:17
15	you -- and even "transfer" doesn't mean anything	11:47:23
16	in this context.	11:47:26
17	So if you tighten the question, I'll be	11:47:27
18	happy to give you a specific answer.	11:47:30
19	Q Okay. When one applies Ohm's Law in	11:47:56
20	circuit analysis, the current "I" refers to	11:47:59
21	conventional current, correct?	11:48:01
22	MR. MAGEE: Objection to form.	11:48:03

1	A	So when you say "V" equals "IR" which is	11:48:05
2		Ohm's Law, then yes, that -- that generally refers	11:48:10
3		to conventional current.	11:48:15
4	Q	Okay. And when one applies Kirchhoff's	11:48:17
5		law in circuit analysis, the current "I" is	11:48:20
6		understood to mean conventional current, correct?	11:48:23
7	A	No.	11:48:26
8	Q	Okay. Textbooks in the field talk about	11:48:26
9		conventional current, correct?	11:48:29
10	A	Yes.	11:48:31
11	Q	All right.	11:48:31
12	MR. CHARKOW:	Let's take a break. I think	11:48:33
13		I'm almost done.	11:48:35
14	THE VIDEOGRAPHER:	We are going off the	11:48:37
15		record. The time is 11:48 a.m.	11:48:38
16		(Whereupon a break was had.)	11:48:41
17	THE VIDEOGRAPHER:	We are back on the	12:01:59
18		record. The time is 12:02 p.m.	12:02:05
19	BY MR. CHARKOW:		12:02:07
20	Q	All right. You want to make a correction	12:02:08
21		you said or clarification?	12:02:11
22	A	Yeah. You asked me about paragraphs --	12:02:13

1	paragraph 115 of my third declaration and you	12:02:15
2	asked me which circuit we simulated. And I read	12:02:17
3	Section VII and I said, oops, that -- that's a	12:02:21
4	misprint. I was wrong about that. It's Section	12:02:25
5	VII of my supplementary expert declaration. So	12:02:28
6	and then also, the captions of the figures show	12:02:32
7	specifically which circuit, Macnally Sim. Fig.	12:02:39
8	1.1.	12:02:45
9	(Exhibit 4 marked for identification.)	12:02:45
10	Q All right. So I've provided you with -- I	12:02:45
11	just dropped in the chat a snippet of your prior	12:02:48
12	deposition that occurred last week. You just open	12:02:53
13	that up?	12:02:55
14	A Sure. Got it.	12:02:56
15	Q And if you go down to -- so you see this	12:02:58
16	is from your deposition of July 16th, 2025, right?	12:03:03
17	A Yeah.	12:03:09
18	Q Okay. And if you go down to the second	12:03:10
19	page, which is page 35 at the end, so 35 line 18.	12:03:12
20	A Okay.	12:03:17
21	Q Okay. I asked you: When one applies	12:03:18
22	Kirchhoff's Current Law in current" -- "circuit	12:03:22

1	analysis, the current is understood to mean	12:03:26
2	conventional current, correct, the 'I'?"	12:03:27
3	You said, "Generally, but -- but it	12:03:29
4	doesn't matter."	12:03:31
5	And then you went on to give a more	12:03:31
6	fulsome explanation.	12:03:33
7	Was that truthful testimony?	12:03:34
8	A Yes.	12:03:37
9	Q Okay. So when one applies Kirchhoff's	12:03:37
10	current law in current analysis, the current is	12:03:41
11	generally understood to mean conventional current,	12:03:45
12	correct?	12:03:48
13	A Not exactly. I mean, it's -- more often	12:03:48
14	than not, circuit designers when using a	12:03:53
15	definition of current, they use conventional	12:03:58
16	current because that's -- that's, you know, fairly	12:04:00
17	common, but it doesn't matter.	12:04:03
18	And so -- so you can't -- I mean, you can	12:04:06
19	use Kirchhoff's Current Law with either	12:04:09
20	conventional current as a definition or electron	12:04:13
21	current as a definition. It -- it simply doesn't	12:04:16
22	matter.	12:04:19

1	So more often than not, if you -- if you	12:04:20
2	watch somebody deriving a result based on	12:04:22
3	conventional current, I mean, based on -- sorry.	12:04:26
4	Let me -- let me say that again.	12:04:30
5	More often than not, if you look at	12:04:32
6	somebody's who's analyzing a circuit using	12:04:34
7	Kirchhoff's Current Law, they'll use conventional	12:04:38
8	current, but they could just as easily and just as	12:04:40
9	usefully use electron current. It simply doesn't	12:04:44
10	matter because all you're doing -- Kirchhoff's	12:04:49
11	Current Law creates an equation. An -- an	12:04:52
12	equation has the same meaning whether you multiply	12:04:55
13	both sides by minus one or by one, so -- so it	12:04:57
14	simply doesn't matter. So this -- this answer is	12:05:02
15	not inconsistent with the answer I gave you a few	12:05:04
16	minutes ago.	12:05:07
17	MR. CHARKOW: Move to strike as	12:05:07
18	nonresponsive.	12:05:09
19	Q When one applies Kirchhoff's Current Law	12:05:10
20	in circuit analysis to current, "I", the letter	12:05:14
21	"I" is understood to mean "conventional current";	12:05:16
22	correct or incorrect?	12:05:19

1	A It's neither correct or incorrect. It's	12:05:20
2	not necessarily. It -- it -- it can be used	12:05:24
3	either way so it simply doesn't matter.	12:05:25
4	Q It's generally correct, right?	12:05:28
5	MR. MAGEE: Objection to form.	12:05:29
6	A Yeah. I don't know what you mean by -- I	12:05:30
7	mean --	12:05:31
8	Q Sir, I put your deposition in front of you	12:05:31
9	because I don't want you to --	12:05:35
10	A If you let me answer the question, I will.	12:05:36
11	Q Strike that. I'm withdrawing my question.	12:05:38
12	Let me ask you a question.	12:05:40
13	Did you lie under oath --	12:05:41
14	A No.	12:05:41
15	Q -- in a previous deposition? No?	12:05:42
16	MR. MAGEE: Objection to form.	12:05:45
17	Q So -- so look at the deposition, okay.	12:05:46
18	The question that I asked is: When one applies	12:05:47
19	Kirchhoff's Current Law in circuit analysis, the	12:05:51
20	circuit is understood to mean conventional	12:05:54
21	current, correct, the "I", in quotes.	
22	And you said, Answer: "Generally, but --	

1 but it doesn't matter."

2 But you did say "generally." That was
3 you -- your words, right?

4 A Right. Are you ready to let me answer?

12:06:06

5 Q Did I read that right? Did I -- did I get
6 that right from what I read so far?

12:06:07

12:06:09

7 A Yes.

12:06:11

8 Q Okay.

12:06:12

9 A Well, hold -- no, let me back up.

12:06:13

10 You -- what you -- I used the word

12:06:15

11 "generally." But what we're differing on is I

12:06:17

12 think the meaning of generally in this context.

12:06:21

13 What I mean by generally is, more often than not.

12:06:24

14 However, if you -- if you simply look at

12:06:26

15 an analysis that involves Kirchhoff's Current

12:06:29

16 Law, it could be electron current; it could be

12:06:32

17 conventional current. It simply doesn't matter.

12:06:34

18 So more often than not, which is what I

12:06:37

19 meant by "generally," you know, people will use

12:06:40

20 conventional current out of habit but not always.

12:06:43

21 And it's not -- it's not necessary. It doesn't

12:06:45

22 change the results either way.

12:06:48

1 Q When one applies Kirchhoff's Current Law
2 in circuit analysis, the current is more often
3 than not understood to mean conventional current,
4 correct?

12:06:50

12:06:53

12:06:57

12:07:02

5 A Yes.

12:07:02

6 Q Okay.

12:07:02

7 MR. CHARKOW: No further questions at this
8 time.

12:07:02

12:07:04

9 MR. MAGEE: Sorry. Give me one second.

12:07:04

10 We have no questions, so we'll go ahead
11 and read and sign.

12:07:33

12:07:35

12 THE VIDEOGRAPHER: Anything else before I
13 close us out, Counsel?

12:07:37

12:07:39

14 MR. CHARKOW: Could I -- could I get a --
15 we'll go -- we can go off the record, sorry.

12:07:40

12:07:43

16 THE VIDEOGRAPHER: This marks the end of
17 the deposition of Dr. Ian Galton, PhD.

12:07:45

12:07:46

18 We are going off the record.

12:07:49

19 The time is 12:07 p.m. Central.

12:07:50

20 (Whereupon the proceedings were concluded at

21 12:07 p.m. CST.)
22

1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

2
3 I, Karisa Ekenseair, Certified Reporter and
4 Notary Public within and for the State of Arkansas
5 do hereby certify:

6
7 That IAN GALTON, PHD, the witness whose
8 deposition is hereinbefore set forth, was duly
9 sworn by me before the commencement of such
10 deposition and that such deposition was taken
11 before me and is a true record of the testimony
12 given by such witness.

13 I further certify that the adverse party,
14 Petitioner was represented by counsel at
15 the deposition.

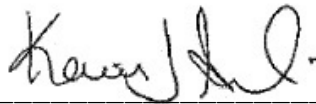
16 I further certify that the deposition of
17 IAN GALTON, PHD, occurred virtually on
18 July 28, 2025, commencing at 11:05 A.M. CDT to
19 12:07 P.M. CDT.

20 I further certify the inspection, reading and
21 signing of said deposition was not waived on the
22 record by agreement of all parties.

1 I further certify that I am not related to any
2 of the parties to this action by blood
3 or marriage, I am not employed by or an attorney
4 to any of the parties to this action, and that I
5 am in no way interested, financially or otherwise,
6 in the outcome of this matter.

7
8 IN WITNESS WHEREOF, I have hereunto set my hand
9 and affixed my notarial seal this 28th day of
10 July, 2025.

11
12 My commission expires: 6-18-2028
13

14 
15 _____

16 Karisa Ekenseair, CCR, RPR RMR RDR LS#802

17 Notary Public in and for

18 Pulaski County, Arkansas

19 Commission No. 12704567
20
21
22

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Conducted on July 28, 2025

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