08:17:24

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

- - -

MICROCHIP TECHNOLOGY INCORPORATED,	:	C.A. No. 17-1194
Plaintiff,	:	
vs.	:	
APTIV SERVICES US, LLC,	:	
Defendant.	:	

- - -

TRANSCRIPT OF PROCEEDINGS

TESTIMONY

VOLUME 3

- - -

Date: Friday, April 8, 2022

Time: 9 o'clock a.m.

Place: J. Caleb Boggs Federal Building
844 N. King Street
Courtroom 6B
Wilmington, Delaware 19801

Before: HONORABLE JOSHUA D. WOLSON, JUDGE

Reporter: Rose A. Tamburri, RPR, CM, CRR
Notary Public of Delaware

- - -

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(Whereupon, the Court commenced proceedings at 9 o'clock a.m.) 08:19:09 08:19:13

THE COURT CLERK: All rise. The Honorable Joshua D. Wolson presiding. 08:19:17 08:19:21

THE COURT: All right. Good morning, everybody. 08:19:26 08:57:07

MR. SLAYDEN: Good morning. 08:57:09

MS. DURIE: Good morning. 08:57:10

THE COURT: Have a seat, please. All right. 08:57:11 08:57:14

We got the jury instructions that everybody sent last night. Thank you. We are working through the changes you saw. I will try to incorporate them into our draft and I will get you something by the end of the day so you can look at them over the weekend. 08:57:16 08:57:17 08:57:20 08:57:24 08:57:28 08:57:31

MS. DURIE: And I just want to be clear that there is a dispute between the parties about the changes. 08:57:33 08:57:34 08:57:36

THE COURT: Yes, I saw that there was a draft. 08:57:37 08:57:38

MS. DURIE: Perfect. 08:57:39

THE COURT: And then I guess you accepted -- one side made changes, the other 08:57:40 08:57:42

side didn't accept all the changes and made their own changes. I didn't think that meant you had agreed to their changes. 08:57:46 08:57:48 08:57:50

MS. DURIE: Perfect. We just wanted to get it in because we knew you were waiting for it. 08:57:51 08:57:52 08:57:55

THE COURT: Understood. I think we understand the state of play. 08:57:56 08:57:57

MS. DURIE: Perfect. 08:57:59

THE COURT: You know, you'll see what we give you, and obviously to the extent of what we issue. I don't think it will be amongst the confusion, but if it is, you'll let us know. 08:58:00 08:58:01 08:58:05 08:58:08 08:58:10

MS. DURIE: Yes. Thank you. Very, very much appreciate it, getting the heads-up. 08:58:11 08:58:11 08:58:15

THE COURT: Yes. Okay. All right. I think that's it. I didn't hear anything else in terms of issues we need to take up; right? 08:58:15 08:58:20 08:58:23 08:58:25

MR. SLAYDEN: No, Your Honor. 08:58:26

THE COURT: All right. Let's bring the jury in and we'll get Mr. Obolsky 08:58:27 08:58:28

back up here.

(Whereupon, the jury entered the courtroom.)

THE COURT: All right.

Good morning, everybody. I am impressed with your promptness. I appreciate it. It's not always the case with juries, so you are in good standing.

All right. So we're going to resume this morning with Mr. Obolsky. I'm sorry, you can all be seated. You can resume Mr. Obolsky's cross-examination, so Mr. Obolsky, if you will step up.

You understand you're still under oath?

THE WITNESS: Yes, I do.

THE COURT: All right.

Ms. Durie, you may proceed.

MS. DURIE: Thank you.

- - -

CROSS-EXAMINATION, CONTINUED

- - -

BY MS. DURIE:

Q. Mr. Obolsky, good morning.

A. Good morning. 08:59:46

Q. Now, yesterday we left off in December of 2014, and we were talking about Chrysler. And just by way of a refresher, Tecvox was one of Microchip's customers; right? 08:59:46 08:59:48 08:59:52 08:59:57 09:00:00

A. Yes, it was. 09:00:00

Q. An Tecvox had been pitching the Chrysler business with a Microchip chip; right? 09:00:03 09:00:06 09:00:09

A. Yes, it was. 09:00:10

Q. Okay. 09:00:12

That was the FlexConnect chip that did not have persistent USB; right? 09:00:12 09:00:14

A. Yes. 09:00:18

Q. And Tecvox had learned that it was losing the Chrysler business; right? 09:00:18 09:00:22

A. Yes. 09:00:24

Q. Okay. 09:00:25

MS. DURIE: Let me mark for identification TX-262. 09:00:27 09:00:31

(Whereupon, Trial Exhibit 262 was introduced.) 09:00:36 09:00:40

BY MS. DURIE: 09:00:47

Q. Exhibit 262 is an email amongst a number of individuals at Microchip regarding a Thursday Chrysler meeting; correct? 09:00:47 09:00:50 09:00:56

A. Let me look at it. 09:01:00

Q. Sure. 09:01:01

A. Yes. 09:01:04

MS. DURIE: We offer it. 09:01:06

MR. SLAYDEN: No objection. 09:01:07

THE COURT: Okay. So received. 09:01:07

MS. DURIE: And, Mr. Glass, if we can put up page 1, and start at the -- that's perfect. 09:01:11 09:01:13 09:01:18

BY MS. DURIE: 09:01:19

Q. Now, this is an email, we see, from Sal Canu; correct? 09:01:19 09:01:27

A. Yes, it is. 09:01:29

Q. And can you remind us who he is? 09:01:30

A. He is a salesman and applications engineer inside of Microchip. 09:01:31 09:01:33

Q. Perfect. 09:01:35

Let's take a look -- let's start at "Short-term" in the middle of the page. He is discussing Microchip's short-term position; right? 09:01:36 09:01:38 09:01:41 09:01:43

A. Yeah, where are we looking? 09:01:48
Q. Right there where it says, 09:01:51
"Short-term." 09:01:53
A. Okay. I got it. 09:01:53
Q. And if the monitor in front of you 09:01:54
is -- 09:01:56
A. Easier up here. 09:01:56
Q. Completely understand. 09:01:57
And he says, "We looked at 09:02:00
developing a solution for 1 upstream lane, 09:02:02
persistent USB data and we don't have a 09:02:06
solution. We wish we could provide a solution 09:02:08
but we don't have it." 09:02:10
That was true; right? 09:02:12
A. Yes. 09:02:13
Q. And then if we go a little bit 09:02:13
further down, he says, "We still think our 09:02:17
USB84604 solution is the best solution." 09:02:23
That was the FlexConnect solution; 09:02:28
right? 09:02:30
A. Yes. 09:02:30
Q. Okay. 09:02:31
Now, let's go up -- actually, I 09:02:32
take it back. 09:02:35

MS. DURIE: Let's go down, take that down and go to "Long-term" underneath there, if we can blow that up. Perfect. That's what we need. That's great. 09:02:39 09:02:40 09:02:43 09:02:47

BY MS. DURIE: 09:02:49

Q. So he says, "Long-term: We have Sparta in the product pipeline and will continue on that path. This is the solution that works with 2 upstream lanes." 09:02:49 09:02:53 09:02:55 09:02:58

So that's not a one-lane solution, that's a two-lane solution; right? 09:03:02 09:03:04

A. That's what it says, yes. 09:03:07

Q. Okay. 09:03:08

And then he says, "We will consider a solution for 1 upstream lane with persistent USB data but do not have a commitment for that now." 09:03:10 09:03:12 09:03:15 09:03:18

So 1 upstream lane with persistent USB data, that's what Chrysler was asking for? 09:03:21 09:03:24

A. Yes. 09:03:26

Q. That's what Tecvox didn't have? 09:03:27

A. Yes. 09:03:29

Q. Right? 09:03:29

And Dave Diovardi, who is he? 09:03:31

A. Dave Diovardi is a program manager at Chrysler. 09:03:34 09:03:39

Q. Okay. 09:03:39

MS. DURIE: Now, if we can go up, Mr. Glass, to the top of the email. It says, "Our position: Upper Management involvement." 09:03:40 09:03:42 09:03:48

Actually, can we go back down to "Long-term," I apologize. 09:03:52 09:03:55

BY MS. DURIE: 09:03:56

Q. It says, "(We can ask Dave Diovardi here - Is the Unwired solution certified with Apple?) Certification of this system would help make the case to Upper Management to put this solution in the pipeline." 09:03:56 09:03:59 09:04:01 09:04:03 09:04:06

So some of the folks at Microchip were trying to make the case with upper management about this 1 upstream lane with persistent USB data saying hey, guys, we need to do this; right? 09:04:08 09:04:11 09:04:13 09:04:15 09:04:19

A. Yes. It appears so. 09:04:20

Q. And one of the road blocks was that Microchip was worried that Apple wasn't ultimately going to certify this? 09:04:22 09:04:24 09:04:26

A. Yes. 09:04:29

Q. Okay. 09:04:29

And so now, let's go up to the 09:04:30

top. "Our position: Upper Management 09:04:33

involvement." 09:04:37

Now, upper management, that's you; 09:04:39

right? You're part of upper management? 09:04:41

A. Yes. 09:04:43

Q. Okay. 09:04:44

"Upper Management is aware of the 09:04:45

market, the requirements, and all solutions 09:04:47

proposed. More information is needed for them 09:04:49

to make any directional changes and this will 09:04:51

take time. A business case providing revenue 09:04:54

commitments/estimates would have to justify 09:04:56

investment." 09:04:59

Now, sir, you said yesterday in 09:05:01

your direct examination that Microchip always 09:05:02

does what its customers want; right? 09:05:05

A. Eventually, yes. 09:05:08

Q. Yeah, eventually. 09:05:10

You knew that this was something 09:05:12

that Tecvox wanted; right? 09:05:13

A. Yes. We became aware, yes. 09:05:16

Q. Yeah. And your response wasn't 09:05:19

absolutely, we'll get right on it; your response was yeah, we'll think about it and see if that's something we want to do? 09:05:21 09:05:23 09:05:25

A. That's the response here. 09:05:28

Q. Right. 09:05:30

A. I'm not copied on this message. 09:05:31

Q. Okay. 09:05:33

So the wall that Microchip ran into in this timeframe is that they didn't have a solution to be able, both, to have music at the same time as CarPlay in a single lane format, and you weren't sure it was worth the investment to come up with one? 09:05:33 09:05:35 09:05:39 09:05:43 09:05:45 09:05:47

A. At this point, we weren't sure we should do this chip, yes. 09:05:51 09:05:53

Q. Right. 09:05:56

MS. DURIE: Mr. Glass, if we could put up TX-36 in evidence. 09:05:57 09:05:59

BY MS. DURIE: 09:06:04

Q. TX-36 is an email exchange with you and Steve Sanghi. 09:06:06 09:06:10

So who is Steve Sanghi? 09:06:14

A. Steve Sanghi, at the time, was the CEO of Microchip. 09:06:15 09:06:17

Q. And there is a copy there to Ganesh Moorthy. Who was he? 09:06:18 09:06:23

A. Ganesh was my boss immediately and eventually has now become the CEO. 09:06:24 09:06:28

Q. Right. 09:06:30

So fair to say this is about as upper management as it gets; right? 09:06:31 09:06:32

A. That's fair. 09:06:34

Q. Okay. 09:06:35

Now, if we can start at the email that you sent, it's on the second page, and blow up this. 09:06:37 09:06:41 09:06:48

So you said -- this is part of what you wrote; right? 09:06:51 09:06:52

A. Yeah. 09:06:56

Q. And you're talking about a meeting that's going to happen with Tecvox; right? 09:06:56 09:06:58

And if we go down, there is a discussion here about Don Perkins. Who is Don? 09:07:05 09:07:07 09:07:09

A. Don was one of the marketing managers at the time. 09:07:10 09:07:14

Q. Okay. 09:07:14

MS. DURIE: And so let's go down, 09:07:14

the next page following up on your email, we can go to page 3. There we go. 09:07:16 09:07:21

BY MS. DURIE: 09:07:21

Q. And so in your summary of this, you say, "In my last meeting with Raj, he stated that he blames Microchip for his failure at Chrysler." 09:07:25 09:07:28 09:07:31 09:07:34

So this is the Tecvox guy saying he thinks it's Microchip's fault that he lost the Chrysler business; right? 09:07:36 09:07:37 09:07:39

A. That's what -- that is what he thought, I guess. 09:07:42 09:07:43

Q. Yeah. 09:07:44

And you say, "He was trying to make me feel guilty, and be more agreeable to supporting them. The reality is the market is evolving quickly. Our current solution is good, but does not solve all problems. We are planning to develop a next generation solution, in part based on Tecvox's feedback. In part in response to the Unwired solution, which we had dismissed when they were a small standalone company." 09:07:45 09:07:48 09:07:51 09:07:54 09:07:56 09:07:58 09:08:00 09:08:03 09:08:05 09:08:07

And that's true; right? 09:08:09

A. That is true. Unwired was struggling quite a bit at the time. 09:08:14 09:08:17

Q. Yeah. They were a small stand-alone company and so you dismissed their solution? 09:08:18 09:08:20

A. Yes. 09:08:24

Q. Okay. 09:08:26

MS. DURIE: Let's go to the first page. Great. And actually, can you just go back to the whole document for a second so we can see where we're going. 09:08:34 09:08:29 09:08:36 09:08:39

BY MS. DURIE: 09:08:41

Q. So at the top, this is your email to your CEO, to the guy who is going to become your CEO, and you are responding to this email thread; right? 09:08:41 09:08:43 09:08:46 09:08:48

A. Can you repeat your question? I was not quite following. 09:08:51 09:08:54

Q. Sure. 09:08:55

This email that you wrote at the top, you're reporting to your CEO and to the guy who is going to become your CEO about this email thread underneath that we were just looking at; right? 09:08:56 09:08:57 09:09:00 09:09:02 09:09:04

A. Yes. 09:09:06

Q. Okay. 09:09:06

And you say, "We left with actions relating to pricing and technology," and then let's look at the second one. "We have been working on the business case and technical details to provide a single connection solution similar to Unwired. We are still not sure the ROI" -- that's return on investment; right? 09:09:07 09:09:10 09:09:13 09:09:16 09:09:18 09:09:20 09:09:24 09:09:28

A. Yes. 09:09:28

Q. "We are still not sure the return on investment justifies this project, but are much more confident than when it was first proposed. This development would be about 1.5 to $2 million." And then you go on to say, "With limited resources." 09:09:29 09:09:31 09:09:34 09:09:37 09:09:40 09:09:45

Limited resources; I think I heard in opening that Microchip's R & D budget is $1.2 billion; is that right? 09:09:48 09:09:50 09:09:55

A. It is today, yes. 09:09:57

Q. Yeah. 09:09:58

A. It was not at this time. 09:09:59

Q. Right. 09:10:01

But if it is -- if it's 09:10:02

$1.2 billion today, presumably it was several hundred million dollars back then; right? 09:10:04 09:10:07

A. That's a fair estimate. 09:10:08

Q. Okay. 09:10:09

So "with limited resources, this project needs to return 15 to $20 million or will not be funded." 09:10:10 09:10:13 09:10:17

So at this point in time, January 6, 2015, Microchip had not yet made a decision whether it was willing to make an investment in order to come out with a one-lane persistent USB solution; fair? 09:10:19 09:10:21 09:10:23 09:10:25 09:10:28

A. Yes, that was the Sandia chip we have been talking about that was being analyzed, the business plan was being worked. 09:10:30 09:10:33 09:10:35

Q. Okay. 09:10:37

Now, at this point in time, combatting the Unwired threat was a key goal of your business unit; right? 09:10:38 09:10:41 09:10:44

A. In this context, I think it was a key to what Tecvox needed and responded to Chrysler. 09:10:49 09:10:51 09:10:58

MS. DURIE: Okay. Let me mark for identification Exhibit 272. 09:10:58 09:11:00

(Whereupon, Trial Exhibit 272 was introduced.)

BY MS. DURIE:

Q. Okay.

Exhibit 272 is an email from you to a number of individuals, including Mark Bohm, January 12th, 2015; right?

A. Hang on one second.

Q. Sure.

A. Yes.

MS. DURIE: We offer it.

MR. SLAYDEN: No objection.

THE COURT: All right. It will come in.

MS. DURIE: And we can start at the top of the first page.

BY MS. DURIE:

Q. There's an email from you, January 12th, 2015, "Updated Goals," and underneath that you say, "One bonus goal related to Unwired that was already in our plans. In yellow."

So these are corporate goals; right?

A. Hang on.
Yeah, these are division goals, yes.
Q. Now, is it right that the way Microchip worked, bonuses for employees in a particular group or division are tied to goals for that division or group for some period of time?
A. No, they are not.
Q. Okay.
So bonuses are completely unrelated to corporate performance?
A. Well, bonus is only a function of corporate high-line revenue and growth, period.
Q. Okay. Fair enough.
Now, let's take a look at the goals. I take it even if you don't have bonuses tied to them, you still care about meeting them?
A. We set a plan and we hope to meet that plan.
Q. Great.
MS. DURIE: Let's take a look at

the third page, Mr. Glass, and let's take a look at what the goals were. 09:12:49 09:12:52

BY MS. DURIE: 09:12:55

Q. So Q4, fiscal year 2015, January to March of 2015, Objectives and Key Results. 09:12:55 09:13:00

So this is a list of goals, and then you're highlighting the status of performance against those goals; right? 09:13:04 09:13:06 09:13:09

A. Yes. 09:13:12

Q. Okay. 09:13:12

And so green means complete, yellow means at risk, red means likely miss, blue is on track. 1(c) goal, initiate business and technical actions to combat the Unwired threat, and the status of that particular goal is yellow, which means it was seen as being at risk; right? 09:13:13 09:13:17 09:13:21 09:13:25 09:13:27 09:13:30 09:13:32

A. Yeah. It was being completed by the end of March. 09:13:35 09:13:37

Q. There was a risk that you would not succeed in your business and technical actions to combat the Unwired threat by the end of the quarter? 09:13:38 09:13:41 09:13:43 09:13:49

A. I'm sorry, by? 09:13:49

Q. The end of the quarter. 09:13:50
A. Yes. And that's what it's measuring. 09:13:51
Q. Right. So keep this date in mind. 09:13:54
Let's go back to the first page. 09:13:57
January 12th, 2015; did anything 09:13:59
else happen on January 12th, 2015, relevant to 09:14:09
this case? 09:14:12
A. I'm sorry? 09:14:13
Q. Did anything else happen on 09:14:14
January 12th, 2015, that is relevant to this 09:14:16
case? 09:14:19
A. I don't specifically remember, but... 09:14:20
Q. All right. Let's take a look. 09:14:23
MS. DURIE: TX-9 in evidence, 09:14:25
please. 09:14:28
BY MS. DURIE: 09:14:28
Q. January 12th, 2015, "Dear Mr. Voto," 09:14:29
here are our concerns. 09:14:38
A. Yes. 09:14:41
Q. So you sent the notice letter to 09:14:41
Delphi the same day that you sent around 09:14:44
internally that your goal of initiating 09:14:46
business and technical actions to combat the 09:14:48
Unwired threat was at risk; right? 09:14:51

A. It would appear so, yes. 09:14:56

Q. All right. 09:14:58

Now, Delphi responded to that 09:14:58

letter promptly; right? 09:15:00

A. I guess, as I understand it. 09:15:03

MS. DURIE: Let's take a look. 09:15:09

Mark for identification Exhibit 269. 09:15:11

(Whereupon, Trial Exhibit 269 was 09:15:13

introduced.) 09:15:16

BY MS. DURIE: 09:15:28

Q. Exhibit 269 is a fax, which is kind 09:15:28

of charming. It is a fax from 2015, and if we 09:15:31

take a look at the thing that was faxed, it's 09:15:36

a letter from Delphi to Microchip Technology 09:15:38

Incorporated responding to the January 12th 09:15:43

letter that we were just looking at; right? 09:15:45

A. Yes, it appears to be. 09:15:49

MS. DURIE: We offer 269. 09:15:50

MR. SLAYDEN: It's got a 09:15:57

limitation to it. 09:15:59

THE COURT: I'm sorry? 09:16:01

MR. SLAYDEN: Subject to a 09:16:02

limitation, I'll represent, giving the letter 09:16:02

to attorneys. 09:16:08

THE COURT: Okay. I'll receive it. And, ladies and gentlemen, you'll see the exhibit. You should not draw any inferences, one way or another, from the fact that there were also attorneys who received a copy of it, which you'll see on the letter. 09:16:09 09:16:13 09:16:17 09:16:19 09:16:22 09:16:23

MS. DURIE: Terrific. 09:16:25

Mr. Glass, if we could see 269, please, page 2. 09:16:27 09:16:31

BY MS. DURIE: 09:16:32

Q. This is the letter that Delphi faxed back dated January 30th, 2015, responding to the letter, and if we can go down, saying we don't intend to use any of your intellectual properties, we value our business relationship, et cetera; right? 09:16:33 09:16:35 09:16:41 09:16:44 09:16:47 09:16:48

A. Yes, that appears so. 09:16:52

Q. Okay. 09:16:53

And Microchip didn't respond to this letter from Delphi; right? 09:16:53 09:16:57

A. I don't know. I don't know what happened next. 09:16:59 09:17:01

Q. You don't know what happened next. All right. Well, let's take a look. 09:17:02 09:17:05

MS. DURIE: 275. 09:17:10

(Whereupon, Trial Exhibit 275 was 09:17:13

introduced.) 09:17:16

BY MS. DURIE: 09:17:16

Q. Exhibit 275, email from Mitch Obolsky 09:17:29

to Steve Sanghi, CEO, Ganesh Moorthy, 09:17:33

CEO-to-be, initial proposal for Tecvox; right? 09:17:38

A. Hang on. Yes. 09:17:41

Q. January 26, 2015? 09:17:45

A. Yes. 09:17:46

MS. DURIE: We offer 275. 09:17:47

MR. SLAYDEN: No objection, Your 09:17:49

Honor. 09:17:51

THE COURT: All right. It's 09:17:51

admitted. 09:17:52

MS. DURIE: Okay. So Exhibit 275, 09:17:55

page 1, if you can blow that up. Perfect. 09:17:57

Thank you. All right. 09:18:01

BY MS. DURIE: 09:18:03

Q. So this is an email from you, "The 09:18:03

attached slides are the heart of the 09:18:05

discussion with Tecvox. There have been about 09:18:07

20 hours of internal Microchip meetings in the 09:18:12

last two weeks, and many more are needed to 09:18:14

complete the product definition." 09:18:17

And then it goes on to say, "We 09:18:22

now believe it is technically feasible to 09:18:25

develop a solution that competes with 09:18:28

Unwired's and also can serve the European car 09:18:30

manufacturers whose needs differ slightly." 09:18:33

So now you had concluded that this 09:18:38

one-lane persistent USB solution was 09:18:44

technically feasible? 09:18:48

A. That's what it says. That is 09:18:51

correct. 09:18:54

Q. That, indeed, is what it says. 09:18:54

Now, you let your CEO know -- if 09:18:57

we can scroll down a little bit -- you got a 09:19:01

preliminary set of features, you've got a 09:19:06

development timeline, you've got product 09:19:09

costs. 09:19:11

Developing a chip takes a lot; 09:19:11

right? 09:19:13

A. Yes, it does. 09:19:14

Q. Yeah. 09:19:15

And you say, "It will likely take 09:19:15

until the end of March to fully define the 09:19:17

product and timeline," so you're not even 09:19:20

going to have a plan until the end of March, and likely two years or more to reach production if the business plan says we should proceed with this project. 09:19:23 09:19:25 09:19:27 09:19:29

That's what you told your CEO at the time; right? 09:19:31 09:19:34

A. Yes. That's what it says. 09:19:35

Q. Okay. 09:19:36

And ultimately you decided, at this point in time, to call the thing that you were developing a multi-host device controller; right? 09:19:40 09:19:43 09:19:46 09:19:52

A. I guess so. I don't -- I don't know that. 09:19:54 09:19:56

Q. Yeah. 09:19:57

A. I assume. 09:19:58

Q. It is after you've sent the notice letter to Aptiv/Delphi; right? Right? 09:19:59 09:20:01

A. Hang on one second. You said this is after? What's the date? I'm sorry. 09:20:09 09:20:11

Q. Yeah, this is after. January 26th; right? 09:20:13 09:20:15

A. Yes, yes. Sorry. 09:20:16

Q. You're thinking about how to counter 09:20:17

the threat posed by the Unwired/Delphi solution at this point in time; right? 09:20:20 09:20:24

A. Yes. 09:20:26

Q. And so you picked, for the product that you were starting to develop, the name that was in the patent that you had sent to Delphi; right? 09:20:27 09:20:31 09:20:33 09:20:37

A. If that's true, yes. 09:20:40

MS. DURIE: Let's take a look. Identification, Exhibit 273. 09:20:43 09:20:48

(Whereupon, Trial Exhibit 273 was offered.) 09:20:52 09:20:55

BY MS. DURIE: 09:21:03

Q. Exhibit 273, an email from David Sroka to Mark Bohm, among others, dated January 12th, 2015; right? 09:21:05 09:21:09 09:21:12

A. Yes. 09:21:17

MS. DURIE: We offer it. 09:21:17

MR. SLAYDEN: No objection, Your Honor. 09:21:19 09:21:20

THE COURT: All right. It is admitted. 09:21:20 09:21:21

MS. DURIE: And, Mr. Glass, if we can take a look at Exhibit 273, second full 09:21:23 09:21:25

paragraph, from Mr. Sroka. 09:21:29
BY MS. DURIE: 09:21:31
Q. Now, just to be clear -- 09:21:31
MS. DURIE: And if you can blow 09:21:33
that up, too. 09:21:35
BY MS. DURIE: 09:21:35
Q. So Mr. Sroka is the one we saw 09:21:37
yesterday who is, both, a marketing guy, but 09:21:39
also an engineer who was working on that 09:21:41
PowerPoint product definition set of slides 09:21:43
for the chip that Microchip was working on; 09:21:45
right? 09:21:47
A. Can you repeat that? I'm sorry, I 09:21:48
didn't follow the whole thing. 09:21:51
Q. Sure. 09:21:52
Yesterday we saw a PowerPoint 09:21:53
presentation, it had Mr. Sroka's name on it, 09:21:54
relating to the development of the Sandia 09:21:57
chip; right? That's the one-lane persistent 09:21:59
USB? 09:22:01
A. Yes, I think so. 09:22:02
Q. Okay. 09:22:04
And I think we confirmed, he is, 09:22:04
both, a marketing guy, but also an engineer; 09:22:07

right? 09:22:09

A. Yes. 09:22:09

Q. Okay. 09:22:09

And so Mr. Sroka, as the person 09:22:10

responsible for this project, says, "First we 09:22:14

are well positioned with USB84604," so 09:22:18

Microchip is still trying to sell that old 09:22:22

FlexConnect solution; right? 09:22:25

A. I don't know about old. It was brand 09:22:27

new at that time. 09:22:30

Q. All right. Fine. 09:22:30

Microchip was still trying to sell 09:22:31

the FlexConnect solution that it had already 09:22:33

developed; right? 09:22:36

A. Yes. 09:22:37

Q. Okay. 09:22:37

And he says, "but we lost against 09:22:39

Unwired at Chrysler, Ford, and GM. Chrysler 09:22:42

came to us very aggressively to look at doing 09:22:47

a spoofed device," and this spoofed device, 09:22:49

that's the Unwired solution? 09:22:53

A. Well, I mean, Unwired has a solution. 09:22:54

Q. Right. 09:22:56

A. Chrysler asked us for a solution. 09:22:57

Q. Right. 09:22:59

And then if we keep going, it 09:22:59

says, "This really kept us in the game and by 09:23:02

showing our experience in the area (product 09:23:05

brief) and legitimized our inputs and concerns 09:23:09

for both Sparta and MHDC," multi-host device 09:23:12

controller... "we use this name as it relates 09:23:15

to our patents"; right? 09:23:18

A. Yes, that's what it says. 09:23:21

Q. Now, in the event, Microchip didn't 09:23:23

actually use that name for very long, did it? 09:23:25

A. I'm sorry? 09:23:28

Q. In the event, Microchip did not use 09:23:29

that name for very long? 09:23:33

A. I'm not sure what that means, "in the 09:23:34

event." 09:23:36

Q. Sure. Let's take a look. 09:23:36

A. I'm not sure what those words mean. 09:23:38

MS. DURIE: Fair enough. I think 09:23:42

I can help to clarify that for you. 09:23:43

Exhibit 236 for identification. 09:23:46

(Whereupon, Trial Exhibit 236 was 09:23:48

introduced.) 09:23:50

BY MS. DURIE: 09:24:00

Q. So Exhibit 236 is a copy of a Microchip specification for USB4916. That's the Sandia chip; right? 09:24:00 09:24:04 09:24:09

A. Yes. That's one of the variants, yes. 09:24:12 09:24:14

MS. DURIE: We offer 236. 09:24:14

MR. SLAYDEN: No objection, Your Honor. 09:24:16 09:24:16

THE COURT: All right. It will be received. 09:24:18 09:24:18

MS. DURIE: Okay. 09:24:19

BY MS. DURIE: 09:24:21

Q. So now, before we were looking at a document back in 2015 when you were talking about calling the chip the multi-host device controller. Now we have the product spec sheet. 09:24:22 09:24:23 09:24:29 09:24:33 09:24:35

MS. DURIE: Actually, if you can go all the way to the bottom, Mr. Glass. Go all the way to the bottom. 09:24:36 09:24:37 09:24:39

BY MS. DURIE: 09:24:39

Q. And we see 2017; right? 09:24:42

A. Yeah, that looks like the date on this document. 09:24:47 09:24:48

Q. Right. 09:24:50

And if we go up to the top, we see 09:24:50

that it is now called the USB 2.0 Hi-Speed 09:24:52

Multi-Host Endpoint Reflector; right? 09:24:57

A. I guess. That's what it says, yeah. 09:25:03

Q. So you changed the name; right? 09:25:04

A. I don't know. 09:25:06

Q. Okay. 09:25:07

Fast forward to October of 2015. 09:25:08

So we're now roughly 10 months after that 09:25:12

letter that we saw notifying Delphi/Aptiv 09:25:16

about the patents; okay? 09:25:21

MS. DURIE: Mark for 09:25:24

identification Exhibit 270. 09:25:26

(Whereupon, Trial Exhibit 270 was 09:25:28

introduced.) 09:25:31

MS. DURIE: And let me also mark 09:25:45

271. 09:25:46

(Whereupon, Trial Exhibit 271 was 09:25:49

introduced.) 09:25:52

MS. DURIE: Okay. 09:26:05

BY MS. DURIE: 09:26:05

Q. So Exhibit 270, email from Keith 09:26:06

Barber at Microchip to you, copying some of 09:26:11

the other folks whose names we have seen, attaching what is referred to as the DDC minutes. 09:26:15 09:26:17 09:26:21

And 271, which is the attachment and the minutes of that meeting. 09:26:23 09:26:27

Do you see that? 09:26:30

A. Yes, I do. 09:26:33

MS. DURIE: We offer 270 and 271. 09:26:34

MR. SLAYDEN: No objection, Your Honor. 09:26:37 09:26:38

THE COURT: All right. They're received. 09:26:38 09:26:39

MS. DURIE: Mr. Glass, if we could go to 270, that's right, that's 270, and if we could then put up 271. So just leave it like that for the moment. That's perfect. 09:26:40 09:26:42 09:26:47 09:26:52

BY MS. DURIE: 09:26:54

Q. So this is reporting on a meeting that took place between Microchip and Delphi; right? 09:26:55 09:26:56 09:26:59

A. Yes, it appears to be. 09:27:01

Q. And this is a meeting that took place in October of 2015; right? 09:27:03 09:27:06

A. Yes, that's the date on there. 09:27:11

Q. It took place at Delphi, Auburn Hills, Michigan, near Detroit; right? 09:27:13 09:27:22

A. Yeah, at Delphi. I don't know the location at all. 09:27:23 09:27:25

Q. Okay. 09:27:26

And you were there; right? 09:27:26

A. Yes. I just don't know where. 09:27:26

Q. Totally fair. 09:27:30

So folks from Delphi, including Rob Voto, Mike Dreon; right? You recognize Mr. Dreon? 09:27:31 09:27:33 09:27:39

A. I think so. 09:27:39

Q. Do you remember he was at the meeting, too? 09:27:42 09:27:43

A. I wouldn't remember, but I believe you, yes. 09:27:43 09:27:46

Q. All right. 09:27:46

And so you were there along with some of the other folks from Microchip; right? 09:27:47 09:27:49

A. Yes. 09:27:51

Q. And Microchip took notes of what the Delphi folks said and what the Microchip folks said; right? 09:27:52 09:27:56 09:27:59

A. Do we know that those are Microchip 09:28:00

notes? I don't know who took the notes. I can see that they were taken, but I don't know who took the notes. 09:28:02 09:28:04 09:28:09

Q. All right. 09:28:10

Well, notes were taken of the meeting in the form of minutes that were then attached to an email and circulated internally at Microchip? 09:28:11 09:28:13 09:28:18 09:28:18

A. Yes, they were forwarded. 09:28:18

Q. Sure. 09:28:20

You are not aware of any email within Microchip where anyone said hey, wait a minute, that's not what we talked about; right? 09:28:20 09:28:23 09:28:25 09:28:27

A. I don't know. 09:28:28

Q. I'm sure if there is one, we'll see it. 09:28:28 09:28:28

So let's take a look at the minutes of the meeting. Start at the top there. And that's actually perfect. We can just have it there, yeah. 09:28:31 09:28:32 09:28:34 09:28:36

"Rob does not consider" -- that's Rob Voto from Delphi; right? 09:28:38 09:28:39

A. Yes. 09:28:41

Q. Okay. 09:28:41

"Rob does not consider Delphi" -- 09:28:42

DDC, that's Delphi; right? 09:28:45

A. Yes, Delphi, Delphi, yes. 09:28:47

Q. Okay. 09:28:50

"Rob does not consider DDC as a 09:28:51

competent competitor to Microchip because 09:28:53

they're not trying to sell ASIC to the open 09:28:56

market." 09:28:59

So what Rob Voto from Delphi is 09:28:59

saying here is, we're not competing with you, 09:29:02

we're not trying to sell these chips to anyone 09:29:04

else; right? 09:29:07

A. Yeah. That was Rob's view, but I 09:29:08

disagree. 09:29:10

Q. Right. Fair enough. We're going to 09:29:11

get to your perspective in just a minute. 09:29:13

And Mr. Voto said, the next box, 09:29:15

"Microchip did not have a solution for the 09:29:21

single upstream lane that The Big 3 OEMs, 09:29:23

Ford, Chrysler, GM, wanted"; right? 09:29:27

A. Yes, that's correct. 09:29:32

Q. And that was true? 09:29:34

A. Yes. 09:29:37

Q. Okay. 09:29:38

It says in the notes, "Mitch 09:29:40

acknowledged that USB84604 was not adopted by 09:29:41

The Big 3." 09:29:46

That's that FlexConnect solution; 09:29:47

right? 09:29:49

A. Yeah. These are not things I said. 09:29:50

These are somebody else -- something people 09:29:53

wrote down. These are not things that I said. 09:29:55

Q. Well, it says, "Mitch acknowledged 09:29:57

that 84604, FlexConnect, was not adopted by 09:30:00

The Big 3." 09:30:05

Do you deny that you said that? 09:30:05

A. No, I don't deny I said that. 09:30:07

Q. Okay. Great. Let's go to the next 09:30:08

one. 09:30:11

MS. DURIE: No. 3 in that list, if 09:30:12

we can blow that up. There we go. Perfect. 09:30:14

BY MS. DURIE: 09:30:16

Q. "Rob," Rob Voto, Delphi, "said he 09:30:17

does not want to be a silicon developer" -- 09:30:20

that means making chips; right? 09:30:22

A. Yes. 09:30:24

Q. "Rob said he does not want to be a 09:30:25

silicon developer if he does not have to. If Microchip has an IC" -- that's a chip; right? 09:30:27 09:30:30

A. Yes. 09:30:32

Q. Okay. 09:30:33

-- "that he can use, he would rather use a Microchip chip. He wants to sell modules." 09:30:33 09:30:35 09:30:38

And that is, in fact, what Mr. Voto explained was his position at the meeting; right? 09:30:39 09:30:42 09:30:44

A. Yes. 09:30:44

Q. Okay. 09:30:46

MS. DURIE: Let us go on to the next page. 09:30:53 09:30:55

BY MS. DURIE: 09:30:57

Q. Now, this was the first time that you had talked with the folks at Microchip about that patent letter since they had responded to you at the end of January; right? 09:31:00 09:31:04 09:31:08 09:31:12

A. You mean they spoke to Delphi? 09:31:14

Q. I'm sorry, yes, spoke to Delphi. 09:31:17

A. Yes. 09:31:20

Q. And so that patent letter came up in this conversation; right? 09:31:20 09:31:23

A. Yes, it probably did. 09:31:25

Q. Okay. 09:31:28

And Rob, Rob Voto from Delphi, 09:31:28

said he "received/reviewed/responded to the 09:31:31

letter sent by Microchip legal in January 2015 09:31:35

regarding our patents." 09:31:38

Now, you said you weren't sure who 09:31:40

took those notes. The fact that it says, "our 09:31:42

patents," is probably a clue that these were 09:31:44

notes that were taken by Microchip; right? 09:31:46

A. I don't know. Let me read it. 09:31:51

Potentially, yes. 09:31:59

Q. Yeah. 09:32:00

His statement was that Delphi 09:32:01

believes it is not infringing. And that is, 09:32:04

in fact, what Mr. Voto told you; right? 09:32:07

A. I believe that's correct. 09:32:12

Q. Okay. 09:32:13

And it says, "Mitch," that's you, 09:32:14

"noted that the DDC ASIC may be infringing on 09:32:19

our patents. We will get a hub and test." 09:32:25

And that is, in fact, what you 09:32:29

told Mr. Voto; right? 09:32:31

A. Again, I don't know that to be true. 09:32:34

That's someone else's notes. 09:32:37

Q. Someone else at Microchip? 09:32:39

A. I guess now, yes, possibly. Yes. 09:32:41

Q. Do you deny that you said that? 09:32:45

A. I don't remember saying that, but I don't know. Yeah, I think -- I think certainly we were going to -- you know, we didn't have a product, and at one point, we would get a product and definitively prove they were infringing, but we didn't have one yet. 09:32:47 09:32:51 09:32:54 09:32:57 09:32:59 09:33:02 09:33:05

Q. So you told Mr. Voto -- he said we don't infringe and you said we think you may be infringing, we're going to check? 09:33:05 09:33:09 09:33:12

A. I think that's a matter of politeness in a meeting face-to-face with somebody. I'm not sure about the word "may" or what was said exactly, but I'm sure I was polite at the time. 09:33:15 09:33:17 09:33:19 09:33:21 09:33:24

Q. Did you make an effort to be polite in the original notice letter that you sent as well? 09:33:24 09:33:26 09:33:30

A. I think the letter needed to be factual. It's a legal type letter to say, you 09:33:30 09:33:32

know, at that point, we've looked at the data and it is actually being explained to us that it appears to be infringing our patents, also. 09:33:34 09:33:38 09:33:40

Q. Okay. 09:33:45

Now, let's look at what happened after this October meeting. 09:33:46 09:33:47

MS. DURIE: Let's have Exhibit 41 in evidence. 09:33:52 09:33:54

BY MS. DURIE: 09:34:01

Q. This is an email exchange among you and Ganesh Moorthy; right? 09:34:02 09:34:04

A. Yes. 09:34:08

Q. And we are on October 18th of 2015; right? 09:34:10 09:34:16

MS. DURIE: You can take it down. We don't need a particular -- that should be fine. I take it back. We can do that. 09:34:21 09:34:23 09:34:26

BY MS. DURIE: 09:34:28

Q. So in the middle of the page there, there is an email from Mr. Moorthy; right? 09:34:29 09:34:30

A. Yes. 09:34:34

Q. And one of his questions to you was, "How long does it make sense for Unwired to not see what they are doing as competitive to 09:34:34 09:34:38 09:34:41

you"; right? 09:34:46

A. Yes. When they win, we lose. That's 09:34:48

the definition of a competitor. 09:34:51

Q. Let's take a look at your response. 09:35:03

Second paragraph, actually the top, you're 09:35:14

changing your flight plans, et cetera, and 09:35:17

then you say, "Unwired sees themselves as a 09:35:19

module maker that was forced to do a chip 09:35:22

because no one else would. They showed a 09:35:25

willingness to use our chip, especially if it 09:35:30

is required by each of The Big 3." 09:35:34

So that was your report to 09:35:36

Microchip's CEO-to-be of what had transpired 09:35:38

at that meeting; right? 09:35:43

A. Yes. 09:35:44

Q. Okay. 09:35:45

And then you go on and you say, 09:35:46

"Bottom line we missed it." First Christian, 09:35:51

then the crossover marketer, then Don, then 09:35:55

Jesse; lots of other people's fault? 09:36:00

A. I'm sorry? 09:36:02

Q. Lots of other people's fault. 09:36:04

A. Well, we missed it. I didn't say 09:36:09

they missed it. 09:36:15

Q. Fair enough. Fair enough. 09:36:16

You would include yourself in one 09:36:17

of the people who missed it? 09:36:18

A. Yes. We did not see the market 09:36:19

accepting a non-standard solution. 09:36:22

Q. You didn't say anything here about 09:36:24

patents, did you? 09:36:27

A. I'm sorry? 09:36:28

Q. You didn't say anything here about 09:36:29

patents? 09:36:32

A. No. We don't mention the patents in 09:36:34

every letter. 09:36:37

Q. Now, Mr. Moorthy, to whom you sent 09:36:43

this, he was very concerned about competition 09:36:46

from Delphi; right? 09:36:52

A. I don't know about very concerned, 09:36:55

but certainly concerned about, you know, 09:36:57

somebody winning against us. They were the 09:37:01

competition. 09:37:06

Q. Competition. 09:37:06

Microchip doesn't usually face 09:37:07

competition; right? 09:37:09

A. We face competition all day every 09:37:10

day, yeah. 09:37:12

Q. Really? 09:37:12
A. Yeah. 09:37:13
Q. In the automotive chip business? 09:37:14
A. Certainly. We're like the 8th 09:37:16
largest or 9th largest automotive chip 09:37:19
manufacturer. 09:37:22
Q. How about in the market area where 09:37:24
you're a monopolist? 09:37:27
A. You used the word "monopolist." I 09:37:27
mean, I told you before, there are many, many 09:37:29
hub manufacturers. We just chose to do the 09:37:31
automotive hub variants that others chose not 09:37:33
to do, but other companies could do this 09:37:36
easily; they just choose not to. 09:37:38
Q. Right. 09:37:39
Now, you said I chose the 09:37:39
word monopolist. That was actually your word 09:37:42
yesterday; right? 09:37:43
A. Well, I responded that you could use 09:37:43
that word, and I said possibly. 09:37:45
Q. Yes, right. 09:37:45
And you said other people could 09:37:47
compete with you potentially, but as a general 09:37:49
proposition, they don't; right? 09:37:53

A. Well, they have not. 09:37:54
Q. Okay. 09:37:55
MS. DURIE: Let's take a look at 09:37:55
Exhibit 42 for identification. 09:37:57
(Whereupon, Trial Exhibit 42 was 09:37:59
introduced.) 09:38:01
BY MS. DURIE: 09:38:13
Q. TX-42 is an email exchange among Dave 09:38:14
Carpenter, Ganesh Moorthy and yourself, plus a 09:38:18
couple of other folks, November 2015, about 09:38:23
Delphi; correct? 09:38:27
A. Say it again. 09:38:31
Q. Sure. 09:38:32
Exhibit 42 is an email exchange 09:38:33
among Dave Carpenter, Ganesh Moorthy, Mitch 09:38:37
Obolsky, and a couple of other people from 09:38:40
November of 2015 about Delphi? 09:38:44
A. Yes. 09:38:48
MS. DURIE: We offer it. 09:38:50
MR. SLAYDEN: Your Honor, that's 09:38:51
subject to a limiting instruction. 09:38:52
THE COURT: All right. So it will 09:38:54
be received and, ladies and gentlemen, in this 09:38:56
exhibit when you see it, there are some 09:38:59

comments that are either reported or made by people who do not work at Microchip. And you can consider those statements for the fact that they were said and the impact they had on Microchip, but you should not treat them as true or consider them for the truth. Those are statements made by non-Microchip employees. You should consider them not to be the truth of what they say. Okay? 09:39:03 09:39:07 09:39:10 09:39:12 09:39:15 09:39:17 09:39:22 09:39:25 09:39:26

All right. You can proceed. 09:39:28

MS. DURIE: Thank you. If we can have up the last exhibit, 42. And I actually want to start at the beginning of time in the email exchange, but at the end of the document. So I want to start at the bottom of page 6, which is the first email in the thread. 09:39:30 09:39:31 09:39:35 09:39:38 09:39:41 09:39:43 09:39:48

BY MS. DURIE: 09:39:48

Q. And we have here an email from Keith Barber to you. 09:39:48 09:39:51

Now, who is Mr. Barber? 09:39:53

A. Hang on. Let me just -- 09:39:55

Q. Sure. Take your time. 09:39:56

A. Let me see where you are. 09:39:59

Q. No, that's fine. 09:40:00
A. Okay. Keith Barber is a salesman in 09:40:01
Detroit. 09:40:05
Q. Perfect. 09:40:05
And so let's take a look at what 09:40:06
he wrote, bottom of page 6. Okay. 09:40:08
So "Items for consideration:" 09:40:15
Now, above here, he's talking 09:40:19
about a price proposal that's being made to 09:40:21
Delphi; right? 09:40:25
A. Let me read it. 09:40:27
Q. Sure. 09:40:28
A. Where are we? 09:40:28
Q. "Mitch" -- 09:40:30
A. Hang on a minute. 09:40:32
Q. Take a look. 09:40:34
(Whereupon, the witness reviews 09:40:40
the exhibit.) 09:40:41
THE WITNESS: Okay. Yes. 09:40:42
MS. DURIE: Right. 09:40:44
BY MS. DURIE: 09:40:44
Q. He's talking about a price proposal 09:40:45
to Delphi, and he says at the bottom, "Items 09:40:47
for consideration: 09:40:50

"Unwired/Delphi developed an ASIC to capture the model year 2016 to 2018 USB single lane hub for Big 3 as the USB84604," that's FlexConnect, "did not meet the single USB lane requirement as communicated directly to Microchip"; right? 09:40:51 09:40:53 09:40:58 09:41:02 09:41:05 09:41:08

MCHP, what does that stand for? 09:41:10

A. Microchip. 09:41:12

Q. Right. 09:41:13

-- "by The Big 3 engineering teams"; true? 09:41:14 09:41:16

A. Yes, that's what it says. 09:41:17

Q. Okay. 09:41:18

MS. DURIE: Next page, one, two, three, four, let's go to five. 09:41:20 09:41:25

BY MS. DURIE: 09:41:27

Q. "Rob Voto," from Delphi, "expressed that if Microchip has a better solution, they will entertain engaging with Microchip. He wants to win module business and does not have to divert -- does not have to divert engineering resources and dollars on an ASIC. The question is, how do we enable him to make a decision to align with Microchip"; right? 09:41:29 09:41:33 09:41:35 09:41:37 09:41:40 09:41:42 09:41:45 09:41:47

What is UNG? 09:41:52

A. UNG was the name of the USB and networking division that we've been talking about. 09:41:53 09:41:56 09:41:58

Q. Okay. 09:41:59

Now, let's go down to the bottom of page 7 continuing in the thread and look what it says at the bottom, "Taking this background into consideration." 09:42:00 09:42:02 09:42:05 09:42:08

So this is Keith Barber reporting to you saying there is the background. Now, here is what we want to propose to Delphi. 09:42:09 09:42:12 09:42:15

"Honor our 2016 LTA commitment of 2.6 million percent for all UNG products." 09:42:18 09:42:24

What does LTA mean? 09:42:28

A. That's long-term payment. 09:42:29

Q. Right. 09:42:31

Microchip and Delphi have a number of long-term supply agreements; right? 09:42:32 09:42:34

A. Yes. 09:42:37

Q. Okay. 09:42:38

Some of those agreements, Microchip is the sole source; right? 09:42:39 09:42:41

A. Almost every product we make is 09:42:44

proprietary, so many of our products -- well, that product, we are the sole source. Nobody has that product. 09:42:46 09:42:50 09:42:52

Q. Right. 09:42:53

That's why it's really important to have these long-term supply agreements; right? 09:42:53 09:42:55 09:42:58

A. I guess so, yes. As a reason, yes. 09:42:58

Q. Right. 09:43:03

From Delphi's perspective, it would be a big problem if they've got a sole source chip and suddenly they can't get it; right? 09:43:03 09:43:06 09:43:08 09:43:10

A. Potentially, yes. 09:43:10

Q. So what Mr. Barber is proposing is that Delphi honor its 2016 long-term agreement commitment of 2.69 percent. 09:43:13 09:43:17 09:43:21

What does that mean? 09:43:23

A. I can guess what it means. I think it means that they were expecting a reduction of 2.69 percent if they hit the volumes they had set. 09:43:30 09:43:31 09:43:34 09:43:38

Q. Right. 09:43:38

And that's pretty standard in 09:43:39

these long-term supply agreements; right? 09:43:41

A. To have a number that will go down, 09:43:43

yes. If they have a forecast that goes up, 09:43:45

sometimes it goes down. 09:43:48

Q. Right. 09:43:50

And if you look at what Mr. Barber 09:43:50

says a little further on here, he says, "We 09:43:52

want to create a symbiotic relationship and 09:43:54

the foundation is trust on both sides"; right? 09:43:57

A. Yes, that's what Mr. Barber says. 09:43:59

Yes. 09:44:01

Q. Okay. 09:44:02

MS. DURIE: Let's take a look at 09:44:04

your response. Page 3, middle of the page, 09:44:05

Mitch Obolsky, page 3, middle of the page, 09:44:15

part way down, further down, further down. 09:44:20

There we go. 09:44:23

BY MS. DURIE: 09:44:24

Q. From you, back to Keith Barber, 09:44:24

"After more thought and discussion, I think 09:44:26

the best answer is to tell Delphi there will 09:44:28

be no price reductions this year for those 09:44:30

products"; right? That's what you said? 09:44:32

A. Yes. 09:44:36

Q. Okay. 09:44:36

MS. DURIE: Now, let's look at 09:44:38

what Mr. Pennington says. He's one of the 09:44:39

individuals -- strike that. 09:44:41

BY MS. DURIE: 09:44:43

Q. Who is Mr. Pennington? 09:44:43

A. Mr. Pennington is a salesman who has 09:44:44

lived his whole life right there at Delphi. 09:44:48

Q. Okay. 09:44:50

He is a salesman that is working 09:44:51

for Microchip; right? 09:44:53

A. Yes, yes, yes. 09:44:54

Q. Okay. 09:44:55

Let's look at what he has to say. 09:44:55

MS. DURIE: Let's blow that up all 09:44:58

the way down to the bottom of the page. 09:44:59

Perfect. 09:45:01

BY MS. DURIE: 09:45:01

Q. "I'm not quite clear to what there 09:45:03

will be no price reductions this year for 09:45:05

those products. What does those products mean 09:45:07

exactly? Does this mean we will not honor our 09:45:11

CY 2016 committed price agreements with 09:45:14

Delphi? Is that the message, Mitch?" 09:45:18

And then he goes on in the middle of the next paragraph, he says, "If that's the message, I will support it and can carry it back to customer." 09:45:21 09:45:23 09:45:26 09:45:28

A. Um-hmm. 09:45:30

Q. And then he says in the middle of that paragraph, "There are going to be questions; right? Questions will evolve around when can they expect to get the 379,000 in savings that we promised them in our long -- long term agreements." 09:45:31 09:45:33 09:45:36 09:45:39 09:45:42 09:45:47

And if we look at the very bottom, he says, "My two cents." Last paragraph. "We all need to realize that this decision probably will have some type of impact on our business going forward, not only for UNG products but also for other divisions as well. From Delphi's perspective it now becomes one of supplier credibility. For me I am saddened that it has come to this, credibility is built over time and I am sure everyone will remember the wild ride we have had with Delphi over the last 25 years. Our reputation and integrity is everything. We all know the story of 09:45:49 09:45:51 09:45:57 09:45:59 09:46:01 09:46:04 09:46:07 09:46:09 09:46:13 09:46:15 09:46:20 09:46:24 09:46:26

credibility and when it is lost..." 09:46:28

And then you responded -- 09:46:31

actually, I take it back. Mr. Moorthy 09:46:35

responded; right? Let's take a look at his 09:46:37

response. 09:46:44

MS. DURIE: Top of the second 09:46:49

page, if we can blow up the top of the second 09:46:46

page, starting at line 2. 09:46:51

BY MS. DURIE: 09:46:53

Q. "In fact, Unwired had been destroying 09:46:53

Microchip revenue and profits with what they 09:46:56

have done." 09:46:59

That was part of his concern; 09:46:59

right? 09:47:01

A. That's what it says, yes. 09:47:02

Q. And then the next bullet point, Mr. 09:47:03

Moorthy says, beginning in the middle of the 09:47:06

paragraph, "Ideally we want Delphi to cease 09:47:08

development of new products that continues to 09:47:12

destroy our business - that discussion takes 09:47:14

time and we need some negotiating leverage." 09:47:21

Do you see that? 09:47:25

A. Yes. 09:47:26

MS. DURIE: Let's go to the first 09:47:28

page. 09:47:29

BY MS. DURIE: 09:47:34

Q. Mr. Carpenter weighs in. Second 09:47:35

paragraph of his email beginning part way 09:47:38

down, talking about Delphi's reaction, and it 09:47:46

says, maybe about seven lines down, "They 09:47:49

still do not understand why we view them as a 09:47:52

competitor when we did not have a viable 09:47:55

solution to single lane CarPlay. They met 09:47:57

with us on numerous occasions before kicking 09:47:59

off their ASIC development to be sure they 09:48:02

exhausted all alternatives with us." 09:48:04

That was true? 09:48:09

A. This is -- this is Dave Carpenter's 09:48:12

view of their view, so yes, that is true. 09:48:14

That's their view, yes. 09:48:18

Q. It was their view and it was true? 09:48:19

A. I'm not sure; which part are you 09:48:23

asking was true? 09:48:25

Q. The part that's highlighted there in 09:48:26

yellow. 09:48:29

A. Yeah, that they didn't understand why 09:48:32

we were a competitor, yes. Well, they were 09:48:35

taking our business away. They are a 09:48:37

competitor. So yes, that was their view. They didn't understand why taking business from Microchip would make them a competitor.

MS. DURIE: Good. Let's go --

BY MS. DURIE:

Q. You said in your direct testimony yesterday that Aptiv continues to buy chips from Microchip; right?

A. Yes. Yes.

Q. Okay.

And you would agree, though, that in the relationship between Aptiv and Microchip, Microchip has a fair bit of negotiating leverage; right?

A. Well, we sell chips and they buy chips. I'm not sure.

Q. Now, you said yesterday in your direct testimony that Microchip was perfectly happy to keep selling chips to Aptiv; right?

A. Yes. When we're not competing, yes.

Q. When you're not competing.

Now, Microchip and Aptiv, under any definition of competing, are not competing on Aptiv's safety business; right?

A. I'm sorry? 09:49:58

Q. Let me back up. 09:50:00

Aptiv makes a bunch of different 09:50:01

kinds of components; right? 09:50:03

A. Yes. 09:50:04

Q. It has a line of business that are 09:50:06

products for safety in automobiles; right? 09:50:09

A. Yes. I don't know that to be true, 09:50:12

but yes, that's fine. 09:50:13

Q. Okay. 09:50:14

And it buys chips from Microchip 09:50:16

on the safety side of its business; right? 09:50:20

A. Again, I don't know the names of the 09:50:22

business, but yes, they buy chips from 09:50:23

Microchip, yes. 09:50:26

Q. Okay. 09:50:26

And the safety side of the 09:50:27

business, whatever you call it, things like 09:50:29

the controllers that automatically brake the 09:50:31

car if you get too close to somebody else, you 09:50:34

would agree that's a different line of 09:50:37

business from what we're talking about in this 09:50:38

lawsuit? 09:50:41

A. Yes. 09:50:42

Q. Okay. 09:50:42

Now, you're under oath; you're a 09:50:43
senior vice president at Microchip. You are 09:50:48
an officer of the company; right? 09:50:50

A. Not -- I'm not -- 09:50:53

Q. You are an appointed officer of the 09:50:57
company? 09:50:59

A. Yes, I guess. 09:51:00

Q. Okay. 09:51:01

So let's be very clear. Will you 09:51:03
agree that Microchip will engage in business 09:51:07
as usual with Aptiv, regardless of patent 09:51:12
disputes between the companies, on the safety 09:51:16
side of the business? 09:51:19

A. As a general case, yeah. We are 09:51:21
still working with Aptiv on pretty much every 09:51:23
area. 09:51:26

Q. Okay. 09:51:26

I understand you're still working 09:51:27
with Aptiv. Will you repeat after me: 09:51:28
Microchip will engage in business as usual 09:51:33
with Aptiv, regardless of what happens in this 09:51:38
case? 09:51:42

A. Will engage with -- I'm not sure I 09:51:45

understand what you're saying. What is the question? 09:51:49 09:51:51

Q. Will you agree, as an officer of Microchip, that Microchip will engage in business as usual with Aptiv on the unrelated safety side of its business, regardless of having disputes between the parties about the dual role hub? 09:51:52 09:51:58 09:52:03 09:52:09 09:52:14 09:52:17

A. I'm not sure I understand it. It's a very long, strange question to me, so maybe piece it. 09:52:19 09:52:23 09:52:26

Q. What part of that is complicated? 09:52:26

A. Just, I'm trying to follow the sequence of events directly. Yes, we will work with Aptiv. 09:52:30 09:52:32 09:52:34

Q. That was not my question. Let me ask it again. 09:52:35 09:52:37

A. I'm not sure I understand the question. 09:52:37 09:52:39

Q. Let me ask you again. 09:52:39

A. Yes. 09:52:40

Q. Will Microchip commit to engage in business as usual with Aptiv on the safety side of its business where you are the sole 09:52:41 09:52:47 09:52:53

supplier, regardless of patent disputes about the hub business at issue in this case? 09:52:56 09:53:04

A. I don't understand what "commit to engage" means. 09:53:10 09:53:11

Q. You are an officer of the company. 09:53:13

A. Yes. 09:53:15

Q. That's what I mean by commit. 09:53:16

A. We are absolutely willing to work with them on safety products together. 09:53:20 09:53:21

Q. Still not my question. 09:53:24

A. I don't understand the question. That's the problem. I'm happy to answer. 09:53:25 09:53:26

Q. Are you willing to repeat these words after me? 09:53:29 09:53:31

MR. SLAYDEN: Your Honor, object. She's asking him just to repeat the words she says? That's not a question. 09:53:32 09:53:33 09:53:37

THE COURT: Okay. I don't need speaking objections. 09:53:38 09:53:41

MR. SLAYDEN: I'm sorry. 09:53:41

THE COURT: If you have an objection, make an objection and if you need to approach, approach. 09:53:42 09:53:44 09:53:46

The objection is sustained. 09:53:47

BY MS. DURIE: 09:53:53

Q. Let me ask the question then, Mr. Obolsky, like this: 09:53:49 09:53:51

Are you willing to make a commitment that Microchip will engage in business as usual? Yes or no? 09:53:53 09:53:54 09:53:58

A. Yes. I guess we would do business as usual with Aptiv. I don't really understand the question, but yes, certainly. In our view, we want to continue to work with them as we always have. 09:54:02 09:54:06 09:54:09 09:54:12 09:54:14

Q. Business as usual? 09:54:15

A. Again, it's a very broad business as usual, but yes. Yes. 09:54:19 09:54:22

Q. Good. 09:54:25

A. Business as usual, yes, I believe so. 09:54:26

MS. DURIE: Good. Thank you. No further questions. 09:54:28 09:54:30

MR. SLAYDEN: Your Honor, we have one housekeeping issue here. 09:54:53 09:54:58

THE COURT: Do you need to approach? 09:55:00 09:55:01

MR. SLAYDEN: No, no, it's fine. 09:55:02

THE COURT: Okay. 09:55:03

MR. SLAYDEN: It is Exhibit 50; it is a native document. There's no objection to it. 09:55:04 09:55:06 09:55:09

THE COURT: Okay. 09:55:09

MR. SLAYDEN: So we move to admit Exhibit 50, Your Honor. 09:55:10 09:55:12

THE COURT: Okay. 09:55:13

No objections; right? Per his discussion, there is no objection, Ms. Durie? 09:55:13 09:55:16

MS. DURIE: No. 09:55:18

THE COURT: All right. So it will be received. 09:55:19 09:55:21

(Whereupon, Trial Exhibit 50 was introduced and admitted.) 09:55:21 09:55:25

MR. SLAYDEN: Mr. Ferrer, can you bring up Exhibit -- no, hold on. Don't bring it up. 09:55:28 09:55:32 09:55:35

May I approach? 09:55:36

THE COURT: Yes. 09:55:38

- - - 09:55:39

REDIRECT EXAMINATION 09:55:39

- - - 09:55:46

BY MR. SLAYDEN: 09:55:46

Q. Mr. Obolsky, can you identify 09:55:49

Exhibit 52 for us? 09:55:51

A. This one? 09:55:54

Q. 82, I'm sorry. 09:55:55

A. Yes. Yes. It appears to be an internal document that I wrote. 09:55:57 09:55:59

(Whereupon, Trial Exhibit 82 was introduced.) 09:55:59 09:56:03

MR. SLAYDEN: Okay. Move to admit it. 09:56:03 09:56:05

MS. DURIE: No objection. 09:56:05

THE COURT: Okay. It is received. 09:56:06

(Whereupon, Trial Exhibit 47 was introduced.) 09:56:06 09:56:16

BY MR. SLAYDEN: 09:56:16

Q. Mr. Obolsky, do you recognize the document I gave you? 09:56:36 09:56:39

A. Yes. 09:56:43

Q. Exhibit 47? 09:56:43

A. Yes. 09:56:46

MR. SLAYDEN: Move to admit it. I apologize for not having a copy. 09:56:46 09:56:48

MS. DURIE: No objection. 09:56:49

THE COURT: Okay. It is received. 09:56:51

Mr. Slayden, is that Exhibit 47, 09:57:01

the last one? 09:57:03

MR. SLAYDEN: Yes, sir. 09:57:04

THE COURT: Okay. 09:57:05

BY MR. SLAYDEN: 09:57:11

Q. Mr. Obolsky, do you recognize 09:57:12

Exhibit 42 that I have put in front of you? 09:57:14

A. Yes. This is a Microchip internal 09:57:17

document. 09:57:21

MR. SLAYDEN: Move to admit 09:57:22

Exhibit 42. 09:57:24

MS. DURIE: Sorry, 42? 09:57:27

MR. SLAYDEN: Yes. 09:57:29

THE COURT: 42, is that what you 09:57:30

said? 09:57:32

MR. SLAYDEN: 42, Your Honor. 09:57:32

THE COURT: Okay. 09:57:34

MS. DURIE: No objection. 09:57:34

THE COURT: Okay. It is received. 09:57:35

MR. SLAYDEN: I can take those 09:57:39

back. 09:57:40

(Brief pause.) 09:57:53

BY MR. SLAYDEN: 09:58:25

Q. Mr. Obolsky, yesterday you testified 09:58:26

concerning a period of time around 2014 when 09:58:28

Aptiv -- excuse me, Delphi contacted Microchip concerning Unwired. 09:58:34 09:58:39

Do you remember that? 09:58:40

A. Yes, I do. 09:58:41

Q. And did Aptiv actually -- Delphi actually contact Microchip and ask them to investigate Unwired's one-lane solution? 09:58:42 09:58:46 09:58:49

A. Yes, they did. 09:58:51

MR. SLAYDEN: Mr. Ferrer, can you bring up Exhibit 58. And can you go down to... 09:58:57 09:58:58 09:59:20

BY MR. SLAYDEN: 09:59:20

Q. Do you have Exhibit 58 in your notebook? 09:59:21 09:59:22

A. 58, I have -- I don't have it. 09:59:36

Q. That's okay. Can you see the screen? Or I can bring you a copy. 09:59:42 09:59:45

A. Yes, I can. 09:59:46

MR. SLAYDEN: And, Mr. Ferrer, can you bring up the last sentence of the first full paragraph, please. 09:59:59 10:00:00 10:00:02

BY MR. SLAYDEN: 10:00:04

Q. And do you recognize this email? 10:00:13

A. Yes. 10:00:17

Q. And do you recognize Mr. Orlosky? 10:00:19
A. From the exhibit, yes. 10:00:24
Q. And he is a Delphi employee? 10:00:26
A. As I understand it, yes. 10:00:29
Q. And the last sentence, it says, this is Delphi talking, "I started working on these products a little over a year ago and am self taught. No one existed in this position (a guy quit and I was not engaged) and the SMSC/Microchip guys have been outstanding in helping me learn the technologies and make the right product decisions. We will continue down this road and I'm sure there will be no further discussion." {Sic} 10:00:32 10:00:38 10:00:41 10:00:44 10:00:47 10:00:51 10:00:54 10:00:56 10:00:59 10:01:02
Isn't that Delphi giving Microchip a compliment for helping them during this time when Unwired starting competing with Delphi? 10:01:04 10:01:07 10:01:10
A. Yes. At that point, we were partners hoping to win together, and yeah, they were -- as I mentioned earlier, we put a lot of technical support into any designs with our customer. 10:01:12 10:01:15 10:01:17 10:01:19 10:01:23
Q. And can you please remind the jury why Microchip raised prices on its four USB 10:01:26 10:01:31

hub products back in the timeframe of 2019? 10:01:35

A. It became obvious that all the prior 10:01:39

discussions about what the plans were were no 10:01:42

longer going to be true and the volumes would, 10:01:43

you know, start to drop dramatically as they 10:01:45

shifted over to an alternate solution. So the 10:01:48

volume was dropping and all the forecasts 10:01:51

didn't make any sense, so we said fine, time 10:01:53

to adjust, and then it all bared out, right? 10:01:56

We talked about it dropping from 16 million to 10:01:58

eight million to five million in consecutive 10:02:01

years, and that was not the original forecast. 10:02:04

Q. So Aptiv wasn't going to be this 10:02:06

long-term agreement commitment? 10:02:08

A. I'm sorry. No, Aptiv was going to 10:02:10

come nowhere near what they had forecast 10:02:13

prior. 10:02:15

Q. And did that turn out to be true? 10:02:15

A. Yes. As I just mentioned, the 10:02:17

revenue -- the revenue dropped dramatically 10:02:19

once they had their own different solution 10:02:23

that was no longer a partnership with the new 10:02:25

competing solution. 10:02:27

Q. And I think you testified yesterday 10:02:28

that Microchip supplies Aptiv over 100 other products, approximately? 10:02:29 10:02:34

A. Yeah. 10:02:35

Q. To Aptiv? 10:02:36

A. Yes. Something just above 100, giving broad numbers. 10:02:37 10:02:41

Q. Did Microchip raise the prices on those products? 10:02:41 10:02:44

A. No, we did not. Only on the ones where we were directly competing. 10:02:44 10:02:46

MR. SLAYDEN: No further questions. 10:02:48 10:02:49

THE COURT: Ms. Durie? 10:02:51

MS. DURIE: Nothing further. 10:02:53

THE COURT: Mr. Obolsky, you can step down. If your binder is there, why don't you take it with you. 10:02:54 10:02:56 10:03:00

(Whereupon, the witness was excused.) 10:04:12 10:04:14

(Brief pause.) 10:04:15

MR. FENTON: Good morning, Your Honor. 10:04:48 10:04:49

THE COURT: Good morning. 10:04:49

MR. FENTON: My name is Truman 10:04:50

Fenton and I am an attorney on behalf of Microchip Technology, and we are going to present Mr. Ivan Zatkovich. 10:04:51 10:04:54 10:04:56

THE COURT: All right. Call Mr. Zatkovich up to the stand, please. 10:04:57 10:04:59

THE COURT CLERK: Please state and spell your name for the record. 10:05:13 10:05:20

THE WITNESS: Ivan Zatkovich, I-V-A-N, Z-A-T-K-O-V-I-C-H. 10:05:23 10:05:24

\- - - 10:05:38

DIRECT EXAMINATION 10:06:22

\- - - 10:06:22

BY MR. FENTON: 10:06:24

Q. Mr. Zatkovich, would you introduce yourself, please. 10:06:25 10:06:26

A. Yes. My name is Ivan Zatkovich. I live in New York, but I was born and raised in Pittsburgh, Pennsylvania. 10:06:27 10:06:30 10:06:32

Q. And, Mr. Zatkovich, did you prepare some slides to go over with the jury today? 10:06:34 10:06:36

A. Yes. I prepared two expert reports for this matter, and I summarized portions of that and basically summarized them in slides. 10:06:39 10:06:41 10:06:44

MR. FENTON: Can we take a look at 10:06:48

the first slide, please. 10:06:50

THE WITNESS: Sure. 10:06:51

BY MR. FENTON: 10:06:54

Q. Will you briefly introduce yourself, 10:06:55

including your educational background. 10:06:57

A. Sure. I went to the University of 10:06:58

Pittsburgh where I received a bachelor's in 10:07:01

computer science. I also began my master's 10:07:03

study in what's called heterogeneous computer 10:07:06

networks. Basically it's getting computers, 10:07:10

microcomputers, to talk to each other. 10:07:13

I also minored in the design of 10:07:15

digital electronic circuits. 10:07:21

Q. And then what is your overall 10:07:23

background? 10:07:25

A. My overall background, for the 10:07:26

last -- actually over 30 years, has been in 10:07:29

computer science. Basically my career has 10:07:32

focused on building electronic devices, 10:07:35

getting computer devices to talk to computers 10:07:40

and getting computers to talk to each other. 10:07:43

So that boils down to computer networks, 10:07:45

digital circuit design, and software to 10:07:47

control those devices in that communication. 10:07:50

Q. And, I'm sorry, you have a bachelor's in computer science. Did you work on your master's? 10:07:57 10:08:00 10:08:02

A. I did. My master's thesis was actually an extension of my senior year project which University of Pittsburgh had, and this was in the late '70s, had a microcomputer laboratory where, back in the '70s, we had the Radio Shack TR3, we had the Apple 2, MSI A88. I was in heaven when I was working in those computer labs. 10:08:02 10:08:05 10:08:08 10:08:11 10:08:13 10:08:17 10:08:21 10:08:25

So I developed a project. At the time, none of these computers could talk to each other. Today it's a given, but then, back then, you couldn't do that. So I developed my master's thesis on getting these computers to speak to each other. 10:08:26 10:08:28 10:08:30 10:08:33 10:08:35 10:08:38

And then I developed an application on top of that which was a game where each user would sit on their computer and be in a virtual matrix and try to find and kill each other within the matrix. 10:08:40 10:08:41 10:08:43 10:08:47 10:08:51

Q. Now, did you complete your master's? 10:08:53

A. I did not. Shortly after I finished 10:08:55

my thesis of this project, Digital Equipment -- Digital was the second largest manufacturer of computers at the time. They came along and basically gave me a job offer to work on their computers, which I loved. So I forego my master's study and jumped into Digital Equipment. 10:08:58 10:09:01 10:09:04 10:09:06 10:09:09 10:09:13 10:09:16

Q. And what kind of a company was it that you worked for, Digital Equipment? 10:09:17 10:09:18

A. It was fantastic. It was -- the owner of the company was Ken Olsen, he was an engineer, so it was a company run by engineers for engineers. So in that company, I was doing exactly what I loved, designing electrical components and getting computers to talk to each other. 10:09:20 10:09:22 10:09:25 10:09:27 10:09:31 10:09:33 10:09:36

Q. What is the rest of your professional history, if you could just give a brief overview of that? 10:09:38 10:09:40 10:09:42

A. Sure. Again, every -- throughout my career, I focused on designing electronic devices to talk to computers and getting computers to talk to each other in different ways. So I'll give you a brief summary of the 10:09:43 10:09:46 10:09:49 10:09:51 10:09:53

different jobs that I did that in. 10:09:56

At Digital Equipment, as I 10:09:58

mentioned, I designed and developed disk 10:10:01

devices, disk drives and tape drives; I 10:10:05

designed and developed communication software. 10:10:09

At GTE Data Services, which became 10:10:11

Verizon, I designed and developed 10:10:15

telecommunications software, again getting 10:10:17

computers to communicate over telephone 10:10:20

networks. 10:10:23

At Utility Partners, I was the 10:10:23

director of networks and we developed devices, 10:10:25

field devices, that could communicate via 10:10:30

computers over the radio network for the field 10:10:35

service personnel. 10:10:40

At Tanning Technology, I developed 10:10:41

eCommerce software primarily for communicating 10:10:45

secure financial transactions, making 10:10:50

transactions, ensuring transactions over 10:10:52

computer networks. 10:10:58

At Eva-tone, which was a 10:10:59

multimedia company, I was developing network 10:11:00

communications to communicate media to and 10:11:02

from networks, audio media, video media, 10:11:06

streaming media. And at Smith & Nephew, I was a global web manager. Smith & Nephew manufactures medical instruments and specialized bandages, and they have subsidiaries all over the world. So I was overseeing the 24 different websites that they had over the globe and making sure they were synchronized and communicating with each other. And then finally I got to start my own company where I could take my projects and I could design whatever devices I wanted, well, whatever clients would hire me to design. And I also, at the current time, I have about a dozen consultants that I employ within eComp Consultants.

Q. Now, you also have another slide that talks about some specific projects. Can we focus in on -- would you describe your work at Utility Partners?

A. Sure. I actually cherry-picked some of the projects from some of the different companies that I thought were most closely

related to this.

Again, as I mentioned, at Digital Equipment Corporation, I was doing high speed communications. I was doing disk and tape device drivers to communicate from a disk to the computer.

I was also on -- at that time, I was a member of the International Standards Organization, ISO, and I was on two different committees. One of the committees was designing standards for the disk drives, for the disk format. Another of the ISO committees was developing standards for Ethernet. I think you heard Mr. Bohm describe Ethernet as a wired version, an older wired version of WiFi. So we were developing standards for that.

At Utility Partners, one of the devices that I had to develop was related to what we call mobile field terminal. These were older, I guess you could call them older versions of iPads. They were electric devices that you could download work orders and upload them to the computer.

So we rigged them up to communicate via the radio so that field technicians could get these guys to go out and hook up electricity, repair the transformers; rather than have them go to the central office every time they needed to pick up a paperwork order, we gave them these global field terminals where they could download their work orders over the radio. 10:13:21 10:13:22 10:13:25 10:13:29 10:13:31 10:13:34 10:13:37 10:13:40 10:13:43

When they came back into the central office at the end of the day, they needed to upload those computer work orders to the computer. Well, this was 1996, '97, very early beginnings of USB. I wanted to convince our utility company clients to use USB because I knew that was an up and coming thing at that time. 10:13:44 10:13:46 10:13:48 10:13:51 10:13:56 10:14:01 10:14:05 10:14:08

Unfortunately, most of the MDT units only communicated via these old serial devices. So what I had to do is design a special type of USB hub that would allow you to connect normal USB devices, as well as these other older terminals with serial communications. 10:14:08 10:14:13 10:14:16 10:14:19 10:14:21 10:14:25 10:14:28

So we had -- in the hub, I had to design a conversion from serial communications to the USB communications so that everything would go up to the host computer using USB hub. So I thought that's quite interesting, it worked quite well. 10:14:29 10:14:31 10:14:34 10:14:36 10:14:40 10:14:42

At Tanning Technology, that's not a tanning booth company, Mr. Tanning was the name of the owner of the company. We did network infrastructure. We did a specific project for Morgan Stanley. We were developing mobile applications for their stock brokers. 10:14:43 10:14:47 10:14:49 10:14:52 10:14:55 10:14:57 10:15:00

Again, this is well before the iPhone and Smartphones. We were taking these palm PDAs and these older Blackberries and developing software where you could download stock quotes, do stock trades and connect them via the computer via a USB adapter. So we designed USB adapters for the Blackberries and the palm PDA. 10:15:01 10:15:02 10:15:06 10:15:11 10:15:13 10:15:17 10:15:23 10:15:27

And at eComp Consultants, my company, one of the projects that we worked on was developing a special type of WiFi called a 10:15:28 10:15:31 10:15:33

mesh network WiFi. That's allowing people to take their cell phones and communicate with each other on their cell phones creating a network without using the telephone network. It's called, using WiFi direct, you can communicate directly with other phones and you can create a network of phones using WiFi direct. Very interesting. We developed some applications on top of that. 10:15:36 10:15:40 10:15:43 10:15:45 10:15:48 10:15:51 10:15:54 10:15:57 10:15:59

Another device that we designed was a locator tag. I don't know if you're familiar with Apple AirTag, where you put the tag on the device; in case you lose it, you can look on your iPhone to where you've lost it. 10:16:01 10:16:04 10:16:08 10:16:11 10:16:14 10:16:16

We were working on technology similar to that before the AirTag where it used a tag on the device that we had to connect to it, charge it via USB, and also to download and upload information to the tag using a USB interface. 10:16:16 10:16:19 10:16:22 10:16:25 10:16:30 10:16:32

So those are just a sample of projects that I thought related to the technology here. 10:16:35 10:16:37 10:16:39

Q. Have you testified at trial before in a patent case? 10:16:40 10:16:41

A. I have. 10:16:42

Q. And have you testified both on behalf of plaintiffs and defendants? 10:16:43 10:16:46

A. Yes. I would say almost equal plaintiff and defendants. 10:16:47 10:16:50

Q. Are you being compensated for your work on this case? 10:16:51 10:16:52

A. I am. 10:16:53

Q. And does your compensation tie at all to the outcome of this litigation? 10:16:54 10:16:57

A. No. I get paid the same, regardless of the outcome. 10:17:00 10:17:02

MR. FENTON: Your Honor, we tender Mr. Ivan Zatkovich as an expert on technical issues in the area of system integration and communications. 10:17:03 10:17:05 10:17:08 10:17:10

MS. DURIE: No objection. 10:17:11

THE COURT: Okay. He is accepted. 10:17:12

BY MR. FENTON: 10:17:14

Q. Mr. Zatkovich, what was your assignment and what did you do to accomplish that assignment? 10:17:14 10:17:15 10:17:18

A. My general assignment was to basically examine the patents-in-suit, specifically the '243 Patent, to analyze that and also to look at both the Aptiv product and the Microchip product to see how those related to the '243 Patent. 10:17:20 10:17:22 10:17:26 10:17:30 10:17:34 10:17:37

Q. Okay. 10:17:40

And what kind of materials did you consider in analyzing this process? 10:17:40 10:17:42

A. Well, first and foremost, dozens of documents describing the specifications, circuit diagrams, communication protocols of the Aptiv and the Microchip devices. I looked at the court filings, of course. I looked at the source code. 10:17:45 10:17:48 10:17:51 10:17:56 10:17:59 10:18:02

Aptiv provided the software that they developed that sits on both their Boston -- it runs on both their Boston chip and in the head unit that the Boston chip connects to. 10:18:03 10:18:05 10:18:08 10:18:10 10:18:13

I looked at the expert reports of the experts in this case, and I also read testimony of the various witnesses that were deposed in this matter. 10:18:14 10:18:18 10:18:21 10:18:23

Q. And did you conduct any analysis of any systems or technologies? 10:18:26 10:18:30

A. Well, yes. One of the things that I did was to test the Aptiv device. After having read all the specifications, the design and having what I felt was a clear understanding of that device, I wanted to test it just to make sure it matched with the specification. 10:18:32 10:18:34 10:18:38 10:18:41 10:18:43 10:18:45 10:18:48

So I found a specific make and model of a car that I knew had that Aptiv Boston chip in it, which was a GMC Yukon. I wanted to rent a Cadillac Escalade, but that wasn't in the budget, so I rented the Yukon and I hooked up a LeCroy Logic Analyzer that would intercept the communications going from the iPhone through the Boston chip device and up to the head unit. 10:18:49 10:18:52 10:18:56 10:19:01 10:19:05 10:19:07 10:19:11 10:19:13 10:19:16

And basically my -- my objective of that was just to verify that it was operating consistently with the documents that I had read. 10:19:17 10:19:20 10:19:22 10:19:25

Q. And did you research any USB materials or other materials on your own to 10:19:27 10:19:29

make sure you understood the context of this case? 10:19:31 10:19:33

A. Yes. Of course, I mean, while I was developing USB devices, I was very familiar with USB spec, but that had been a little while, so I refreshed my memory on the USB specifications. 10:19:33 10:19:36 10:19:38 10:19:41 10:19:44

Q. Did you prepare some slides to discuss USB concepts? 10:19:46 10:19:48

A. I did. I have been sitting in court here, so I know witnesses have been talking about USB. I wanted to do a top-down review of this, but hopefully it's just a quick overview. 10:19:49 10:19:55 10:19:58 10:20:02 10:20:04

So USB standard, which is several hundred pages long, basically has three categories; it has mechanical -- actually, do we have like a cable? 10:20:06 10:20:10 10:20:12 10:20:15

Q. I'm handing you 359 and an iPhone. 10:20:35

A. Great. All right. 10:20:37

So mechanical specifications are basically the specifications about the connection. This is the thing that you charge your iPhone and you are almost always 10:20:39 10:20:40 10:20:44 10:20:46

connecting upside-down. So the mechanical specifications define the size and the shape, the composition of the physical items, including the port. 10:20:49 10:20:51 10:20:55 10:20:58

And this connects into, as the picture shows here, it connects into the port. That's the USB port there, and the mechanical specification covers that as well. 10:20:59 10:21:02 10:21:11 10:21:15

The second part is the electrical specifications. Basically that's the voltages and the signal, the types of signals that get transmitted on the cables for the communication. 10:21:17 10:21:19 10:21:22 10:21:25 10:21:27

The third part is by far the largest part of the specification, and that's the communications. That includes the commands, the type of data transfer that you're communicating back and forth. 10:21:28 10:21:30 10:21:32 10:21:36 10:21:39

But those three parts basically make up the entirety of the USB specifications. 10:21:41 10:21:43 10:21:45

Q. And then did you want to go over some of the concepts within USB? 10:21:48 10:21:50

A. Yeah. Real quick, we'll go top to 10:21:52

bottom here. 10:21:55

So the green -- the green line 10:21:56

here -- oops, I'm pressing the wrong button. 10:21:58

The green line here represents the 10:22:03

USB bus. That's the physical connection; a 10:22:05

combination of all the cables is the USB bus. 10:22:09

That's where all the signals get transmitted 10:22:11

on. And if you want to connect to a host, you 10:22:15

would have to connect into the USB bus. 10:22:18

That's connected through that host. 10:22:20

And the host at the top, of 10:22:22

course, is the device that's in control. It 10:22:24

is the one that sends commands down to the 10:22:27

devices. Devices can't say anything until the 10:22:28

host sends a command to it; then the devices 10:22:31

can respond. 10:22:34

The devices, of course, are what 10:22:36

follow the commands. And in this particular 10:22:39

case, we have the USB host, which the computer 10:22:43

has, in this case, up to three ports. What 10:22:48

happens if we have more than three USB devices 10:22:50

that you want to plug in? Some of you may be 10:22:52

familiar. You can plug in a hub. A hub gives 10:22:56

you extra ports. 10:22:59

Q. Mr. Zatkovich, what are the little red numbers? 10:23:01 10:23:03

A. The little red numbers are the addresses of the devices. Every time a device gets added to the USB hub, it has to be given an address, and that's done by the host, and I'll talk a little bit more in detail on that. 10:23:03 10:23:05 10:23:10 10:23:13 10:23:15

But even the hub has to have an address, too, because it has to talk to the host. So now the hub is given some more supports so we can add some more devices. 10:23:18 10:23:20 10:23:22 10:23:27

And let's talk briefly about what happens when we add a new device to the bus. When we add a new device to the bus, such as a memory stick, the first thing that happens is it sends up basically a discovery signal up to the host saying there's a new device here and we don't know what it is. 10:23:29 10:23:31 10:23:35 10:23:37 10:23:40 10:23:43 10:23:45

So the host does what's called an enumeration, and I think you've heard that term, "enumeration." Basically it's the host saying I need to know who you are. So it asks for the device's configuration, what type of device you are, what type of interface do you 10:23:46 10:23:49 10:23:52 10:23:55 10:23:59 10:24:02

use to communicate data. And once it receives that information, it -- and if the host is satisfied, it assigns a new address to that device so that it can tell that device from all the other devices on the USB bus. 10:24:05 10:24:07 10:24:12 10:24:16 10:24:17

Of course, this is the way the standard USB network works in a standard USB device. We're going to be looking at some non-standard USB devices. 10:24:20 10:24:22 10:24:28 10:24:32

Q. Thank you. 10:24:35

Now, we've already heard a bit about CarPlay, but do you have some slides giving a review of CarPlay and how some of the CarPlay issues interface with this case? 10:24:36 10:24:37 10:24:40 10:24:43

A. Sure. One item I forgot, small but important concept, the host is considered at the top of the triangle, so it looks at its devices through downstream, downstream ports, and the devices look up to the host and it looks up to those through upstream ports. Important concept I will be talking about later. 10:24:44 10:24:49 10:24:53 10:24:56 10:24:59 10:25:02 10:25:05 10:25:07

All right. CarPlay. And I know many of you have probably used CarPlay or seen 10:25:08 10:25:12

it before. Some of you may have not. So I'm going to assume that some of you may have not, so I'm going to talk about it from the beginning. 10:25:15 10:25:18 10:25:21 10:25:23

So CarPlay is an invention by Apple. We know Steve Jobs, big innovator. His concept was create a computer in a phone together in a smart iPhone and put an iPhone in everybody's pocket. 10:25:24 10:25:27 10:25:30 10:25:34 10:25:36

Well, Apple took that one step further and wanted to put an iPhone in everybody's car. They saw cars coming out with these sophisticated head units, these screens where you can display your radio stations, where you can show -- control your heater, where you can show your mapping. So iPhone wanted to get into that business and so they invented the concept of CarPlay. 10:25:38 10:25:40 10:25:42 10:25:45 10:25:49 10:25:51 10:25:53 10:25:56 10:25:59

And very much like Apple, they wanted to make sure that the CarPlay device, the iPhone, was -- had some -- some control over the head unit. So it wanted the iPhone to be the host. Of course, the car manufacturers wanted the head unit to be the 10:26:01 10:26:03 10:26:05 10:26:09 10:26:13 10:26:15

host. So you can't have two hosts on the same bus. What do you do? Well, we'll talk about that. 10:26:17 10:26:18 10:26:20 10:26:24

Q. Before we move off this screen, the head unit is showing CarPlay; is that correct? 10:26:24 10:26:26

A. Correct. 10:26:28

Q. And what is it? 10:26:29

A. The concept of CarPlay is to take the applications that are on your iPhone and allow you to access them on the screen of the car. So that while you're driving, you don't have to look at your phone; you can just press a button on the screen. 10:26:30 10:26:34 10:26:36 10:26:40 10:26:42 10:26:44

Q. And, Mr. Zatkovich, what would that screen look like before CarPlay started up? Would it have the same icons? 10:26:46 10:26:50 10:26:56

A. It would have the normal radio control, showing your radio stations, or it would have your heater control or your map. Once you plug in your iPhone device and it becomes CarPlay, you can see the CarPlay applications. 10:26:57 10:26:59 10:27:02 10:27:04 10:27:07 10:27:08

But you have to plug it in. So if 10:27:09

your car's head unit is CarPlay compatible, it will give you USB ports to plug in. Now, some car manufacturers only assign one USB port to CarPlay and you have to figure out which one it is, and usually it's labeled. Other car manufacturers prefer that all of the USB ports in the car be CarPlay enabled, and that's a very desirable feature, so that you don't have to figure it out. 10:27:14 10:27:18 10:27:21 10:27:24 10:27:26 10:27:28 10:27:32 10:27:36 10:27:38

But once you do plug your car -- or your iPhone into your USB CarPlay port, the head unit then displays your CarPlay applications from your iPhone on the screen. And what happens at that point -- so let's say, for example, you touch on the Apple, play music application. What happens? The head unit detects that and sends that down to the iPhone. It says somebody has touched on the Apple play music icon, down to the iPhone. 10:27:40 10:27:43 10:27:48 10:27:52 10:27:54 10:27:56 10:28:01 10:28:04 10:28:07 10:28:10

The iPhone says fine, let me send back up to you music selections that I have that you can play. And that's what then appear on the head unit. 10:28:15 10:28:18 10:28:21 10:28:25

So that's, in a nutshell, that's 10:28:27

the concept of CarPlay. 10:28:30

Q. Now, do you have some slides talking 10:28:32

about the '243 Patent and the invention? 10:28:35

A. I do. We are going to have many 10:28:40

slides on that. I apologize. We will be 10:28:42

going through a lot of claim items, but that's 10:28:44

my job. 10:28:49

So I wanted to do a brief overview 10:28:49

of patents in general. I've had the 10:28:53

opportunity, over my 30-year career, to 10:28:56

examine hundreds -- probably at least a couple 10:28:58

thousand patents. Sometimes I do them for 10:29:02

fun; being that there's so many patents out 10:29:07

there. 10:29:12

In other cases, companies hire me 10:29:12

to evaluate their patent portfolio. For 10:29:14

example, AT&T has about 200 telecommunication 10:29:17

patents. They asked me to evaluate them and 10:29:20

identify which ones I thought were the most 10:29:22

valuable so they could maintain them and 10:29:24

monetize them. 10:29:27

In other cases, I get hired to 10:29:27

evaluate patents for patent litigation, which 10:29:30

is what I'm doing today, among my other 10:29:33

projects. So all patents basically have three parts; it's the cover. On the cover, you have the inventor who invented it; in this case, Mr. Bohm, and his associate. We have the history of the patent, what patents are related to it, when it was issued and the patent number, of course, which is important. The next -- and the bulk of the patent is the description of the technology. It's actually called the specification. It has the diagrams and the descriptions of the technology. It also had, as Mr. Bohm mentioned, it has embodiments. Embodiments are just examples of how you might use that technology in a device or in a system. And we can see that here at the top in the infamous Figure 3 of the '243 Patent, and we'll be talking about that. The last part of the patent is the claims, and even though the specification talks about the background of the technology and the embodiments, the actual invention is

defined in the claims, itself. Each -- in fact, each claim is an invention in and of itself, a valid claim. 10:30:50 10:30:52 10:30:55

And this particular patent has 25 claims. Each claim is different. They have to be different. Many of them look similar, but the patent will not allow you to issue a patent if any of the claims say the same thing or do the same thing. So they are distinct. 10:30:57 10:31:00 10:31:02 10:31:04 10:31:08 10:31:12

Sometimes differences are very subtle. I felt for Mr. Bohm when he was up here trying to compare two different claims. Sometimes it takes many hours to tease out the difference between claims, but they are different. Trust me. 10:31:15 10:31:18 10:31:21 10:31:22 10:31:25 10:31:27

We'll be talking about claims 23, 24 and 25. All right. Should I proceed into the rest of the patent? 10:31:28 10:31:31 10:31:41

Q. Please proceed. 10:31:43

A. All right. Okay. I know you've seen Figure 3. We're going to walk through it again from bottom to top. Hopefully I'll be able to describe it in an understandable fashion. 10:31:43 10:31:47 10:31:49 10:31:53 10:31:56

But let's start at the bottom. 10:31:57
The device/function box. What is that? Well, 10:31:59
that is the actual USB device or device 10:32:03
portion or function, such as the mouse, the 10:32:08
memory stick, the interface control. That's 10:32:10
the thing that actually does something. 10:32:13
But on top of that, we have the 10:32:16
USB multi-host device controller. What is 10:32:20
that? Well, every USB device has to be a USB 10:32:24
device controller, okay? So we have the USB 10:32:28
device, the mouse or the memory stick. 10:32:32
On top of that, we have the device 10:32:34
controller and it communicates -- has to 10:32:36
communicate with the host. So it speaks the 10:32:38
USB language, whereas the mouse or the memory 10:32:40
stick can't communicate USB language; the 10:32:43
microcontroller communicates USB language and 10:32:47
speaks to the host. 10:32:50
Now, this -- this time we have a 10:32:51
special type of USB device controller; it's a 10:32:53
multi-host. So basically we're taking -- 10:32:56
we're creating a multi-host device controller 10:32:59
where the controller must speak to two hosts 10:33:02
at the same time, and they must coordinate 10:33:05

together because they're both trying to access that same device or that portion of that same device at the same time. We have to link them together and coordinate them, so that's what the USB multi-host controller device is. 10:33:08 10:33:10 10:33:12 10:33:16 10:33:19

Above that, endpoints. Mr. Bohm talked about the endpoints a little bit. So we're communicating data back and forth here. 10:33:22 10:33:26 10:33:28

Where do we store that data? 10:33:31

Well, the endpoints are the memory buffers. It stores information such as what type of device it is, what the address of the device is, if you want to send data up to a host, you temporarily store that information in the endpoint buffer before it goes to the host. So basically the endpoints are the memory-holding information between the device and the host. 10:33:33 10:33:37 10:33:42 10:33:45 10:33:47 10:33:49 10:33:51 10:33:53 10:33:55

And in this particular case, we have two sets of memory, two sets of endpoints reserved for each host because they are separate and distinct. All right. 10:33:56 10:33:57 10:34:00 10:34:03

So we've got the device, we've got the controller that can talk USB to both hubs, 10:34:04 10:34:07

and we've got the memory to hold the data to go back and forth on the hub's bus. 10:34:10 10:34:13

How do we actually get that data out onto the bus? We have to have an upstream port. That's the thing that actually connects the device to the USB bus, to communicate with the host. 10:34:16 10:34:18 10:34:20 10:34:22 10:34:27

And you'll see the designation PHY, P-H-Y; that's basically shorthand for physical. It's the physical signals that gets transported over the USB bus cable to communicate with the first host. But we also call it the port. In this case, since we're talking upstream to the host, it's an upstream port. So those are the components. 10:34:28 10:34:32 10:34:35 10:34:37 10:34:42 10:34:44 10:34:47 10:34:51

And what I'm going to do now is basically walk through the claim language and describe how the claim language describes what those components have to do. 10:34:54 10:34:56 10:34:58 10:35:02

Q. And, Mr. Zatkovich, at the top here, you have a head unit and an iPhone. Those are not in the patent, are they? 10:35:04 10:35:06 10:35:08

A. Those are not in the patent. Those are just two example hosts. An iPhone is a 10:35:09 10:35:11

computer and a head unit is a computer. They are valid hosts. So these are valid examples of what type of hosts might communicate. 10:35:14 10:35:18 10:35:21

Q. And we'll see those annotations on later slides? 10:35:24 10:35:27

A. Right. I am using those throughout because they are basically the hosts that will be connecting to the accused devices. All right. 10:35:27 10:35:30 10:35:32 10:35:34

So the patent claim is laid out in elements. So we have multiple -- basically three paragraphs here, each of which is a claim element in and of itself. 10:35:34 10:35:39 10:35:43 10:35:45

At the top, that line that says, "USB multi-host device comprising," that's called a preamble. There is a little note there. In this particular case, the preamble, the Court has decided that the preamble is not limited, meaning it's not necessary, it is not a requirement, it is not part of the invention; it is basically just an introduction to the rest of the claim elements. 10:35:47 10:35:49 10:35:52 10:35:55 10:35:58 10:36:00 10:36:03 10:36:05 10:36:07 10:36:09

So I am going to start proceeding 10:36:09

through the claim elements. All right. What is on the first claim element? A shared USB device block. 10:36:12 10:36:14 10:36:17

So we talked about the device block down here, but in this case, it's not just USB device or USB function; it is a USB device block. 10:36:19 10:36:24 10:36:27 10:36:30

What is a device block? Well, fortunately, the Court has given us a special definition of what the USB device block is. It is a USB device or segments of a USB device. We'll stop there. So it can be an entire USB device, like USB printer or a USB memory stick, or it can be just a portion, a segment, any part of that device. 10:36:31 10:36:34 10:36:37 10:36:41 10:36:47 10:36:50 10:36:53 10:36:55

So, for example, if the USB device was a memory stick, a USB device block may be just a portion of that that doesn't read, memory reads or storage or memory rights, or it might be the whole memory stick. So that's an example of what a USB device block might be. 10:36:57 10:37:01 10:37:06 10:37:09 10:37:11 10:37:14 10:37:17

So the claim has a shared USB device block, and now it's going to be 10:37:18 10:37:21

operable to be simultaneously configured by two or more USB hosts. Basically it means once hosts are connected and configured, they will be simultaneously, at the same time, they will be connected to that shared USB device block. 10:37:23 10:37:27 10:37:32 10:37:35 10:37:38 10:37:42

And I have a little -- well, that's the essence of that. We'll talk more about the simultaneously configured. 10:37:43 10:37:45 10:37:47

So now we've talked about the shared USB device block. Let's talk about the controller. As I mentioned, this is that special controller that must control two hosts at the same time. So we have a controller configured to establish concurrent respective dedicated USB connections. All right. 10:37:54 10:37:56 10:37:59 10:38:02 10:38:05 10:38:08 10:38:11

So what is a respective dedicated USB connection? The Court has given us a definition for that, too. And it is simple. It's a USB connection that is not shared. There are some exceptions to that, but in this case, they are really -- the exceptions don't apply. 10:38:15 10:38:16 10:38:20 10:38:24 10:38:28 10:38:31 10:38:35

So basically a respective 10:38:35

dedicated USB connection is just a USB connection that is not shared. And I am illustrating that here by saying the first host has a dedicated connection and the second host has a separate dedicated connection. That's basically all that claim element means. 10:38:36 10:38:39 10:38:42 10:38:45 10:38:48 10:38:52

What are they connected to? Well, they are connected between the shared USB device block and the two or more hosts, naturally. All right. 10:38:55 10:38:59 10:39:03 10:39:05

So a lot of complicated language, but basically we have a shared USB device block that's going to be connected via two separate connections to the two hosts. All right. 10:39:06 10:39:09 10:39:11 10:39:14 10:39:17

The next claim element is a very special claim element. It is -- in fact, it describes a function, and this function is only in this claim; it's in none of the other claims in the patent. So this is why it is a special claim, so let's focus on this one. 10:39:17 10:39:20 10:39:24 10:39:26 10:39:28 10:39:32

All right. In this claim element, it says, "Wherein the controller" -- I have a little animation here. Try to enjoy that for 10:39:35 10:39:40 10:39:44

the time being. I'll explain what that is. 10:39:46
"The controller is operable to receive and 10:39:49
respond to simultaneous respective USB access 10:39:51
requests." Okay. 10:39:54
What does that mean? All right. 10:39:54
So we know the controller, that controller 10:39:56
must be able to respond to simultaneous USB 10:40:00
access requests; in other words, receive and 10:40:05
respond, both. 10:40:08
So if I have two hosts and they're 10:40:10
both trying to talk to this device at the same 10:40:12
time, this special controller has to be able 10:40:14
to receive those requests and respond to them 10:40:16
at the same time, if necessary. Okay? It 10:40:19
doesn't mean they are going to get access to 10:40:22
the device, okay. Depending on the device, 10:40:24
you can't -- sometimes a device won't take -- 10:40:27
can't serve as two hosts at the same time, but 10:40:30
the controllers have to process -- have to 10:40:33
arbitrate that, in a sense, okay? 10:40:35
And who are those accesses coming 10:40:38
from? They're coming from the two or more USB 10:40:40
hosts. 10:40:43
And what do they want to do? They 10:40:43

want to access the function of the shared device. 10:40:45 10:40:47

So again, a complicated claim element, very simple. We have the control, special controller, which has to handle simultaneous requests and responses to that USB device block. 10:40:47 10:40:52 10:40:54 10:40:56 10:40:57

Q. And, Mr. Zatkovich, you have a memory stick annotated on this one as well? 10:41:00 10:41:02

A. Yeah. Before we get to that, the reason why I put in this funky animation is I want to illustrate the fact that in real life, how USB controller works is that it -- again, since the device can't talk to the host, the host has to keep polling the device, do you have data, do you have data, do you have data. It does that hundreds of times a second. 10:41:05 10:41:07 10:41:09 10:41:12 10:41:16 10:41:18 10:41:21 10:41:23

So for a normal USB, it would have to be able to accept requests and responses from one host to a device hundreds of times a second. In this case, if you have two hosts, that special microcontroller multi-host device controller has to accept requests and responses hundreds of times a second from both 10:41:27 10:41:30 10:41:32 10:41:36 10:41:39 10:41:43 10:41:45

hosts at the same time. That's why this claim is so special. I think that takes care of that one. 10:41:48 10:41:51 10:42:01

Now let's talk about the memory stick. So let's give an example of what a memory stick would -- how it would operate if it were a multi-host device. 10:42:02 10:42:03 10:42:05 10:42:08

I've got a memory stick. I plug it into both hosts, and remember, we have to have a shared device box. So let's pretend that the portion -- that segment of that device that we're going to share will be the ability to read from that memory stick; not necessarily write, but read. 10:42:12 10:42:15 10:42:18 10:42:21 10:42:25 10:42:27 10:42:30

So let's say one of the hosts doesn't have the possibility to read and write. So the first host will write photographs to that memory stick and the second host could read photographs from that memory stick. 10:42:31 10:42:37 10:42:38 10:42:42 10:42:45 10:42:47

So both devices could read from that memory stick, but only one device could write. That would be an example of a memory stick that has two functions, to read and to 10:42:48 10:42:51 10:42:54 10:42:56

write, but only the read function is shared between the two. That would be -- a USB device block would be the portion of that. 10:43:00 10:43:01 10:43:05

Q. Now, we talked a lot about the patent and we talked about basic concepts. Should we talk about the Aptiv product? 10:43:08 10:43:11 10:43:15

THE COURT: Before we do that, Mr. Fenton, why don't we take a mid-morning break. It is a good point anyway since you were going to change topics. 10:43:17 10:43:19 10:43:22 10:43:24

So, same caution as always; don't go back and start talking about anything you're hearing at this point. You have to wait until we're done. But just take a short 5 to 10-minute break, and then we'll resume as soon as everybody is ready. Okay? 10:43:28 10:43:30 10:43:31 10:43:34 10:43:37 10:43:40

(Whereupon, the jury was excused from the courtroom.) 10:43:42 10:43:45

THE COURT: Okay. Take a short break and try to be back somewhere between 10 of and 5 of. Okay? Stand in recess. 10:44:08 10:44:10 10:44:13

(Whereupon, a 10-minute recess was taken at 10:45 a.m.) 10:44:18 10:44:20

THE COURT CLERK: All rise. 10:54:07

THE COURT: All right. Have a seat, please, and you can get the jury. 10:55:00 10:55:03

(Whereupon, the jury entered the courtroom.) 10:55:06 10:55:08

THE COURT: Mr. Fenton, you may proceed. 10:55:34 10:55:36

BY MR. FENTON: 10:55:37

Q. Mr. Zatkovich, one housekeeping matter that I missed. I want to go back to it. Will you take a look in your binder at Exhibit 94? 10:55:38 10:55:40 10:55:43 10:55:46

A. Exhibit? 10:55:46

Q. 94. 10:55:47

A. 94. I have that. 10:55:49

(Whereupon, Trial Exhibit 94 was introduced.) 10:55:49 10:55:49

BY MR. FENTON: 10:55:54

Q. And what is Exhibit 94? 10:55:54

A. That's my resume. 10:55:55

MR. FENTON: Your Honor, at this time we offer Exhibit 94 for admission. 10:55:58 10:56:00

MS. DURIE: No objection. 10:56:03

THE COURT: All right. Received. 10:56:04

BY MR. FENTON: 10:56:08

Q. Before the break, we were talking about the general concepts. So do you have slides prepared today to talk about the Aptiv product? 10:56:09 10:56:11 10:56:13 10:56:15

A. Yes. I'll start with a very high level overview of the Aptiv product. It is -- well, there's some exhibits that I think we want to introduce. 10:56:16 10:56:19 10:56:24 10:56:26

Q. Will you pause one second? Just real quick, let's just walk through this real quick. 10:56:37 10:56:38 10:56:40

Exhibits 5, 6 and 7 in your binder, will you look real quick at those? 10:56:40 10:56:45

A. Yes. Exhibit 5 -- I have them, yes, those are the right ones. 10:56:47 10:56:51

Q. And what are those documents? 10:56:52

A. Those are documents from Aptiv describing their device. Among many other items that I reviewed, I chose those to pull specific extracts out so I can explain the device. 10:56:53 10:56:58 10:57:01 10:57:04 10:57:07

(Whereupon, Trial Exhibits 5, 6 and 7, respectively, were introduced.) 10:57:07 10:57:07

MR. FENTON: And to the extent 10:57:07

that those haven't been admitted, we offer those into evidence, Exhibits 5, 6 and 7. 10:57:09 10:57:11

MS. DURIE: No objection. 10:57:13

THE COURT: Okay. Received. 10:57:14

MR. FENTON: Okay. 10:57:16

THE WITNESS: There we go. All right. 10:57:28 10:57:29

So Exhibit 5 is basically a presentation that Unwired/Aptiv put together to provide a high level description of what their Boston chip did. And we'll be looking at this diagram in more detail. 10:57:29 10:57:33 10:57:38 10:57:42 10:57:47

One of the things I wanted to point out that I thought was interesting, up here it says, "Digital iPod out OTG." That's Apple's original name for the CarPlay product. Fortunately, they changed it. It was a little more descriptive. 10:57:49 10:57:51 10:57:53 10:57:58 10:58:01 10:58:04

There we go. Exhibit 6 is a large document describing the specifications of the Boston chip, itself. This is how this functions. 10:58:07 10:58:11 10:58:16 10:58:18

BY MR. FENTON: 10:58:18

Q. Before you move on from that 10:58:19

document, there are a couple words on here that I think it's worth talking about. 10:58:21 10:58:22

ASIC, what is an ASIC? 10:58:25

A. ASIC stands for Application Specific Integrated Circuit. Integrated circuit is a chip. Application specific means if you want to design a custom device for a particular function that's not normally a function, you would develop what's called an application specific integrated chip. 10:58:26 10:58:28 10:58:31 10:58:33 10:58:37 10:58:41 10:58:42

Q. And this document doesn't have Unwired or Aptiv or Delphi on it; it has something in the corner, IDK. 10:58:45 10:58:46 10:58:49

Do you see that? 10:58:51

A. Yes. 10:58:51

Q. What is that? 10:58:52

A. That is a separate company that Aptiv used to design and develop this particular ASIC chip, the Boston chip. 10:58:52 10:58:55 10:58:59

The last document, Exhibit 7, is a fairly complex diagram showing the internal logic, the internal function of the Boston chip product. There is a lot of pieces on there that we don't need to talk about, so I 10:59:04 10:59:10 10:59:13 10:59:16 10:59:18

will be focusing on some of them, but we'll go back to the highest level diagram that I like, which is at this level. 10:59:21 10:59:25 10:59:27

So over here, we have the host side. It's not on the Boston chip, of course; this represents the head unit. 10:59:31 10:59:34 10:59:39

On the other side, we have the iPhone, which is going to be the other host, and that, of course, is not part of the chip. But everything in between is on the Boston chip. 10:59:40 10:59:42 10:59:46 10:59:48 10:59:50

So the first thing that's on the Boston chip is a hub. It connects to the host via, of course, the upstream port because it is the host. That gives the hub unit additional ports that it can use to communicate with the USB devices. 10:59:52 10:59:53 10:59:57 11:00:00 11:00:03 11:00:05

So in this particular case, we are showing the iPhone and gray box which represents another device, such as a memory stick, that you can plug into the Boston chip device. 11:00:07 11:00:09 11:00:13 11:00:16 11:00:19

And the next slide is the same thing, but as I mentioned before, the iPhone 11:00:22 11:00:25

wants to be the host when it is talking to the head unit. 11:00:27 11:00:29

So this diagram, it's the same thing, only it represents what happens when the iPhone does what's called role reversal. You heard that term, "role reversal." That's when the iPhone first connects as a device and it says, I want to do CarPlay and it reverses its role, and as a result of that, the Boston chip routes its downstream port to the bridge so that it can be a host. 11:00:31 11:00:34 11:00:35 11:00:39 11:00:41 11:00:44 11:00:48 11:00:51 11:00:55

So we saw it switching from this connection as a downstream port to routing the iPhone via upstream port to this thing in the middle, which is the bridge. And we're going to talk a lot about the bridge. 11:00:59 11:01:02 11:01:07 11:01:10 11:01:13

The bridge has two sides. The device A side of the bridge talks to the head unit host and the device B side of the bridge talks to the iPhone host. And we'll talk -- we'll switch to a more detailed version of this, this diagram. 11:01:15 11:01:19 11:01:22 11:01:25 11:01:28 11:01:30

Q. And this diagram that you have been talking about is on Exhibit 5; is that 11:01:32 11:01:33

correct? 11:01:35

A. Pardon? This is Exhibit 5, correct. 11:01:35

All right. 11:01:42

We're going to explain how I found 11:01:43

the elements of the claim 23, how they were 11:01:46

operated within the Aptiv device, but we're 11:01:49

going to continue looking at the device first. 11:01:52

Here is that big diagram. The 11:01:56

bridge part that I pointed out on the other 11:01:58

device, on the other diagram, this is where 11:02:01

the bridge is. 11:02:05

Q. And, Mr. Zatkovich, this is 11:02:05

Exhibit 7; is that correct? 11:02:07

A. This is Exhibit 7. 11:02:07

Q. And this is Aptiv's figure? 11:02:08

A. All these documents came from Aptiv, 11:02:11

that is correct. 11:02:13

So what we are going to do is 11:02:15

we're going to kind of isolate on that, I'm 11:02:17

outlining specific pieces of that and then 11:02:26

we're going to load that. There you go. All 11:02:28

right. 11:02:38

So this is the bridge product of 11:02:38

the last diagram that we talked about. So 11:02:41

what is the bridge? Well, we see the two green boxes on either side. One of those boxes is the side that talks to the head unit, one of those boxes is the side that talks to the iPhone. 11:02:43 11:02:46 11:02:50 11:02:53 11:02:55

Those are UDCs, USB device controllers. Remember I said every USB device has a USB device controller? That's what those are. 11:02:56 11:03:01 11:03:03 11:03:06

And separately, each of those USB device controllers could talk -- the one USB device controller could talk to the head unit all by itself, the other USB device controller could talk to the iPhone all by itself, but as soon as you connect those together and you coordinate them, put them together with some glue, we now have what? We have a multi-host USB device controller, assuming that it can simultaneously connect to and talk to two different hosts and have coordinated together in a fashion so that they can talk to a shared USB device block. 11:03:07 11:03:11 11:03:14 11:03:16 11:03:18 11:03:21 11:03:24 11:03:26 11:03:30 11:03:34 11:03:36 11:03:39 11:03:41

All right. What is -- what is the glue that holds it together? The glue that 11:03:43 11:03:45

holds it together is this MCU, that's the microcontroller unit, and that's basically the microprocessor. It has a bunch of software on it and I am kind of color-coding it. 11:03:48 11:03:52 11:03:54 11:03:57

The blue software is related to the device function and the green -- I'm sorry, the blue software is what glues the two halves of the controller together to create one multi-host device controller. All right. 11:04:00 11:04:02 11:04:03 11:04:07 11:04:09

So what is the controller controlling? It's controlling the bridge in the middle, which is the FIFO buffers. All right. What is FIFO? FIFO stands for first in/first out. And the purpose of those FIFO buffers is to allow the Apple host, the iPhone host, to talk to the head unit host. 11:04:11 11:04:14 11:04:19 11:04:23 11:04:25 11:04:30 11:04:33

So a FIFO, first in/first out. The Apple sends memory into that buffer. The first thing that comes out will be that same data that goes to the head unit host. So we have multiple FIFO buffers together being controlled by these two UDCs glued together. All right. So that's a quick overview. 11:04:35 11:04:39 11:04:41 11:04:43 11:04:47 11:04:51 11:04:58

We also see some black boxes 11:05:01

there, small black boxes at the bottom. Those are the P-H-Ys, the PHYs. If you remember, those are the upstream ports. That's how they connect to the host. That's how they connect to the host via the USB hub. All right. 11:05:03 11:05:06 11:05:10 11:05:12 11:05:14

Well, let's take that segment and go back to the claim. All right. So if you remember, the first thing we have is the shared USB device block. It is operable to be simultaneously configured by two or more USB hubs. Shared USB device block can be any portion of the USB device. And I have summarized what I consider all of the aspects of that is. 11:05:24 11:05:31 11:05:36 11:05:38 11:05:41 11:05:44 11:05:47 11:05:52 11:05:55

The USB device block at the bottom is the function of transferring data between the two hosts, and the microprocessor, the MCU logic, that coordinates the data transfers through the FIFO buffers. 11:05:56 11:06:01 11:06:04 11:06:09 11:06:11

So again, we have the multi-host controller, we have the FIFO buffers. This is the shared function, the shared USB device block that's used to connect the one host to the other host with the assistance of the 11:06:13 11:06:16 11:06:20 11:06:23 11:06:26

microprocessor software. 11:06:30

All right. That, I believe, 11:06:32

covers that. 11:06:36

Q. Okay. 11:06:37

Mr. Zatkovich, do you have an 11:06:37

opinion as to whether or not the first element 11:06:39

of claim 23 is satisfied by the Boston 11:06:42

product? 11:06:45

A. Yes, the Aptiv product does practice 11:06:45

the first element, including the USB device 11:06:48

block. The Boston chip includes a shared USB 11:06:50

device block operable to be simultaneously 11:06:55

configured by two or more USB hosts. 11:06:57

And again, for the record, all of 11:07:00

this is occurring on exhibit -- 11:07:02

Q. This is coming out of Exhibit 7, is 11:07:05

it not? 11:07:07

A. 7, yes. Thank you. 11:07:07

All right. So let's take that off 11:07:10

and let's go into the next thing. 11:07:13

All right. So we have the 11:07:16

controller, and remember, this is the special 11:07:17

controller, the multi-host device USB 11:07:19

controller configured to establish concurrent 11:07:22

respective dedicated USB connections. 11:07:25

And we know that the Aptiv Boston 11:07:27

chip will allow you to have the head unit and 11:07:30

the iPhone connected and configured at the 11:07:34

same time. We tested it. 11:07:37

And what are they connected 11:07:39

between? The controller establishes the 11:07:42

connection between that shared USB device 11:07:46

block, the FIFO buffers and the logic, and the 11:07:49

two hosts. 11:07:53

Okay. I have checked that off. 11:07:57

Q. Mr. Zatkovich, do you have an opinion 11:07:59

as to that claim limitation? 11:08:01

A. Yes. The Boston chip practices the 11:08:03

second claim element of a controller 11:08:06

configured to establish concurrent respective 11:08:09

dedicated USB connections between the shared 11:08:12

USB device block and the two or more USB 11:08:15

hosts. All right. 11:08:20

So the last element to claim 23, 11:08:21

again, that's the special one; that's the one 11:08:24

that has the simultaneous accesses. So we 11:08:27

have the special multi-host USB device 11:08:30

controller. It's operable to receive and 11:08:34

respond to simultaneous respective USB accesses sent by two or more USB hosts for accessing function of the shared USB device block. 11:08:37 11:08:40 11:08:45 11:08:48

Well, I know that it does that, but how do you know that it does that? I put together another little animation using Spotify as an example. So let's take the scenario where I am a user in the car, I select the Spotify music icon. 11:08:48 11:08:50 11:08:54 11:08:59 11:09:03 11:09:06

What happens next? The head unit sends the message back down to the iPhone that says, they have selected the Spotify icon. That's a request. When it receives an acknowledgment, that's a response. 11:09:10 11:09:13 11:09:17 11:09:20 11:09:22

The iPhone says, I got your message. I am going to send you a song or a list of songs to be played. That's a request to respond, not necessarily simultaneously. 11:09:25 11:09:27 11:09:31 11:09:34

Then what happens? Well, we have to start playing music; right? So the user requests the song to be played, and we have a little animation here. What happens is the iPhone takes this music file and chops it up 11:09:38 11:09:40 11:09:43 11:09:46 11:09:48

into little parts, okay, so thousands -- the song is broken up into thousands of parts that get sent one at a time, again, hundreds of times a second, and again, the iPhone is hundreds of times a seconds requesting what's called a data out, data out, data out, data out. And that was what gets sent to the USB shared device block, which again, the purpose of that is to transfer data from one host to the other. 11:09:52 11:09:57 11:10:00 11:10:02 11:10:06 11:10:08 11:10:12 11:10:16 11:10:18 11:10:21

And, of course, it's doing its job. It receives that data out packet from the phone, transfers it across the bridge to the other side so that the other half of the controller can receive that and send it to the head unit. 11:10:21 11:10:23 11:10:27 11:10:30 11:10:32 11:10:36

Now, the head unit with the green double line is now doing data in, data in, data in. And they are -- again, they are both doing that hundreds of times a second, and that is one example of simultaneous requests and responses. That's -- and that's how you play music from an iPhone. 11:10:37 11:10:40 11:10:43 11:10:47 11:10:49 11:10:53 11:10:58

Q. Just to clarify, when the -- you said 11:11:00

when the data is being sent from the UDC-US to the head unit, what is the -- what is happening there? Is it just sending it? 11:11:04 11:11:08 11:11:10

A. You mean for the head unit on the right? 11:11:14 11:11:16

Q. Correct. 11:11:17

A. It's -- the head unit is continually requesting, do you have any data, do you have any data, and the right side of the controller is saying yes, I have data, I have data. 11:11:18 11:11:21 11:11:22 11:11:25

Now, the data that's being sent from the iPhone will be sent faster than it can play. So in that case, at some point, these FIFO buffers are going to full up faster than the head unit can pull them off. So again, part of the glue between controlling access to the device is the MCU, the MCU logic up here. 11:11:28 11:11:31 11:11:35 11:11:38 11:11:42 11:11:44 11:11:46 11:11:54

When the FIFO buffers fill up, it gets interrupted. When the FIFO buffer is filled up, what are we going to do? It will start pausing the iPhone. It says, don't play, don't play, don't play. And eventually, those FIFO buffers will be cleared and the 11:11:54 11:11:57 11:11:59 11:12:02 11:12:04 11:12:07

iPhone will continue sending the items. Did that answer your question? 11:12:09 11:12:15

Q. Yes, it did. 11:12:17

A. Okay. And that's basically where the Boston chip includes the controller is operable to receive and respond to simultaneous respective USB access requests sent by the two or more USB hubs for accessing a function of the shared device block. Again, the function of the shared device block is transferring data from one host to another. 11:12:17 11:12:25 11:12:29 11:12:30 11:12:34 11:12:38 11:12:41 11:12:44

Now, in this example I showed data going from the iPhone to the head unit. The head unit can do exactly the same thing. There is actually two sets -- we see the -- in the middle there, we see bulk in, bulk out. Can you see that? Bulk in, bulk out, interrupt in, interrupt out. These are the different FIFO buffers. 11:12:46 11:12:48 11:12:51 11:12:53 11:12:56 11:13:00 11:13:04 11:13:07

So there is one set of bulk out and bulk in FIFO buffers that go in this direction, and there's one pair of FIFO bulk in bulk out FIFO buffers that go in this direction. So basically both the host and the 11:13:08 11:13:10 11:13:14 11:13:16 11:13:20

iPhone can perform the same shared USB device block functions. 11:13:23 11:13:27

Q. Okay. 11:13:28

Mr. Zatkovich, do you have an opinion about this last claim element? 11:13:29 11:13:30

A. Yes. As I mentioned, the Boston chip includes the controller -- where the controller is operable to receive and respond to simultaneous respective USB access requests sent by the two or more USB hosts for accessing a function of the shared USB device block. 11:13:32 11:13:36 11:13:38 11:13:40 11:13:43 11:13:46 11:13:49

Q. And, Mr. Zatkovich, do you have an opinion as to whether the Aptiv product practices claim 23? 11:13:49 11:13:51 11:13:54

A. Yes, it practices each individual claim, and therefore, it practices the claim as a whole. 11:13:55 11:13:58 11:14:01

Q. Thank you. Should we look at claim 24 then? 11:14:02 11:14:09

A. Claim 24. We're having fun. All right. So I am going to walk through claim 24 just like I did claim 23. 11:14:10 11:14:14 11:14:17

The difference -- claim 23 is 11:14:19

what's called an independent claim. It sits all by itself. Those three claim elements all by themselves constitute an invention, okay? 11:14:21 11:14:24 11:14:28

But you can have what's called dependent claims which tack on additional claims. So if you want to add more functions to that invention, you can create a dependent claim, and that's what we have here. 11:14:31 11:14:33 11:14:36 11:14:39 11:14:42

So we can see it starts out with "USB multi-host function of claim 23," so we start with all the same functions that we had in claim 23 and we add onto that. We'll walk through what we're adding. 11:14:43 11:14:47 11:14:50 11:14:52 11:14:55

Q. And, Mr. Zatkovich, what is that first line of the claim called? 11:14:56 11:14:58

A. That's the preamble. And again, we know that the preamble is not limiting, which means it's not really describing a requirement of the invention, itself, it's just an introduction. 11:14:59 11:15:02 11:15:05 11:15:07 11:15:09

All right. So this might look familiar because this is an exact copy of an element from the previous, it is just giving us context. It is saying "wherein 11:15:11 11:15:14 11:15:18 11:15:19

establishing the concurrent respective dedicated connections between the shared USB device block and the two or more hosts." 11:15:23 11:15:25 11:15:28

So where claim 23 establishes two separate dedicated connections from the host to the device, keep that context in mind, what happens next? In this particular context, we have the controller, again, that special controller, is operable to maintain respective dedicated address, configuration and response information for each of the two hosts. All right. What is that? All right. 11:15:32 11:15:36 11:15:38 11:15:43 11:15:47 11:15:49 11:15:52 11:15:56 11:15:59

So the dedicated address configuration and response information. So as I mentioned, whenever you add a USB device to the -- I'm sorry, to the USB bus. Sorry. Each one -- each host has to have its own address. Each host will actually have a separate configuration and each host will have the ability to have a separate response to information. 11:16:02 11:16:05 11:16:08 11:16:14 11:16:22 11:16:25 11:16:28 11:16:32 11:16:35

Where do we store that? Well, we talked about storing that at the endpoint. That's not required here, but we'll see that. 11:16:36 11:16:39 11:16:41

All this claim requires is that each host of the multi-host device controller has the ability to maintain a separate address and configuration and response information for each host. And, in fact, this illustrates what that means. 11:16:43 11:16:49 11:16:51 11:16:55 11:16:59 11:17:01

So let's go to an example of what this means. So this example, I'm choosing a printer/scanner as the example device. So the first host is going to configure the printer/scanner and the second host is going to configure the printer/scanner. If you remember the term that we used was enumeration. We're going to enumerate that device. 11:17:02 11:17:05 11:17:10 11:17:14 11:17:18 11:17:20 11:17:22 11:17:25 11:17:28

So the first host sends an enumeration, starts the enumeration process by sending a request down to this multi-host device, and it responds with, I am a printer. I am a printer, Item 1002, and that gets sent back to the host. 11:17:28 11:17:30 11:17:33 11:17:37 11:17:45 11:17:51

And then the second host comes along and says, I want to discover you and configure you, but in this case, the second 11:17:52 11:17:54 11:17:56

host gets a configuration of printer/scanner, all right? So we have potentially a shared function between the two of which is a portion of that device, the printer, where, in the case of the second host, it might have an additional function called the scanner. 11:17:59 11:18:03 11:18:06 11:18:08 11:18:12 11:18:14

Why would we have two different hosts configure them separately? Several reasons. The most important thing is that the patent claim allows for that. It allows you to enumerate the device and have two separate addresses, two separate configurations, and one response to information. 11:18:16 11:18:18 11:18:21 11:18:24 11:18:28 11:18:31 11:18:37

One example would be that first host doesn't have the proper drivers or software to talk to the scanner, so it only chooses to talk to the printer. 11:18:38 11:18:40 11:18:42 11:18:44

The second host does, however, have that special printer/scanner software so that it gets configured as a full printer/scanner. So that would be an example. And that basically is the extent of claim 24. All right. 11:18:46 11:18:48 11:18:51 11:18:53 11:19:01 11:19:05

So now I'll show how the Aptiv 11:19:05

product practices that with a new item. All right. As I mentioned before, that claim language there comes directly from claim 23. We already know what claim 23 does, but it's the process of establishing concurrent separate connections between the hosts and the shared device block. And we know that the iPhone and the head unit can both talk to the device block at the same time. But we are going to add something to that, as we discovered. 11:19:09 11:19:15 11:19:18 11:19:20 11:19:24 11:19:28 11:19:32 11:19:34 11:19:37 11:19:41 11:19:44

The controller is operable to maintain respective dedicated address configuration and response information for each of the two hosts. So I tested this, but the documentation supports this, but I've tested this as well. 11:19:45 11:19:47 11:19:49 11:19:52 11:19:55 11:19:58

When the head unit does the enumeration of the Boston chip, it returns, for example, a product ID. You see on the side there, product ID host-to-host bridge. Sounds logical. That's basically what Aptiv chose to call the product ID where they configured it from the head unit. 11:19:59 11:20:02 11:20:06 11:20:10 11:20:14 11:20:19 11:20:21

But when an iPhone connects to discover that device, it gets back at potentially a different address with a product ID of iAP2 NCM accessory. What is that? 11:20:24 11:20:31 11:20:35 11:20:38

Well, again, that's the product ID that Aptiv chose to put in there, but it represents what Apple requires that it talk to. In other words, Apple will not talk to a device in CarPlay unless it's iAP compatible and NCM compatible. 11:20:44 11:20:51 11:20:54 11:20:56 11:20:59 11:21:02

IAP is the method for authenticating the device. Apple doesn't want to talk to just any device. It has to be a registered authorized device that Apple has approved. And that's the process that you go through getting iAP to verify that it is an authentic Apple CarPlay device. 11:21:06 11:21:07 11:21:09 11:21:12 11:21:15 11:21:18 11:21:22

NCM is how it -- for example, when we did the Spotify data transfer, it is using the NCM protocol to do that music transfer. And that pretty much is an example of how the controller -- remember, there is the special multi-host controller. It maintains two separate addresses, two separate 11:21:24 11:21:28 11:21:31 11:21:36 11:21:39 11:21:43 11:21:45

configurations and two separate response information for each host. 11:21:48 11:21:50

Q. So, Mr. Zatkovich, do you have an opinion as to that last element of claim 24? 11:21:52 11:21:54

A. Yes. The Boston chip includes the controller that's operable to maintain respective dedicated address configuration and response information for each of the two or more USB hosts. 11:21:56 11:22:00 11:22:02 11:22:05 11:22:07

Q. Okay. 11:22:08

So because this is a dependent claim, I am adding a couple more questions here. It cites back to claim 23. 11:22:09 11:22:11 11:22:13

So again, did you have an opinion as to whether the Boston chip practices claim 23? 11:22:17 11:22:19 11:22:23

A. Yeah. As I mentioned, it practices all the claim elements of claim 23, so the Boston chip practices claim 23, and now we tack on the additional requirements, and I checked through those, so in total, the Boston chip practices the entirety of claim 24. 11:22:23 11:22:25 11:22:28 11:22:31 11:22:36 11:22:38

Q. Thank you. 11:22:40

Now, before you said you were 11:22:41

testing the -- testing the system, what was the test like? Did you test both sides of the system? How did that work? 11:22:43 11:22:47 11:22:49

A. Well, when I rented the Yukon GMC, I didn't want to rip out the -- it was an expensive car. I didn't want to rip out the dash and rip out the device, potentially damaging the device, but it wasn't necessary. I was able to plug the analyzer into the port and then plug the iPhone into that, and the analyzer could see every -- all the signals going back and forth from the iPhone to the bridge which would then be relayed to the head unit. 11:22:51 11:22:57 11:23:00 11:23:02 11:23:05 11:23:07 11:23:10 11:23:12 11:23:15 11:23:18 11:23:22

And again, the purpose was not to determine exactly how it worked from that; it was just to verify that all the documentation that I had read on how it worked and how it communicated was consistent with how I tested the device. 11:23:23 11:23:26 11:23:29 11:23:31 11:23:33 11:23:36

Q. Now, you also mentioned the iAP2 and NCM interfaces? 11:23:37 11:23:41

A. Yep. 11:23:43

Q. Let's just pick one since that's a 11:23:44

lot to talk through. The NCM interface is only listed on the left side and not on the right side. What is your understanding of how the NCM interface works? 11:23:47 11:23:50 11:23:52 11:23:56

A. Well, again, as I mentioned, the NCM interface is what's used to do the bulk of data transfers in the example that I provided. It's how the music data gets transferred from one end to another, for example, among other types of transfers. 11:23:57 11:24:00 11:24:03 11:24:06 11:24:09 11:24:12

Q. And which of the UDCs are involved in completing the NCM transfer? 11:24:12 11:24:15

A. Both of them. Both the head unit side and the iPhone side, both have to be NCM compatible and both have to be iAP compatible in order for this CarPlay device to work correctly. 11:24:17 11:24:19 11:24:23 11:24:25 11:24:28

So again, just because they have a different product ID doesn't mean they don't perform the same function. 11:24:29 11:24:32 11:24:35

Q. Should we turn to claim 25? 11:24:39

A. All right. Last claim. Only two elements. All right. 11:24:46 11:24:50

So the first claim element, a 11:24:55

respective USB interface circuit for each of the two or more USB hosts. All right. 11:24:58 11:25:01

So we talked -- well, I don't know if I specifically used the term "innovate circuit," but it's how the USB device, in this case, the multi-host USB device, communicates with the bus. 11:25:04 11:25:08 11:25:11 11:25:13 11:25:17

And if you'll recall, that's the upstream port, also called the PHY. So this is an example in the patent of how the -- where the interface circuit is, which is the upstream port to connect these guys to the bus. 11:25:18 11:25:20 11:25:24 11:25:29 11:25:32 11:25:35

All right. The next part of that is wherein each respective USB interface circuit, the ports, enable the USB multi-host device to transmit and/or receive data over the USB bus, which is basically what I just said. 11:25:38 11:25:40 11:25:44 11:25:47 11:25:50 11:25:55

So we have the ports. The ports allow you to transmit and receive data between the -- transmit and receive data over the USB bus. Pretty simple. 11:25:55 11:25:58 11:26:01 11:26:07

All right. 11:26:12

Q. Wait, Mr. Zatkovich, before we move on, do you have an opinion as to the second element of claim 25? I'm sorry. 11:26:12 11:26:14 11:26:16

A. I will when we get to the Aptiv device. 11:26:20 11:26:22

Q. Does Figure 3 infringe claim 25? 11:26:22

A. Right now I'm just still going through the claim. 11:26:26 11:26:28

So the next part of that is respective endpoint buffer; in other words, the separate endpoint buffer for each of the two or more hosts. And we talked about that briefly before. 11:26:29 11:26:30 11:26:33 11:26:36 11:26:39

The endpoint buffer is the memory that holds the information going back and forth, such as the device time, the address, temporarily holds the music data while the music data is being transmitted. 11:26:40 11:26:43 11:26:45 11:26:48 11:26:50

So the key point is that each host has a separate -- has a respective endpoint buffer to hold information. And the next part, of course, is we have that endpoint buffer, which is the memory, and its purpose is to store the respective -- the separate 11:26:52 11:26:55 11:26:58 11:27:03 11:27:06 11:27:07

dedicated address, the separate configuration and the separate response information leading to the two hosts. 11:27:10 11:27:13 11:27:15

And again, as part of the testing, we know that this endpoint buffer contains this respective -- this separate information for this host and this endpoint buffer would maintain separate information for this host. That would be an example. All right. 11:27:17 11:27:19 11:27:23 11:27:26 11:27:29 11:27:33

Let's see about -- I think you can pretty much guess how that's going to match to the Aptiv device, but we'll walk through that. All right. 11:27:35 11:27:38 11:27:41 11:27:45

So we have respective USB interface circuit, and I pointed that out before. It's these PHYs. That's the upstream port which connects to each of the hosts. And the purpose of that interface circuit is for -- enable the USB multi-host device, this entire device, to transmit and receive data over the USB bus. Of course, that's the purpose of the upstream port. 11:27:46 11:27:50 11:27:54 11:28:00 11:28:02 11:28:07 11:28:11 11:28:17 11:28:20

All right. Therefore, it's my opinion that the Boston chip includes a 11:28:22 11:28:27

respective USB interface circuit for each of the two or more USB hosts wherein each of the respective USB interface circuits enables the multi-host device to transmit and receive data over a USB bus. All right. 11:28:31 11:28:34 11:28:38 11:28:42 11:28:44

One last point now. We have the -- 11:28:48 11:28:52

Q. All right. Before we move on -- 11:28:52

A. Sure. 11:28:53

Q. -- do you have an opinion as to the second element of -- or the first element of claim 25? 11:28:54 11:28:55 11:28:58

A. I do. I stated that language already. 11:28:59 11:29:01

Q. Let me back up before that, though. 11:29:01

What is that top -- the preamble, your opinion of the preamble? 11:29:03 11:29:06

A. Again, this is another preamble, I forgot to mention it, but the same as with the others. This preamble is not limiting; meaning, it is just an introduction to provide context for the claim. 11:29:07 11:29:10 11:29:12 11:29:15 11:29:16

All right. So the last claim element, a respective endpoint buffer. Again, 11:29:18 11:29:21

we have the memory buffer for each of the two hosts that will each store a separate address, a separate configuration, and separate response information. 11:29:24 11:29:27 11:29:31 11:29:33

And we know that EP0 is the endpoints memory for both sides of the controller that store separate address information, separate configuration information and separate response information for sending data to the two hosts. Pretty straightforward. 11:29:34 11:29:40 11:29:44 11:29:49 11:29:51 11:29:52 11:30:01

So the bottom line is the Boston chip includes a respective endpoint buffer for each of the two or more USB hosts for storing respective dedicated address, configuration and response information for each of the two or more USB hosts. 11:30:02 11:30:05 11:30:10 11:30:13 11:30:16 11:30:18

Q. Okay. So -- 11:30:20

A. And as a reminder, this is all -- claim 23 is done on Exhibit 7. 11:30:21 11:30:24

Q. All right. 11:30:26

So I think -- so again, Mr. Zatkovich, what was your opinion as to whether the Aptiv product practiced claim 23? 11:30:27 11:30:29 11:30:31

A. As we mentioned, the Aptiv product practices claim 23. 11:30:35 11:30:38

Q. And do you have an opinion as to whether the Aptiv Boston 2 chip practices claim 25 in its entirety? 11:30:39 11:30:41 11:30:44

A. And because it practices the elements of claim 25, it also practices that claim as a whole. 11:30:46 11:30:48 11:30:52

Q. All right. 11:31:00

We've gone through a lot of claim language. Can we get out of the claims for a few minutes? 11:31:02 11:31:05 11:31:07

A. Let me get a drink of water. We're almost done. 11:31:07 11:31:10

Q. Okay. 11:31:13

Mr. Zatkovich, we heard before, we heard Mr. Bohm talking about some benefits. Do you want to talk through some of the benefits of the '243 having a multi-host device in the context of this case? 11:31:13 11:31:16 11:31:19 11:31:21 11:31:23

A. Yes. So we talked about, briefly, at least one or two of those already. But again, this is for car manufacturers. Certain car manufacturers are looking for certain 11:31:25 11:31:28 11:31:36 11:31:38

features. I call these The Big 3. The Big 3 features are single lane to the head unit, CarPlay enabled on all downstream ports and persistent USB connections when CarPlay is activated. 11:31:41 11:31:47 11:31:50 11:31:53 11:31:56

I'll walk through those. 11:31:57

So single lane to the head unit, you might have heard the term "single upstream, single cable." That, again, allows the head unit to be connected to the bridge by a single cable. It's cheaper, less wiring, less prone to failure. Very desirable. Therefore, the fact that the bridge unit connects to the head unit with a single upstream port, a single cable, provides that feature. 11:31:59 11:32:02 11:32:05 11:32:09 11:32:12 11:32:16 11:32:20 11:32:25 11:32:26 11:32:30

Next one: CarPlay enabled on all downstream ports. If you remember, we have this little gadget here that regardless of which port you plug into the iPhone, it -- the microcontroller will detect that and allow you to route that hub to the bridge so that it becomes CarPlay port. So that allows you to plug your USB cable from your iPhone into any 11:32:32 11:32:35 11:32:38 11:32:42 11:32:47 11:32:50 11:32:54 11:32:57

of the ports and any of them will be able to switch into CarPlay mode. 11:33:00 11:33:03

Again, very desirable feature; you don't have to figure out which port to plug in. Manufacturers love it. 11:33:05 11:33:07 11:33:10

Last but not least, persistent USB connections when CarPlay is activated. What does that mean? Well, in many circumstances, when the iPhone takes over as a host, some of these port functions are disabled. What manufacturers require, if you have a USB device already plugged into one of the ports, such as a memory stick, and you decide to plug your iPhone into another USB port and it switches the host mode, what the manufacturers want is that USB memory stick is still connected to the head unit and still active, so that's what persistence means. 11:33:11 11:33:16 11:33:19 11:33:24 11:33:28 11:33:31 11:33:35 11:33:38 11:33:40 11:33:43 11:33:45 11:33:48 11:33:51

And we know that Aptiv provides all of those features. In fact, it was a requirement of their clients to provide all those features. 11:33:54 11:33:57 11:33:59 11:34:02

Q. Now, Mr. Zatkovich, do you have an opinion as to whether or how those features 11:34:02 11:34:04

relate to the '243 Patent? 11:34:06

A. I do. My opinion is that if you 11:34:08

provide each and every one of those features, 11:34:12

then you necessarily have to practice the 11:34:15

claims of the patent. 11:34:17

Q. Did you take a look at the Microchip 11:34:20

Sandia product? 11:34:22

A. I did. I did a similar analysis on 11:34:23

that for the Microchip product. So -- 11:34:26

Q. And before we get into this one -- 11:34:31

A. Sure. 11:34:33

Q. -- what figure is this in this 11:34:33

drawing from? 11:34:35

A. This is Exhibit 292 at page 3. I 11:34:35

believe Mr. Bohm, the inventor, used this 11:34:39

diagram as well. And it's probably a good 11:34:41

idea to just point out some features here. 11:34:45

So this is the Sandia bridge, 11:34:47

okay? The Sandia bridge, we have it plugged 11:34:50

in here and we would have the iPhone or USB 11:34:56

devices connected here. So it has a bridge as 11:34:58

well. It's basically the same function 11:35:03

designed a little bit differently. It has the 11:35:05

multi-host controller here identified in these 11:35:08

boxes. I am not going to go through the detail, but it has the ports down here which can be configured as downstream or upstream ports. 11:35:11 11:35:11 11:35:13 11:35:18 11:35:21

Q. And then the other box in the corner down there, the microcontroller, is that a box also? 11:35:21 11:35:23 11:35:27

A. That's the microprocessor, just like the Apple device has the microprocessor to allow the logic of the two ports together. 11:35:27 11:35:30 11:35:34

So the Sandia Microchip device also provides a single-lane capability where its bridge device gets connected to the host units with a single cable feature. 11:35:38 11:35:41 11:35:43 11:35:46

When you plug the iPhone into any of the ports, in this case this device has four ports, you plug the iPhone into any of those four ports, it will be routed to the bridge and become an upstream host port. 11:35:51 11:35:54 11:35:56 11:35:58 11:36:01

And last but not least, if I have a memory stick or some other USB device already plugged into one of the ports and I plug in my iPhone and switch to a host mode, 11:36:06 11:36:08 11:36:10 11:36:13

that memory stick device will remain connected and functional to the head unit. So therefore, by association, the Sandia bridge device practices its own invention. 11:36:16 11:36:19 11:36:25 11:36:29

Q. Now, Mr. Zatkovich, did you also do a detailed analysis, you know, on the more detailed documents as well to show that the Sandia product practices the '243 Patent? 11:36:32 11:36:34 11:36:37 11:36:39

A. Yes. I have about 30, 40 pages discussing each component and many other diagrams of how they practice -- how Sandia practices its own invention. 11:36:43 11:36:45 11:36:49 11:36:52

Q. So do you have summary slides? 11:36:55

A. Yeah. I wanted to wrap up with just two basic concepts; the multi-host controller and the shared USB device. I'm pretty sure you remember what I'm talking about, but again, we have the controller here, the multi-host device controller, which again, is this special controller which must connect to both hosts at the same time. 11:37:00 11:37:03 11:37:08 11:37:13 11:37:16 11:37:19 11:37:22 11:37:24

So if we have, on the right side, the two green boxes, as you recall, each green box is plugged together as a single multi-host 11:37:27 11:37:29 11:37:33

controller in a coordinated fashion so they can simultaneously talk to the iPhone and the host. That's the multi-host device controller or the controller. 11:37:36 11:37:40 11:37:42 11:37:45

And last but not least is the USB device block. The USB device is the FIFO buffers in between the controller that provide the ability to transfer data; specifically transferring data between the two hosts which includes the microprocessor logic that coordinates the data transfers through those FIFO buffers. And that's it. 11:37:50 11:37:53 11:37:57 11:37:59 11:38:04 11:38:07 11:38:10 11:38:12

MR. FENTON: I pass the witness. 11:38:17

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CROSS-EXAMINATION 11:38:30

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BY MS. DURIE: 11:38:31

Q. Mr. Zatkovich, good morning. 11:38:31

A. Good morning. 11:38:33

Q. We have not met before, but I am Daralyn Durie, obviously one of the lawyers representing Aptiv. 11:38:35 11:38:38 11:38:41

I'd like to start where you started with TX-94 in evidence, if we could 11:38:42 11:38:45

please put that up. This is the resume that you submitted in connection with this case; right? 11:38:51 11:38:53 11:38:56

A. Correct. 11:38:56

Q. And it says, "eComp Consultants," at the top. That's your consulting company; right? 11:38:57 11:39:01 11:39:04

A. It is. 11:39:04

Q. And you do information, technology and patent litigation consulting? 11:39:04 11:39:06

A. That's correct. 11:39:08

Q. Now, you talked a little bit about your professional background. The last time you had a full-time technical job at a company was before 2000; right? 11:39:08 11:39:10 11:39:13 11:39:18

A. Meaning a company other than my own? 11:39:20

Q. Right. 11:39:22

A. No, actually the last time I had full-time employment at a company was 2008. 11:39:23 11:39:24

Q. Okay. 11:39:31

And which company was that? 11:39:32

A. That was Smith & Nephew. 11:39:34

Q. Okay. Fair enough. 11:39:37

And you founded your consulting 11:39:38

company in 2000? 11:39:41

A. Correct. I was doing part-time 11:39:42
consulting while I was working for other 11:39:44
companies. 11:39:46

Q. Okay. 11:39:46

Now, starting on page 6 of your 11:39:47
resume, you list the cases in which you have 11:39:49
testified as an expert; right? 11:39:52

A. Sample cases. 11:39:53

Q. Oh, this is just a sample? 11:39:55

A. I have probably been retained for 11:39:57
over 60 cases. 11:39:59

Q. Okay. 11:40:00

MS. DURIE: Well, let's just 11:40:00
scroll through, if we can, Mr. Glass. 11:40:01

BY MS. DURIE: 11:40:06

Q. So this goes on for quite awhile; 11:40:07
right? 11:40:10

A. Um-hmm. 11:40:11

Q. 13, 14, 15, 16, 17, 18. So that's 11:40:12
just a sample? 11:40:18

A. That's at least all the cases in the 11:40:19
last five years, but I think it's the majority 11:40:22
of them. 11:40:25

Q. Okay. 11:40:26

So let's talk some of the subject 11:40:26

matter of the cases that you have testified 11:40:29

in. 11:40:31

MS. DURIE: And if we can have the 11:40:32

slide. 11:40:33

BY MS. DURIE: 11:40:34

Q. You have testified about kiosks for 11:40:34

hotel business centers; right? 11:40:36

A. Correct. 11:40:38

Q. You've testified about media 11:40:39

streaming? 11:40:41

A. Correct. 11:40:41

Q. Playlists? 11:40:42

A. Correct. 11:40:43

Q. Geolocation technology? 11:40:44

A. Yes. 11:40:46

Q. Speech recognition software? 11:40:46

A. Speech recognition specifically 11:40:48

linked to telecommunications, yes. 11:40:51

Q. Okay. 11:40:53

Call processing centers? 11:40:53

A. Again, specifically related to 11:40:54

communications. 11:40:57

Q. Okay. 11:40:57

Supply chain management software? 11:40:58

A. Mainly regarding network transactions for supply chain. 11:41:01 11:41:03

Q. Manufacturing automation? 11:41:06

A. Yes, device controlling electronic devices. 11:41:08 11:41:11

Q. Sales projection system software? 11:41:12

A. Oh, yes. That was a number of transactions for doing financial transactions. 11:41:15 11:41:19

Q. Online payment security? 11:41:22

A. Yes, again, network communications for financial transactions. 11:41:24 11:41:27

Q. Damages for copyright infringement? 11:41:28

A. No, I have not done any damages for copyright. 11:41:31 11:41:33

Q. Let's take a look back at your CV, TX-94, page 8. 11:41:35 11:41:41

Let's take a look at the entry for Cohen vs. United States. It's at the bottom and I guess it runs over to page 9. 11:41:43 11:41:48 11:41:50

You testified in a case, Cohen vs. United States, copyright infringement testifying expert for Cohen, provide expert 11:41:53 11:41:56 11:41:59

report, damages and deposition; is that right? 11:42:03

A. I'm sorry, could you do a blowup of 11:42:06

that? 11:42:08

MS. DURIE: Sure. Let's blow it 11:42:09

up there if we can. Bottom of 8, top of 9. 11:42:10

It's at the very top of 9. Copyright 11:42:20

infringement, there we go. 11:42:23

THE WITNESS: Yes. 11:42:26

MS. DURIE: No, no, if you can 11:42:27

blow up the whole entry, Mr. Glass, so we can 11:42:30

see it. And it would be the next page, 11:42:32

page 9. There you go, at the top. 11:42:46

THE WITNESS: Yes, I remember this 11:42:51

case. I was doing the publishing transactions 11:42:52

and identifying what material in that 11:42:56

published material transactions were 11:43:00

infringed. 11:43:06

I also provided support for 11:43:06

damages, again, identifying the value of 11:43:10

publishing transactions. But I did not 11:43:13

provide, for example, specific damage numbers 11:43:16

or estimates. 11:43:19

MS. DURIE: Okay. Fair enough. 11:43:20

We can go back to the slides, Mr. 11:43:21

Glass. 11:43:24

BY MS. DURIE: 11:43:24

Q. You testified about media publishing practices? 11:43:25 11:43:27

A. Again, in regards to network communications for distributing media, yes. 11:43:27 11:43:30

Q. Content licensing? 11:43:33

A. Again, related to distributing content over the Internet. 11:43:34 11:43:37

Q. Web content customization? 11:43:39

A. Same thing, distributing web content over the network. 11:43:41 11:43:43

Q. Right. 11:43:44

Social media user content? 11:43:45

A. Yes. So that was transactions for distributing social media content. 11:43:47 11:43:52

Q. Right. 11:43:54

The "like" feature? 11:43:55

A. That was for Facebook. I was an expert for Facebook. They wanted to discuss how information was transmitted between the Facebook application, for example, on a mobile device and the Facebook server. And one of the examples that we looked at was what 11:43:57 11:44:01 11:44:05 11:44:08 11:44:11 11:44:14

happened when you pressed the "like" feature, what transactions occurred. 11:44:16 11:44:19

Q. You testified about video conferencing technology? 11:44:20 11:44:23

A. Yes, media communications. 11:44:24

Q. You testified about systems for pricing construction projects? 11:44:25 11:44:27

A. I think that's correct. 11:44:31

Q. Let's take a look back at TX-94, page 16. 11:44:33 11:44:38

MS. DURIE: And if we can go, Mr. Glass, to the entry for Uniloc vs. Autodesk. Right in the middle, two-thirds of the way down, further down. Uniloc vs. Autodesk. There we go. 11:44:38 11:44:40 11:44:47 11:44:50 11:44:56

BY MS. DURIE: 11:44:57

Q. Non-infringement of two patents about systems that facilitate the pricing of construction projects? 11:44:57 11:45:00 11:45:03

A. Right. So Autodesk is a CAD system. In this particular case, the CAD system, once you design a construction project, it breaks that down into separate transactions to allow a server, for example, to price that project. 11:45:04 11:45:08 11:45:11 11:45:15 11:45:19

I wasn't involved in the aspect of pricing or how those transactions do pricing, only in the aspect of how the transactions from Autodesk are implemented and transmitted. 11:45:23 11:45:26 11:45:29 11:45:32

Q. Now, in the resume that you submitted for this case, you included various references to USB; right? 11:45:38 11:45:40 11:45:42

A. Correct. 11:45:44

Q. You also have a bio of yourself on your website; right? 11:45:45 11:45:50

A. Yes. 11:45:52

MS. DURIE: Okay. I'd like to mark this for identification as 373. 11:45:54 11:45:56

(Whereupon, Trial Exhibit 373 was introduced.) 11:46:03 11:46:08

BY MS. DURIE: 11:46:17

Q. Exhibit 373 is your website bio; correct? 11:46:18 11:46:21

A. Yes. 11:46:22

MS. DURIE: We offer it. 11:46:23

MR. FENTON: No objection. 11:46:25

THE WITNESS: I'm sorry? 11:46:26

THE COURT: I'm sorry, Mr. Fenton? 11:46:28

MR. FENTON: No objection. 11:46:30

THE COURT: Okay. It's admitted. 11:46:32

BY MS. DURIE: 11:46:34

Q. So this is how you market yourself on your website; right? 11:46:35

A. Yes, I think this is correct. 11:46:40

Q. Okay. Ivan Zatkovich, expert witness. 11:46:42

And you list your focus areas on your website; right? 11:46:46

A. Yes. 11:46:50

Q. Bank/sweep accounts, billing and payment processing, call and contact center automation, content personalization, credit card prepaid card processing, eCommerce Internet marketing, electronic transactions, ERP supply chain, high volume content websites, insurance claims process, Internet publishing, IVR speech recognition, search engine optimization and software copyright. 11:46:51

You do not list USB specifically on your website; right? 11:47:18

A. Well, those are specific examples of projects. Again, each of these relate to financial network transactions, eCommerce 11:47:23

network transactions, or in the case of electronic devices, electronic transactions. 11:47:33 11:47:37

Q. Okay. 11:47:41

Well, you've never written an article about USB; right? 11:47:42 11:47:44

A. I've written internal documentation for my companies, but no, nothing published. 11:47:48 11:47:51

Q. You are not the inventor on any patents that relate to USBs? 11:47:54 11:47:56

A. That's correct. 11:47:57

Q. In fact, you are not an inventor on any patents at all? 11:47:58 11:48:00

A. I have not invented any patents myself, no. 11:48:02 11:48:04

Q. Now, the patents in this case reference the USB specification; right? 11:48:04 11:48:06

A. Correct. 11:48:08

Q. That is the USB 2.0 specification? 11:48:09

A. That's correct. 11:48:13

MS. DURIE: I am going to hand you what has been marked as Exhibit 186. 11:48:27 11:48:30

(Whereupon, Trial Exhibit 186 was introduced.) 11:48:34 11:48:40

THE WITNESS: Looks about right. 11:48:42

BY MS. DURIE: 11:48:44

Q. Now, Exhibit 186 is a copy of the USB 2.0 specification; right? 11:48:44 11:48:48

A. Yes. 11:48:53

MS. DURIE: We offer it. 11:48:54

MR. FENTON: No objection. 11:48:55

THE COURT: It is admitted. 11:48:57

MS. DURIE: Mr. Glass, if we can put that up, start with the first page, perfect. And then let's go to page 3. 11:48:58 11:49:00 11:49:03

And if we can blow up the top half of the page. 11:49:06 11:49:09

BY MS. DURIE: 11:49:12

Q. There is an acknowledgment of the individuals who contributed to the USB 2.0 technical specification; right? 11:49:12 11:49:13 11:49:16

A. Yes, that's what it appears to be. 11:49:19

Q. And there is a hub working group and there is an individual who was the chair editor of the hub working group. 11:49:21 11:49:24 11:49:27

Do you see that? 11:49:29

A. Yes, that would be similar to the ISO committee that I sat on. 11:49:30 11:49:33

Q. All right. Well, let's start with 11:49:34

USB for now. So Mr. Garney is identified here as the chair/editor of the hub working group that contributed to the USB 2.0 specification; right? 11:49:36 11:49:37 11:49:40 11:49:44 11:49:48

A. Yes, correct. 11:49:48

Q. Okay. 11:49:49

And you know who Mr. Garney is, right? He's our expert in this case. 11:49:49 11:49:51

A. That's my understanding, yes. 11:49:53

Q. Now, you are not listed here; right? 11:49:55

A. I am not. 11:49:57

Q. In fact, you are not listed in any of the groups of people who contributed to the 2.0 specification; right? 11:49:58 11:50:01 11:50:03

A. No, not to my knowledge. 11:50:04

Q. You never attended any standard setting meetings for USB; right? 11:50:05 11:50:07

A. Conferences or standards committees? 11:50:11

Q. Standard-setting meetings for the USB. 11:50:15 11:50:17

A. No, only for the ISO. 11:50:18

Q. Now, before you agree to take on a case, do you do anything to make sure that you 11:50:20 11:50:22

agree with the side that you are going to be testifying for? 11:50:24 11:50:27

A. Not necessarily. Most times when I interview for a case, I will provide my qualifications and I will -- if there is a patent involved, I will take a look at the patent and indicate whether I feel comfortable expressing opinions on that technology. 11:50:32 11:50:36 11:50:40 11:50:44 11:50:46 11:50:48

Q. Okay. 11:50:50

So you served as an expert in, what, roughly 60 to 70 cases over the last decade or so? 11:50:51 11:50:55 11:50:58

A. Yes, over the last 11 years or so. Yes. 11:51:01 11:51:05

Q. And the Court has disagreed with your opinions in about half of those cases; right? 11:51:05 11:51:07

A. I have never done any scorekeeping on that, but I wouldn't be surprised. I don't know if you have done the research or not. 11:51:12 11:51:16 11:51:20

Q. Half sound about right? 11:51:23

A. I don't know. I have never done any bookkeeping, but I wouldn't disagree if you've already done the research. 11:51:24 11:51:27 11:51:29

MS. DURIE: I'd like, Your Honor, 11:51:31

to read from the witness's deposition, page 34, lines 11 through 16. 11:51:32 11:51:35

Would the Court like a copy? 11:51:38

THE COURT: Are you going to put it up or are you just going to read? 11:51:39 11:51:40

MS. DURIE: I am just going to read it. 11:51:42 11:51:43

THE COURT: You can read it. 11:51:43

MS. DURIE: Thank you. 11:51:44

BY MS. DURIE: 11:51:45

Q. At your deposition, sir, you were asked the following questions and gave the following answer: 11:51:45 11:51:47 11:51:48

"QUESTION: Has any Court ever disagreed with your opinions? 11:51:49 11:51:51

"ANSWER: Certainly. 11:51:52

"QUESTION: Do you remember which ones? 11:51:54 11:51:55

"ANSWER: Any Court that didn't rule for the party that I was representing. I would say approximately half." 11:51:56 11:51:57 11:52:00

So your record, sir, is basically half? 11:52:03 11:52:10

A. Again, I haven't done the research. 11:52:10

I was asked how many and I gave a brief estimate. It could be much higher than that, it could be lower than that. I don't know. 11:52:12 11:52:15 11:52:18

Q. Now, you are charging Microchip $525 an hour for your time; right? 11:52:19 11:52:22

A. I believe that's my rate, right. 11:52:24

Q. You said a Cadillac Escalade wasn't in the budget? 11:52:26 11:52:30

A. Correct. 11:52:30

Q. How much have you billed total for your time today in this case? 11:52:31 11:52:34

A. Including the time on the trial? 11:52:35

Q. Sure. 11:52:37

A. I don't know. I haven't done the math on that. 11:52:38 11:52:39

Q. Ballpark. 11:52:40

A. I would say more than 100 hours and less than 200 hours. 11:52:42 11:52:45

Q. Okay. 11:52:46

More than 100 hours, so that would be, let's see, at least $50,000? 11:52:47 11:52:53

A. That -- that math sounds correct. 11:52:56

Q. 50 to 100? 11:52:58

A. Yeah. Over the last three years, 11:52:59

that would be about right. 11:53:01

Q. Okay. 11:53:02

Now, in order to offer an opinion 11:53:03

about infringement, you need to understand 11:53:08

what the claims cover; right? 11:53:11

A. Yes. 11:53:13

Q. Okay. 11:53:14

You also, therefore, need to 11:53:15

understand what the claims don't cover; right? 11:53:16

A. I'm not sure I understand the 11:53:20

question. 11:53:21

Q. Well, I mean, you need to understand 11:53:22

what they cover and what they don't cover; 11:53:23

right? 11:53:26

A. I guess in general, that would be 11:53:29

true. 11:53:31

Q. All right. 11:53:31

So for the jury to find for 11:53:32

Microchip in this case, the jury has to find 11:53:34

that at least one of the claims is both valid 11:53:37

and infringed; right? 11:53:43

A. That would be my understanding, yes. 11:53:44

Q. Okay. 11:53:46

And the patent needs to mean the 11:53:46

same thing for purposes of validity and infringement; right? 11:53:49 11:53:57

A. That would be my understanding as well. 11:53:57 11:53:59

Q. A patent owner can't say a patent means one thing when you are analyzing infringement and a different thing when you're analyzing validity; right? 11:53:59 11:54:02 11:54:04 11:54:06

A. I would say that's correct. 11:54:11

Q. So it's important for Microchip to take consistent positions with respect to validity and infringement; right? 11:54:12 11:54:14 11:54:17

MR. FENTON: Objection. Calls for a legal conclusion. 11:54:20 11:54:21

THE COURT: Sustained. 11:54:22

BY MS. DURIE: 11:54:23

Q. Well, the validity of patents is something you've been asked to look at in other cases; right? 11:54:23 11:54:26 11:54:27

A. I have done validity analysis in other cases. 11:54:28 11:54:30

Q. You have testified in other cases that patents are valid; right? 11:54:30 11:54:32

A. Correct. 11:54:34

Q. In other cases you have done an analysis of the prior art; right? 11:54:34 11:54:36

A. I have. 11:54:38

Q. And indeed, in other cases, some other cases, you have testified that patent claims are not valid; right? 11:54:39 11:54:41 11:54:44

A. I have in certain cases. 11:54:46

Q. Okay. 11:54:47

Now, in this case, Microchip didn't ask you to look at the prior art; right? 11:54:48 11:54:50 11:54:52

A. I was not requested to do that, no. 11:54:53

Q. They did not ask you to look at whether the claims are valid or not; right? 11:54:56 11:54:58

A. No, they did not. 11:55:00

Q. Microchip hired someone else to address questions of patent validity; right? 11:55:01 11:55:04

A. That is correct. 11:55:08

Q. That is Dr. Levy sitting right there; right? 11:55:09 11:55:11

A. Yes. 11:55:11

Q. Okay. 11:55:12

He is the invalidity expert; right? 11:55:12 11:55:16

A. Correct. 11:55:17

Q. Now, you said, I think, in your direct examination that you read the expert reports in this case; is that right? 11:55:17 11:55:20 11:55:22

A. Correct. The expert reports of opposing experts. 11:55:23 11:55:27

Q. Right. 11:55:27

But you didn't read all of the expert reports when you were putting your opinions together; right? 11:55:28 11:55:29 11:55:31

A. Well, all the reports that pertain to the practicing of the claims by the accused product. 11:55:32 11:55:36 11:55:38

Q. Right. 11:55:38

So when you were putting together your opinions on infringement, you didn't review a copy of Dr. Levy's opinions on validity; right? 11:55:39 11:55:41 11:55:43 11:55:49

A. Correct. I wanted to provide objective independent opinions. 11:55:50 11:55:52

Q. Right. 11:55:53

And you made no effort to have your opinions on infringement be consistent with Dr. Levy's opinions on validity; right? 11:55:53 11:55:57 11:55:59

A. That's the definition of being objective, yes. 11:56:03 11:56:05

Q. Okay. 11:56:05

So you don't know whether they are consistent or not? 11:56:06 11:56:08

A. I don't. 11:56:09

Q. Okay. 11:56:09

Now, you know that there was a proceeding before a patent office about the '243 Patent that is called an Inter Partes Review proceeding; right? 11:56:10 11:56:13 11:56:17 11:56:21

A. Yes, I was aware there were IPRs. 11:56:22

Q. Right. 11:56:25

And Microchip hired yet another expert for that proceeding; right? 11:56:26 11:56:27

A. That's my understanding, yes. 11:56:30

Q. Right. 11:56:31

That was a gentleman by the name of Mr. Knapen; {ph} right? 11:56:32 11:56:33

A. I don't know -- I don't know that name. 11:56:35 11:56:36

Q. Okay. 11:56:37

I take it then that you never spoke with Mr. Knapen? 11:56:38 11:56:40

A. I have not. 11:56:41
Q. Or reviewed his opinions? 11:56:42
A. No. 11:56:43
Q. You know that Microchip did have an expert who provided expert testimony to the patent office? 11:56:45 11:56:47 11:56:51
A. I would expect that. That's -- that occurs in most IPRs, yes. 11:56:52 11:56:54
Q. Right. 11:56:57
But you didn't review it? 11:56:57
A. I did not. 11:56:59
Q. And you, therefore, made no effort to have your opinions be consistent with the positions that Microchip's expert had provided to the patent office? 11:57:00 11:57:02 11:57:05 11:57:07
A. Correct. I wanted my opinions to be, again, independent and objective. 11:57:08 11:57:10
Q. Right. 11:57:11
So as far as you knew, you and Dr. Levy and Mr. Knapen were all saying different things about what the patent claims covered? 11:57:12 11:57:15 11:57:17
A. It's conceivable, yes. 11:57:19
Q. Now, I want to be clear, in the patent office proceeding that we have been 11:57:20 11:57:22

talking about, this Inter Partes Review proceeding that you called an IPR, the patent office does not look at infringement; right? 11:57:25 11:57:28 11:57:30

A. Right. 11:57:33

MR. FENTON: Objection. Outside the scope of the direct. 11:57:34 11:57:35

THE COURT: Sustained. 11:57:42

BY MS. DURIE: 11:57:42

Q. Well, let me ask it this way: 11:57:43

Are you aware of any proceeding in which anyone has made any judgment about infringement before this? 11:57:45 11:57:47 11:57:49

MR. FENTON: Objection, vague. 11:57:51

THE COURT: Overruled. 11:57:52

THE WITNESS: I'm sorry, could you ask the question again? 11:57:57 11:57:58

BY MS. DURIE: 11:57:59

Q. Are you aware of any prior proceeding in which anyone considered the question of whether Aptiv infringes a patent before this one, this trial, this case? 11:57:59 11:58:01 11:58:03 11:58:06

A. I don't believe so, no. 11:58:08

Q. Now, Microchip didn't give you a copy of the decision from the patent office when 11:58:11 11:58:15

you were coming up with your opinions; right? 11:58:19

A. No. I would have had access to it 11:58:21

anyway, but again, I wanted to provide 11:58:23

objective opinions. 11:58:25

Q. Okay. 11:58:26

Now, you conducted an infringement 11:58:27

analysis; right? 11:58:33

A. Correct. 11:58:34

Q. And your opinions are set forth in 11:58:36

your expert reports; right? 11:58:38

A. Correct. 11:58:40

Q. You submitted two expert reports? 11:58:41

A. I did. 11:58:43

Q. Right? An opening report and then 11:58:44

you got to see what Dr. Garney had to say -- 11:58:46

what Mr. Garney had to say and you got to 11:58:49

respond to that; right? 11:58:52

A. That's correct. 11:58:53

Q. And those expert reports were then 11:58:54

provided to us so that we would know what all 11:58:56

of your opinions were; right? That's the 11:58:59

reason we have expert reports in these 11:59:01

proceedings. 11:59:03

A. Correct. 11:59:04

Q. So you did your best to make sure that your expert reports were comprehensive; right? 11:59:05 11:59:08 11:59:10

A. As best as I could. 11:59:10

Q. Right. 11:59:11

And detailed? 11:59:11

A. Right. 11:59:12

Q. You set forth all of your opinions? 11:59:12

A. Yes. 11:59:14

Q. Tried to be scrupulously accurate; right? 11:59:15 11:59:18

A. There's about 400 pages, as I recall. 11:59:18

Q. Yes, they are quite thick, indeed. 11:59:20

And in your expert reports, you said that claim 1 is representative of all of the claims in the '243 Patent; right? 11:59:23 11:59:27 11:59:31

MR. FENTON: Objection, scope. 11:59:34

THE COURT: Overruled. 11:59:35

THE WITNESS: It's representative in the fact that it has claim elements, some aspects of claim elements that would be consistent across multiple claims. Again, the patent does not allow duplicate claims. 11:59:38 11:59:39 11:59:43 11:59:46 11:59:50

MS. DURIE: Right. 11:59:53

BY MS. DURIE: 11:59:54

Q. But in your expert report, you chose to structure your expert report by identifying one claim as a representative claim; right? 11:59:54 11:59:57 12:00:00

A. I actually analyzed each and every asserted claim, but yes, I picked one as to illustrate the concepts of the patent. 12:00:04 12:00:06 12:00:09

Q. Right. 12:00:11

And the claim that you picked as a representative claim of the '243 Patent was claim 1? 12:00:12 12:00:14 12:00:17

A. Correct. Again, just to illustrate the general capabilities of the patent. 12:00:18 12:00:20

Q. Okay. 12:00:23

Now, you testified a little bit earlier about what you consider to be the three main features of the Aptiv CarPlay solution; right? 12:00:25 12:00:27 12:00:31 12:00:35

A. Yes. 12:00:36

MS. DURIE: And if we can have, Mr. Glass, NCD2-69. 12:00:37 12:00:40

BY MS. DURIE: 12:00:52

Q. This was the slide that you put up; right? 12:00:52 12:00:54

A. Correct. 12:00:55

Q. And it is your opinion that any hub supporting those three features would necessarily infringe the '243 Patent; right? 12:00:56 12:01:01 12:01:03

A. Correct. In at least the claim 23, 24, 25. 12:01:09 12:01:13

Q. Well, you're saying now at least claim 23, but that was not a distinction that you drew in your expert report; right? 12:01:14 12:01:16 12:01:19

A. Correct. I was just illustrating for this particular proceeding. 12:01:22 12:01:23

Q. Right. 12:01:25

A. But I would agree, it would apply to all of them. 12:01:25 12:01:27

Q. Right. 12:01:28

In your expert report, you said any hub supporting these three features would necessarily infringe the '243 Patent generally; right? 12:01:29 12:01:30 12:01:33 12:01:37

A. Yes. 12:01:38

Q. Okay. 12:01:38

And you identified what you thought was required in order to provide those three main features; right? 12:01:39 12:01:41 12:01:45

A. Yes.
Q. And in conducting that analysis, you did not distinguish between claim 1 and claim 23; right?
A. No. There are common elements between the two, but there are also differences.
Q. Right.
And each of the things that you identified in your report as being necessary for these three features is something that is present in claim 1; right?
A. Yes, I believe that's correct.
Q. Now, let's talk a little bit about the Aptiv product.
MS. DURIE: And if we could go to slide 21.
BY MS. DURIE:
Q. This image comes from your report; right?
A. Correct.
Q. And you labeled this --
MS. DURIE: If we can go to slide 22.

BY MS. DURIE: 12:02:43

Q. In your report, you added some 12:02:43

labeling to this; right? The first host is on 12:02:45

the left, the second host, the phone, is on 12:02:48

the right; correct? 12:02:51

A. Correct. 12:02:52

Q. And you see that Aptiv's dual role 12:02:54

hub has two device controllers; right, in the 12:02:58

bridge? 12:03:04

A. Correct, two device controllers 12:03:04

joined together. Correct. 12:03:06

Q. Right. 12:03:07

And you have another diagram in 12:03:08

your report that shows this in a little bit 12:03:10

more detail? 12:03:12

MS. DURIE: If we could go to 12:03:13

slide 24. There we go. Perfect. 12:03:15

BY MS. DURIE: 12:03:21

Q. This is also from your expert report; 12:03:21

right? 12:03:24

A. Yes. 12:03:25

Q. Okay. 12:03:26

And you see here two device 12:03:26

controllers that have been identified with 12:03:31

purple boxes around them, device controller UDC_US and device controller UDC_DS; right? 12:03:34 12:03:37

A. That's correct. 12:03:44

Q. And UDC_US stands for USB device controller upstream; right? 12:03:44 12:03:49

A. Yes. 12:03:50

Q. And UDC_DS stands for USB device controller downstream; right? 12:03:50 12:03:54

A. Yes. 12:03:56

Q. And in the dual role hub, the upstream controller responds to USB requests from the head unit which is one host; right? 12:03:57 12:03:59 12:04:03

A. I'm sorry, could you repeat that? 12:04:05

Q. Sure. 12:04:06

In the dual role hub, the upstream controller responds to USB requests from the first host, the head unit? 12:04:07 12:04:09 12:04:11

A. Correct. 12:04:13

Q. And in the dual role hub, the downstream controller responds to USB requests from the iPhone, which is a second host; right? 12:04:15 12:04:17 12:04:21 12:04:23

A. Correct. That would be the second dedicated connection. 12:04:24 12:04:25

Q. Now, configuration is a standard part of USB; right? 12:04:27 12:04:31

A. Yes. Enumeration to process to determine configuration, yes. 12:04:33 12:04:36

Q. And configuration is a request to a device to ask the device to identify what type of device it is and what capabilities it has; right? 12:04:37 12:04:43 12:04:47 12:04:51

A. Yes, that sounds right. 12:04:52

Q. Okay. 12:04:53

And the device, in response to that request, sends back information about what its capabilities are, this is what I am; right? 12:04:54 12:04:57 12:05:02 12:05:04

A. Correct. 12:05:04

Q. And that includes the device's descriptors? 12:05:05 12:05:07

A. Yes. 12:05:08

Q. And device descriptors include the class of the device, like an audio device; right? 12:05:09 12:05:12 12:05:16

A. That's correct. 12:05:16

Q. Now, a device descriptor is different from an address; right? 12:05:17 12:05:19

A. It is. 12:05:20

Q. The host assigns an address to the device; right? 12:05:21 12:05:25

A. Yes, the host must assign the address. 12:05:26 12:05:29

Q. Right. 12:05:30

But the device descriptor comes from the device to the host; right? 12:05:30 12:05:32

A. Correct. 12:05:34

Q. The device -- the host says basically, like, what are you, and then the device says, I am a printer and I have these capabilities? 12:05:35 12:05:38 12:05:40 12:05:42

A. Yes. 12:05:43

Q. Okay. 12:05:44

A. There's -- 12:05:45

Q. The device -- sorry, go ahead. 12:05:47

A. I'm sorry, with some exceptions. 12:05:49

Q. Okay. 12:05:51

But the device descriptor always comes from the device; right? 12:05:52 12:05:54

A. Correct. 12:05:55

Q. Okay. 12:05:56

And the device doesn't really know 12:05:56

anything -- 12:06:02

A. Now, I'm sorry, are we talking about 12:06:03
standard USB devices or are we talking about 12:06:05
the non-standard devices here? 12:06:07

Q. Well, we're going to get there, but 12:06:08
now we're talking about how USB works. 12:06:10

A. Standard. 12:06:13

Q. Standard USB, yep. 12:06:13

A. Got it. 12:06:15

Q. The device is responding to the 12:06:16
request from the host and it is just saying, 12:06:17
this is what I am. Okay. 12:06:19

And this idea of the device 12:06:21
descriptor, this is discussed in the USB 12:06:23
specification; right? 12:06:25

A. Yes, it is. 12:06:26

Q. So if we can take a look, 12:06:29
Exhibit 186, it is page 289, there is a 12:06:32
Section 9.6.1. 12:06:35

And it says, "A device descriptor 12:06:36
describes general information about a USB 12:06:39
device. It includes information that applies 12:06:41
globally to the device and all of the device's 12:06:43
configurations. A USB device has only one 12:06:47

device descriptor." 12:06:50

Now, this was true about how USB 12:06:51

worked in 2006; right? 12:06:55

A. For standard USB devices, correct. 12:06:58

Q. Right. 12:07:02

So one device, one device 12:07:02

descriptor? 12:07:05

A. That's correct. 12:07:05

Q. Okay. 12:07:05

Now, in the Aptiv system, each of 12:07:07

the USB device controllers has its own device 12:07:10

descriptor; right? 12:07:12

A. Yes. As would the multi-host device 12:07:14

controller. 12:07:17

Q. Well, we are going to get there, but 12:07:17

let's just stick with the Aptiv system for the 12:07:19

moment. 12:07:21

And each controller in the Aptiv 12:07:22

system reports a different function; right? 12:07:24

A. Correct. 12:07:29

Q. Right. 12:07:29

So the iPhone's controller says, I 12:07:31

have NCM and iAP2 functions; right? 12:07:37

A. Correct. 12:07:40

Q. And those are the interfaces that are required by CarPlay; right? 12:07:41 12:07:43

A. Yes. 12:07:46

Q. And the head unit controller responds that it has a vendor specific function; right? 12:07:46 12:07:47

A. Correct. But it does -- the upstream controller also supports those same functions. 12:07:50 12:07:53

Q. But a vendor-specific function, that's a custom function basically; right? 12:07:56 12:07:58

A. Right. It's just a non-standard USB device to begin with, so that is correct. 12:08:01 12:08:04

Q. Right. 12:08:06

Now -- 12:08:07

MS. DURIE: Your Honor, may I just ask what the Court's -- I'm about to change the line up a little bit and I am just wondering about the lunch break. I am happy to keep going, or we can break here. 12:08:08 12:08:09 12:08:12 12:08:13 12:08:15

THE COURT: Assuming it is okay with the jury, I was thinking we would go until 12:30. 12:08:16 12:08:17 12:08:20

MS. DURIE: Perfect. That's great. 12:08:22 12:08:23

THE COURT: Is that okay with the 12:08:23

jury? Okay. 12:08:26

MS. DURIE: Perfect. So if we 12:08:27

could have NCD1-28, Mr. Glass. 12:08:28

BY MS. DURIE: 12:08:33

Q. This is a slide that you prepared to 12:08:33

illustrate this point about device 12:08:35

descriptors; right? 12:08:40

A. Correct. 12:08:40

Q. But this is not the slide that you 12:08:41

just showed the jury; right? 12:08:43

A. I think this is one of the older 12:08:46

drafts that I prepared. 12:08:49

Q. This was a slide that you prepared 12:08:50

and produced a couple days ago; right? 12:08:52

A. Correct. 12:08:55

Q. And that was before Mr. Bohm had 12:08:56

testified; right? 12:08:58

A. Correct. 12:09:00

Q. Right. 12:09:01

And so -- 12:09:04

A. I'm sorry. 12:09:04

Q. Go ahead. 12:09:06

A. I am trying to remember when we 12:09:07

submitted the slides. Was it the night 12:09:11

before? 12:09:12

Q. I will represent that we received the slides before Mr. Bohm testified. 12:09:14 12:09:16

A. Okay. 12:09:17

MS. DURIE: And, counsel, I think you will agree, the original slides were sent over. 12:09:19 12:09:20 12:09:23

THE WITNESS: Okay. 12:09:23

BY MS. DURIE: 12:09:24

Q. Now, here you showed the device function, a printer/scanner; right? 12:09:24 12:09:29

A. Correct. 12:09:31

Q. And you showed the two sets of endpoints that were associated with that printer/scanner; right? 12:09:32 12:09:34 12:09:36

A. Right. 12:09:38

Q. And you showed one as having an address and then a DEV class. 12:09:39 12:09:41

Now, what is that? 12:09:43

A. A DEV class is the USB designation for any type of device. 12:09:44 12:09:48

Q. Right. 12:09:49

And so here what you showed is that the printer/scanner was telling one host, 12:09:50 12:09:52

I am a printing device, and was telling the other host, I am a miscellaneous DEV class; right? 12:09:57 12:09:59 12:10:02

A. Correct. 12:10:03

Q. Okay. 12:10:03

And that's sort of analogous to the Aptiv scenario where you've got NCM and iAP2 on the one side and you have got a custom function on the other side? 12:10:04 12:10:06 12:10:10 12:10:12

A. Right. It illustrates the concept of having a separate dedicated address configuration, a response information. 12:10:13 12:10:15 12:10:17

Q. And so in this hypothetical that you were showing here, this printer/scanner is saying -- get asks by the host saying, what are you, and it's saying to one host, I am a printer, I am in the printing class, and it's saying to the other host, I am a miscellaneous device; right? 12:10:19 12:10:21 12:10:25 12:10:27 12:10:29 12:10:32 12:10:37

A. Correct. 12:10:38

Q. Now, in your expert reports, you did not identify any USB device that existed in 2006 as of the date of the invention that reported more than one device descriptor; 12:10:38 12:10:41 12:10:46 12:10:49

right? 12:10:52

A. I'm sorry, could you ask that 12:10:54

question again? 12:10:56

Q. Sure. 12:10:56

In your expert report, you did not 12:10:57

identify any USB device that existed out there 12:11:00

in 2006 that, for a single device, reported 12:11:04

more than one device descriptor? 12:11:09

A. A standard USB device, no, it 12:11:12

wouldn't be allowed to do that. 12:11:14

Q. Well, in fact, in your expert report, 12:11:16

you didn't identify any non-standard USB 12:11:17

devices that existed out in the world at the 12:11:20

time that Microchip filed its patent 12:11:23

application that reported more than one device 12:11:25

descriptor? 12:11:28

A. Correct. I wasn't aware of any 12:11:28

devices that would have the capabilities of 12:11:30

the multi-host device. 12:11:33

Q. Okay. 12:11:34

So let's talk about that point and 12:11:35

the patent. The patent actually describes USB 12:11:38

devices that were available in 2006; right? 12:11:42

A. Yes. 12:11:45

Q. Okay. 12:11:45

And if we can take a look at 12:11:46

Exhibit 1, and let's just start with the first 12:11:48

page. Just sort of for orientation, in case 12:11:51

people want to follow along at home. 12:11:57

Let's go to page 4. Actually, I 12:11:59

apologize, let's go to page 6, column 4, and 12:12:06

just for people's orientation, you've got the 12:12:11

column numbers at the top, right, 3 and 4. 12:12:14

And we patent people refer to the column and 12:12:17

then the line numbers when we are calling 12:12:20

things; right? 12:12:22

So column 4, lines 5 through 9. 12:12:23

And it says, "Peripheral device/function 312, 12:12:28

which may comprise of a main consumer 12:12:33

component, such as an Ethernet controller, 12:12:35

mass storage drive, et cetera, may not be 12:12:38

aware of the multi-host capability of the USB 12:12:40

component, and may be a standard off-the-shelf 12:12:43

item." 12:12:46

So what the patent is saying is 12:12:46

the device in this two-host, one-device setup 12:12:49

may be a standard off-the-shelf USB device; 12:12:53

right? 12:12:57

A. Correct. That would be one example of a device that you could incorporate. 12:12:57 12:12:59

Q. Right. 12:13:01

And a standard off-the-shelf USB device, like an Ethernet controller or a mass storage drive or something along those lines, would be -- have been, in 2006, compliant with USB spec; right? 12:13:01 12:13:04 12:13:06 12:13:09 12:13:11

A. Correct. You would have to alter it in some fashion in order to connect to all the other circuitry of the multi-host device, but yes, the core of it could be initiated by a standard device. 12:13:12 12:13:16 12:13:18 12:13:20 12:13:25

Q. Right. 12:13:26

Well, this standard off-the-shelf USB device would have one device descriptor; right? 12:13:27 12:13:28 12:13:32

A. Again, as a stand-alone standard USB device, it would only have one device descriptor. But the patent, of course, allows that device to have separate descriptors for each host. 12:13:32 12:13:37 12:13:40 12:13:42 12:13:45

Q. Well, let's talk about that. 12:13:45

You were here for Mr. Bohm's 12:13:47

testimony; right?
A. I was.
Q. And if we could go to slide 30, you heard Mr. Bohm testify that he did not invent a new type of device function; right?
A. Correct.
Q. Okay.
And if we go to slide 31, you also heard Mr. Bohm testify that the patent does not describe any device function that reports different device descriptors to different hosts; right? It doesn't say in the patent, here's an example of a device that could do that?
A. Again, to be specific, he said he didn't -- he wasn't aware of any specific embodiment --
Q. Right.
A. -- any examples of the technology.
Q. Right.
A. He did speak to the claims, of course.
Q. Right.
In the body of the '243 Patent and

the description of the invention, there is not an example where it says, here's an example of a device that can report two different device descriptors? 12:14:33 12:14:35 12:14:38 12:14:41

A. Correct, not in the body, they didn't discuss the language. 12:14:41 12:14:46

Q. Well, actually he did, but we're going to get to that. 12:14:47 12:14:48

So slide 32, we also heard testimony from Mr. Bohm about Figure 3 of the patent; right? 12:14:50 12:14:53 12:14:57

A. Yes. 12:15:00

Q. And Mr. Banner, during that testimony, had highlighted Figure 3 like this, so we saw one portion running from one host through the endpoint and status, the endpoint buffers associated with the multi-host device controller; right? 12:15:00 12:15:04 12:15:06 12:15:11 12:15:15 12:15:17

A. Yes, I recall that. 12:15:18

Q. Okay. 12:15:19

And if we go to slide 33, Mr. Bohm testified that if you were to erase the highlighted portion, you would be -- of Figure 3, you would be left with a standard 12:15:20 12:15:23 12:15:25 12:15:29

USB device; right? 12:15:31

A. That would be a very much 12:15:34

generalization. For example, you would still 12:15:36

have some type of multi-host device 12:15:38

controller, which would clearly not be 12:15:40

standard. 12:15:43

So I think that was a 12:15:44

generalization, but as a general concept, I 12:15:45

don't necessarily disagree with that. 12:15:48

Q. A standard USB device would report 12:15:49

one device descriptor? 12:15:53

A. If we are going to go down into 12:15:54

detail, I think we would have to ask that 12:15:56

question specifically to Mr. Bohm. But 12:15:58

again -- 12:16:00

Q. All right. Well -- 12:16:00

A. -- trying to create a general outline 12:16:01

here. 12:16:04

Q. Let's continue with what Mr. Bohm 12:16:04

said. Go to slide 34. He was asked about 12:16:06

that box that sits at the bottom of figure -- 12:16:09

actually, let's go back to 33 for a moment. 12:16:13

So the device function box, that's 12:16:16

312; right? 12:16:18

A. Correct. 12:16:19

Q. So if we go to the next slide, 12:16:20

please, slide 34, Mr. Bohm was asked about 12:16:21

that Box 312, and he said 312 is referring to 12:16:24

the device or function, and in this case, 12:16:29

really probably the easiest way to think of it 12:16:30

is, is whatever the product was that you 12:16:35

bought. 12:16:36

So if you bought a mouse, whatever 12:16:37

makes that mouse a mouse, that's the device or 12:16:39

function. If you buy a printer, you know, the 12:16:41

intelligence takes the data and turns it into 12:16:43

the words on the page, again, that would be 12:16:47

the device or function. It varies depending 12:16:49

on what the actual product was that you 12:16:49

bought. 12:16:49

So what he is talking about here 12:16:51

is buying an off-the-shelf computer; right? 12:16:53

A. Right. He is identifying what a 12:16:56

standard device function would be, yes. 12:16:57

Q. It is whatever makes a mouse a mouse, 12:16:59

whatever makes a printer a printer; right? 12:17:01

A. Sure. 12:17:04

Q. Now, let's go to slide 35. 12:17:04

On the right, we have the version of your graphic that was sent over to us before Mr. Bohm testified. On the left, we have the version of your graphic that you presented in court today. And they are a little bit different; right? 12:17:07 12:17:09 12:17:12 12:17:15 12:17:17 12:17:19

A. Yes. I wanted to clean it up. It was getting a little busy with a lot of stuff in it, so I wanted to trim it down. 12:17:21 12:17:24 12:17:26

Q. And so the thing that you cleaned up was the reference to the USB device as part of the device descriptor identifying itself as having different device descriptors in reference to those two different device classes; right? 12:17:29 12:17:31 12:17:36 12:17:38 12:17:41 12:17:43

A. Correct. I wanted to save some time rather than going through describing what a DEV class was, different categories of device classes. I wanted to simplify the slide of it. 12:17:44 12:17:47 12:17:49 12:17:53 12:17:58

Q. Now, a printer/scanner was a known USB type of device in 2006; right? There were printer/scanners? 12:17:58 12:18:01 12:18:04

A. Yes. 12:18:05

Q. And a printer/scanner would report different device descriptors for the different functions, for the printing function and the scanning function; right? 12:18:05 12:18:08 12:18:11 12:18:14

A. It could, yes. 12:18:15

Q. Okay. 12:18:16

But that doesn't mean that it's saying different things to different hosts; right? 12:18:16 12:18:18 12:18:19

A. Again, we're talking about a printer/scanner that is a multi-host device, as opposed to a standard off-the-shelf scanner that's not connected to a multi-host controller. 12:18:21 12:18:24 12:18:28 12:18:31 12:18:33

Q. I am actually just talking about a standard printer/scanner. 12:18:33 12:18:37

MS. DURIE: Let's take a look at the USB specification, Exhibit 186 in evidence, page 57, please, Mr. Glass. 12:18:39 12:18:40 12:18:43

BY MS. DURIE: 12:18:48

Q. And if we take a look at the bottom and we blow that up, it says, "Multiple functions may be packaged together in what appears to be a single physical device. For 12:18:49 12:18:50 12:18:53 12:18:56

example, a keyboard and a trackball might be combined in a single package. Inside the package, the individual functions are permanently attached to a hub and it is the hub that is connected to the USB." 12:18:58 12:19:00 12:19:03 12:19:04 12:19:09

So in this example, it is saying you have two USB functions, you have a keyboard, you have a trackball, there is a hub. Both of those devices are connected to that hub; right? 12:19:11 12:19:14 12:19:16 12:19:17 12:19:20

A. I think I am following your scenario. 12:19:21

Q. Okay. 12:19:23

A. I'm not sure. 12:19:23

Q. And the hub is then connected to the host; right? 12:19:24 12:19:26

A. That sounds right. 12:19:27

Q. Okay. 12:19:28

And it says, "When multiple functions are combined with a hub in a single package, they are referred to as a compound device." 12:19:29 12:19:32 12:19:34 12:19:37

You are familiar with the concept of a compound device; right? 12:19:39 12:19:42

A. I am. Again, we are talking about 12:19:43

USB standard devices based on the specification. 12:19:45 12:19:47

Q. Absolutely. The USB devices that were available in the world, not talking about the patent, but like in the world in 2006 when Microchip filed its application. 12:19:47 12:19:51 12:19:53 12:19:57

A. Correct. 12:19:58

Q. So the hub and each function attached to the hub within the compound device is assigned its own device address. So that means there is going to be one device address for the keyboard and one device address for the trackball; right? 12:19:59 12:20:02 12:20:04 12:20:07 12:20:10 12:20:12

A. Right. 12:20:14

Q. And it says, keep going a little bit, "From the host's perspective, a compound device is the same as a separate hub with multiple functions attached." 12:20:14 12:20:19 12:20:21 12:20:24

So basically what this is saying is the host is seeing two different devices; right? It's seeing a hub and it's then seeing two devices that are attached to that hub? 12:20:26 12:20:28 12:20:31 12:20:34

A. I guess as a general description, that would be correct. 12:20:38 12:20:41

Q. Okay. 12:20:42

Now, the printer/scanner in a 12:20:43

standard USB, or we'll use this keyboard and 12:20:46

trackball, this keyboard and trackball, it 12:20:49

doesn't, in standard USB, report different 12:20:53

device descriptors to different hosts; right? 12:20:55

A. I'm sorry, can you ask that question 12:20:58

again? 12:21:01

Q. Sure. 12:21:01

In standard USB, if you've got a 12:21:02

compound device that has a keyboard and a 12:21:04

trackball, that's going to report to every 12:21:07

host, hello, I've got keyboard functionality 12:21:09

and I've got trackball functionality; right? 12:21:13

A. Correct. Not a multi-host device, 12:21:15

but a standard USB device. 12:21:18

Q. Right. 12:21:19

This standard compound device is 12:21:20

going to say, hello, I have both a keyboard 12:21:23

and a trackball? 12:21:25

A. Correct. 12:21:26

Q. Okay. 12:21:27

So every host is going to get the 12:21:27

same device descriptor information from the 12:21:30

device. 12:21:33

A. Yes. 12:21:35

Q. Okay. Let me just check on one 12:21:37

thing. 12:21:43

Now, today, you were talking about 12:21:45

the difference between claim 1 and claim 23; 12:21:48

is that right? In your testimony on direct, 12:21:53

you talked about claim 23 and what made it 12:21:58

special? 12:22:01

A. Correct. 12:22:01

Q. Right? 12:22:02

A. Yes. 12:22:02

Q. Okay. 12:22:03

And special, I mean, using claim 1 12:22:03

as an example, but special relative to what 12:22:06

you described as exemplary claim 1 -- 12:22:08

A. Right. It has features that are not 12:22:10

present in any of the other claims. 12:22:12

Q. Okay. 12:22:13

And if I understood your testimony 12:22:14

correctly, the thing that you were saying was 12:22:16

the special feature in claim 23 is that it can 12:22:19

simultaneously -- is that it can 12:22:23

simultaneously respond to access requests; is 12:22:26

that right? 12:22:30

A. Well, it would be better if we 12:22:30

brought up the claim language. 12:22:33

Q. Let's do that. 12:22:34

A. If we could do that. 12:22:35

MS. DURIE: Let's put up claim -- 12:22:37

if we can, Mr. Glass, pick one and go to the 12:22:38

end claim 23 or put up claim 23. Great. 12:22:41

BY MS. DURIE: 12:22:49

Q. So claim 23 says the controller, and 12:22:51

you said that's the multi-host device 12:22:56

controller; right? 12:22:57

A. Correct. 12:22:58

Q. The multi-host device controller is 12:22:59

operable to receive and respond to 12:23:01

simultaneous respective USB access requests 12:23:03

sent from the two or more USB hosts for 12:23:09

accessing a function of the shared USB device 12:23:12

block. 12:23:15

So this might be easier to 12:23:15

understand in the context of Figure 3. 12:23:17

MS. DURIE: And, Mr. Glass, if we 12:23:22

can now go to TX-1, page 4, and pull up 12:23:24

Figure 3. 12:23:29

BY MS. DURIE: 12:23:29

Q. So, controller is operable to receive and respond simultaneous access requests. So what that means here is both of the hosts can issue access requests at the same time down at the multi-host device controller; right? 12:23:32 12:23:33 12:23:36 12:23:39 12:23:44

A. It doesn't really discuss what the hosts do; it's describing what the controller has to be capable of doing. 12:23:48 12:23:50 12:23:52

Q. Fine. 12:23:53

The controller is capable of receiving those two requests for access at the same time? 12:23:53 12:23:55 12:23:57

A. Correct. 12:23:58

Q. And it is capable of responding to those two requests for access at the same time? 12:23:59 12:24:01 12:24:03

A. Correct. 12:24:03

Q. Right? 12:24:04

Now, you talk about this a little bit in your expert report; right? 12:24:05 12:24:09

A. I do. 12:24:12

MS. DURIE: And let me mark this for identification as 374. 12:24:22 12:24:23

MR. FENTON: Your Honor, sidebar. 12:24:35
MS. DURIE: I am not going to 12:24:37
admit it, it is just for identification. 12:24:38
MR. FENTON: All right. 12:24:41
(Whereupon, Trial Exhibit 374 was 12:24:41
introduced.) 12:24:51
MS. DURIE: And, Mr. Zatkovich, 12:24:51
this is just so you have it in front of you if 12:24:52
you have any questions. 12:24:55
THE WITNESS: Good. Okay. 12:24:56
MS. DURIE: It wouldn't be fair to 12:25:03
ask you questions about the report and not 12:25:06
give it to you. 12:25:07
So, 374 marked for identification. 12:25:09
MR. FENTON: I'm sorry, one more 12:25:11
objection. Is this incomplete? 12:25:12
MS. DURIE: I am going to get to 12:25:14
the claim charts, I have them separately, but 12:25:16
I wanted to start with the body of your 12:25:17
report. And I know there was a set of claim 12:25:19
charts that were attached to your report. And 12:25:21
if you want them now, I can give them to you 12:25:23
now. 12:25:25
MR. FENTON: Yes, I would like for 12:25:25

him to have the complete report. 12:25:27

MS. DURIE: Sure. Let's mark this 12:25:29

for identification as 375. 12:25:33

(Whereupon, Trial Exhibit 375 was 12:25:37

introduced.) 12:25:40

THE WITNESS: Thank you. 12:25:54

MS. DURIE: Okay. 12:26:04

BY MS. DURIE: 12:26:04

Q. So in front of you, you have 374, 12:26:05

that's your opening expert report, 375, that 12:26:07

is the claim charts that were attached to it; 12:26:10

right? 12:26:14

A. That's correct. 12:26:14

Q. Okay. 12:26:15

Now, I wanted to start by talking 12:26:16

about your expert report. Let's take a look 12:26:19

at paragraph 138. It appears on page 63. 12:26:24

And in paragraph 138 on page 63, 12:26:40

you are talking about the configuration of the 12:26:46

bridge; right? 12:26:49

A. I am, I believe. Hang on. 12:26:52

Q. Go ahead. Take your time or go ahead 12:26:55

and read it to yourself. That's fine. That's 12:26:57

why you have it. 12:26:59

(Whereupon, the witness reviews the exhibit.) 12:27:02 12:27:04

BY MS. DURIE: 12:27:25

Q. Are you with me? 12:27:25

A. I am. 12:27:26

Q. Okay. 12:27:26

So in paragraph 138, you say the configuration -- you're talking about the configuration of the bridge and you say, "It continues with the back and forth of requests and replies between the iPhone and the head unit through the bridge. It continues sequentially down the diagram," and this is referring to a diagram that's in your report, "until the iPhone has completed its configuration of the EP Bridge device. This is another example of simultaneous access of requests and replies from the phone and the head unit to the dual role hub." 12:27:27 12:27:30 12:27:31 12:27:33 12:27:35 12:27:38 12:27:42 12:27:44 12:27:46 12:27:49 12:27:51 12:27:54 12:27:57

So what you're talking about here is a set of messages that go back and forth from the iPhone and the head unit in the process of configuration; right? 12:27:59 12:28:01 12:28:05 12:28:07

A. Well, it's describing that during 12:28:10

that process, both sides of the bridge -- both hosts will continue, as I mentioned, hundreds of times a second to be doing requests. 12:28:13 12:28:17 12:28:19

Q. Right. 12:28:23

Back and forth, requests and replies? 12:28:23 12:28:26

A. Well, the first part of that refers to the enumeration process where you said get the descriptor, save descriptor, get interface, put interface. During that whole process, though, there are additional requests for both hosts to, again, hundreds of times a second, to request information from the shared device. 12:28:26 12:28:28 12:28:31 12:28:35 12:28:37 12:28:41 12:28:44 12:28:47

Q. Right. 12:28:47

There are requests and there are replies; right? 12:28:48 12:28:49

A. Right. 12:28:50

Q. And what you say in your report is there are simultaneous requests and replies; right? 12:28:51 12:28:53 12:28:56

A. Correct. 12:28:56

Q. So one of the features of the system you're saying here is that can happen 12:28:56 12:28:59

simultaneously? 12:29:01

A. It can happen simultaneously. 12:29:02

Q. Okay. 12:29:03

A. It may happen alternately. 12:29:04

Q. Now, we are going to talk more about that a little while later, but is there anywhere in your -- anywhere else in the body of your report -- we are going to talk about the claim chart in a second, but is there anywhere else in the body of your report that you can point me to where you talked about this idea of simultaneous responses -- simultaneous accesses I totally get, but simultaneous responses? 12:29:06 12:29:08 12:29:10 12:29:13 12:29:15 12:29:18 12:29:20 12:29:22 12:29:28 12:29:31

Do you know whether you talked about that anywhere else? 12:29:32 12:29:33

A. Again, it might be in the claim chart. 12:29:34 12:29:36

Q. Okay. 12:29:36

A. Again, I don't recall. It is a big report. 12:29:36 12:29:38

Q. We'll get to the claim chart. 12:29:39

MS. DURIE: If we can put up claim 1, for a moment, Mr. Glass. 12:29:41 12:29:43

BY MS. DURIE: 12:29:46

Q. So claim 1 has this idea of simultaneous requests for access in it; right? 12:29:47 12:29:52

A. I'm sorry, could you point to that? 12:29:57

Q. Sure. 12:29:59

Two-thirds of the way down, simultaneously request access to the USB device; right? 12:30:00 12:30:02 12:30:05

So part of claim 1 is that you've got a multi-host device controller and it allows the first and second host to simultaneously request access to USB device; right? 12:30:05 12:30:08 12:30:11 12:30:14 12:30:17

A. Correct. It is not talking about the capability of the controller; it is talking about the capability of the host. So in this particular case, the host may send simultaneous requests, but it doesn't necessarily say that they weren't -- the multi-host controller would have to either accept or respond to them. 12:30:17 12:30:19 12:30:20 12:30:23 12:30:26 12:30:27 12:30:31 12:30:33

Q. Okay. 12:30:34

But here, we have the controller; it's coupled to the USB device function block 12:30:34 12:30:37

to two upstream ports. It can establish concurrent respective dedicated connections between the device block and the first and second upstream ports, and those concurrent respective dedicated connections allow the first and second host to simultaneously request access to the USB device; right? 12:30:43 12:30:46 12:30:50 12:30:53 12:30:57 12:31:01 12:31:05

A. Correct. In other words, the host basically can speak or send requests as fast as they want. The controller doesn't necessarily have to accept and respond to those. 12:31:07 12:31:09 12:31:13 12:31:16 12:31:18

Q. Okay. 12:31:18

So the distinction that you were drawing between claim 1 and claim 23 is claim 1, the two hosts can ask at the same time, but you're saying claim 1 doesn't make it explicit that the controller -- or it doesn't allow the device to respond to those access requests at the same time? 12:31:19 12:31:21 12:31:24 12:31:27 12:31:30 12:31:32 12:31:34

A. Correct. 12:31:35

Q. Okay. 12:31:35

A. Significant difference. 12:31:36

Q. Okay. 12:31:36

Now, you were referring to your claim charts, so let's take a look at those. And let's take a look at what you set it up as in your claim charts. 12:31:37 12:31:41 12:31:46 12:31:49

Now, claim charts are thick, and in the claim charts, you talk both about claim 1, I apologize -- both about claim 1 -- I feel like I should just say, I get a scratchy throat; I promise, I'm not sick. 12:31:51 12:31:53 12:31:57 12:32:05 12:32:08

You talk both about claim 1 and about claim 23; right? 12:32:11 12:32:13

A. I do. 12:32:15

Q. And I want to talk specifically about -- 12:32:16 12:32:18

MR. FENTON: Objection, Your Honor. We are now comparing claim charts. 12:32:19 12:32:20

THE COURT: Well, hold on. 12:32:22

MR. FENTON: I'm sorry. 12:32:22

THE COURT: I don't want speaking objections. 12:32:24 12:32:25

MR. FENTON: I'm sorry. 12:32:26

THE COURT: If you want a sidebar... 12:32:27 12:32:29

MR. FENTON: Yes, sidebar, please. 12:34:10

(Whereupon, a discussion was held at sidebar as follows:) 12:34:10

THE COURT: Go ahead. 12:34:10

MR. FENTON: Counsel is seeking testimony to compare different claim charts. Mr. Zatkovich has not testified about in his claim charts for claim 1. It is outside of the scope of what he has testified about during his direct testimony. This is improper cross-examination. 12:34:10

MS. DURIE: He testified about the difference between claim 23 and 1. He said there is a difference. He said it's a special claim and the special claim would be different. So I asked about what he said in his report about what that difference is. 12:34:10

MR. FENTON: He was testifying on direct about the language, itself, the claim language itself. 12:34:11

THE COURT: I heard him on direct explain that. I mean, amongst other things, he specifically said on direct that the claims would all have to be distinct, that they wouldn't be allowed. He also -- and so, you 12:34:11

know, that coupled with the fact that he was pointing out certain things about the claims, I think this is fair game, so I am going to overrule the objection. 12:34:11 12:34:11 12:34:11 12:34:11

(Whereupon, the discussion at sidebar concluded.) 12:34:15 12:34:16

BY MS. DURIE: 12:34:16

Q. So what I wanted to do, Mr. Zatkovich, is talk to you about what you said in your claim charts you attached in your expert report about claim 1 and claim 23. 12:34:17 12:34:19 12:34:21 12:34:23

MS. DURIE: I am mindful, Your Honor, that it is 12:35 and you wanted to break for lunch. 12:34:25 12:34:26 12:34:29

THE COURT: I don't know how long it is. If it's more than a couple minutes -- 12:34:30 12:34:31

MS. DURIE: It is more than a couple minutes. 12:34:33 12:34:34

THE COURT: Okay. Then let's take a break for lunch. 12:34:35 12:34:35

Same caution during the break; don't go back and talk about what you're hearing, don't go back and talk about the testimony you've heard this morning. The time 12:34:37 12:34:38 12:34:41 12:34:44

to discuss it will be later after you've heard all the evidence. 12:34:46 12:34:48

So with that, we'll take a lunch break. Try to be back, let's say, at like 10 after 1, just so we can keep moving and get things done. Is that enough time for everybody? Okay. All right. 12:34:48 12:34:50 12:34:56 12:34:59 12:35:00

So let's do that. 12:35:01

(Whereupon, the jury was excused from the courtroom.) 12:35:03 12:35:05

THE COURT: Okay. Let's try to be back here in about a half hour, a little more than that. Enjoy your lunch. 12:35:27 12:35:29 12:35:33

MS. DURIE: Thank you. 12:35:35

(Whereupon, a 35-minute luncheon recess was taken at 12:35 p.m.) 12:35:36 12:35:38

THE COURT CLERK: All rise. 13:05:03

THE COURT: All right. Have a seat, please, everyone. 13:05:06 13:12:21

The jury, Mr. Koehler. 13:12:26

(Whereupon, the jury entered the courtroom.) 13:12:29 13:12:31

THE COURT: Have a seat, please. Welcome back, everybody. 13:13:00 13:13:01

Continue, Ms. Durie. 13:13:03

MS. DURIE: Thank you. 13:13:06

BY MS. DURIE: 13:13:08

Q. Now, Mr. Zatkovich, before lunch, we were talking about the fact that you provided an expert report and then you provided what we have been calling claim charts as an attachment to your expert report; right? 13:13:10 13:13:14 13:13:17 13:13:21 13:13:23

A. Correct. 13:13:25

Q. And the claim charts are where you take each of the claims, and every single one of the requirements of the claims, and you show what it is about Aptiv's product that you think satisfies those requirements; right? 13:13:26 13:13:28 13:13:31 13:13:34 13:13:36

A. Yes, that's correct. 13:13:39

Q. Okay. 13:13:40

And you provided claim charts for a number of different claims in the '243 Patent; right? 13:13:41 13:13:44 13:13:49

A. That's correct. 13:13:50

Q. You provided a claim chart for claim 1 and you provided a claim chart for claim 23? 13:13:50 13:13:54

A. That's correct. 13:13:58

MS. DURIE: And, Your Honor, what 13:13:58

I would like to do is, for demonstrative purposes only, put up a side-by-side of claim 1 and claim 23 to run through them, but I am not proposing to introduce them into evidence, but merely show them for demonstrative purposes. 13:14:00 13:14:02 13:14:05 13:14:07 13:14:09 13:14:11

THE COURT: Okay. 13:14:12

BY MS. DURIE: 13:14:21

Q. So, Mr. Zatkovich, while we are getting that in, in order to assist you in orienting, your discussion of claim 1 begins on page 1, but I want to start down at page 14, which is where you talk about the requirement in claim 1 for simultaneously requesting access to the USB device. 13:14:22 13:14:23 13:14:26 13:14:34 13:14:39 13:14:42 13:14:47

A. Page 14, did you say? 13:14:49

Q. Are you with me? Yes. 13:14:51

A. Yes, I have it. 13:14:58

Q. With me? 13:15:01

A. I am. 13:15:02

Q. Thank you. 13:15:02

MS. DURIE: Now, Mr. Glass, side-by-side, next to that, if we could put up, beginning at page 122, we have here claim 13:15:03 13:15:05 13:15:09

23, and we have the requirement wherein the controller is operable to receive and respond to simultaneous respective USB access requests sent by two or more hosts. 13:15:19 13:15:22 13:15:26 13:15:33

BY MS. DURIE: 13:15:34

Q. That is that third requirement of claim 23 that we have been discussing; correct? 13:15:35 13:15:37 13:15:39

A. 122. 13:15:40

Q. Yes, 122. 13:15:43

A. Yes, I have that. 13:15:46

Q. Okay. Great. 13:15:48

Now, in each case at the beginning, you have a sentence that says, "The USB dual role hub" -- I'm sorry, "the dual role hub allows," and then you basically quote the claim language; right? 13:15:50 13:15:53 13:15:58 13:16:03 13:16:05

A. Correct. 13:16:07

Q. And then for claim 1, you say, "The simultaneous access allows data to be, for example," and I am just going to pause there. And for claim 23 -- 13:16:07 13:16:11 13:16:16 13:16:18

MS. DURIE: You don't have to highlight it, Mr. Glass. 13:16:19 13:16:20

BY MS. DURIE: 13:16:22

Q. -- for claim 23, you say, "for 13:16:22

example, access requests allow data to be." 13:16:24

So simultaneous access, and the last access 13:16:26

request on the right. 13:16:34

But continuing on, I just want you 13:16:35

to read the language to yourself and confirm 13:16:37

that it is the same on these two pages for 13:16:38

both claim 1 and claim 23. 13:16:43

(Whereupon, the witness complies 13:16:46

with counsel's request.) 13:16:48

THE WITNESS: Correct. I provided 13:16:54

the same examples that actually means both. 13:16:56

MS. DURIE: Right. Two next 13:17:01

pages, 15 and 123. 13:17:03

BY MS. DURIE: 13:17:05

Q. So it continues for both claim 1 and 13:17:06

claim 23, same text appears for both claims; 13:17:08

right? 13:17:12

A. Correct. 13:17:12

Q. Okay. 13:17:12

Next two pages, 16 and 124. Take 13:17:13

a look here. Please confirm for me that the 13:17:19

same text appears for both claims. 13:17:24

A. Yes. Again, two examples that -- the same example in both claim numbers. 13:17:37 13:17:42

Q. Yeah. And I just want to pause for one moment. 13:17:44 13:17:46

The point of these claim charts is for you to set out in detail what your infringement analysis is; right? 13:17:47 13:17:49 13:17:51

A. Yes. 13:17:55

Q. Okay. 13:17:55

Next two pages, 17 and 125, please. Please confirm for me that these are also the same. 13:17:56 13:18:00 13:18:03

A. Yes. 13:18:07

Q. Okay. 13:18:08

Next two pages, 18 and 126, and now they are a little bit different; right? 13:18:09 13:18:15

A. A little bit, yes. 13:18:19

Q. Okay. Right. 13:18:20

So for claim 1, it stopped after, "the use of interrupt allows the simultaneous request for access by both hosts," and it continues. 13:18:20 13:18:24 13:18:27 13:18:31

MS. DURIE: And, Mr. Glass, if we can now have just 126 and 127 so that we can 13:18:31 13:18:33

look at the additional language that you provided for claim 23. So side-by-side is 126 and 127. Perfect. 13:18:37 13:18:41 13:18:45

BY MS. DURIE: 13:18:46

Q. So this is the additional language that you provided for claim 23 that you had not provided for claim 1; right? 13:18:47 13:18:48 13:18:50

Does that look right? 13:19:05

A. It does, yes. 13:19:06

Q. Okay. 13:19:07

So let's take a look at what you said. You said, "The use of interrupt allows the simultaneous access by both hosts." 13:19:07 13:19:09 13:19:12

We are talking about accessing and then response, so here we are talking about accessing; right? 13:19:15 13:19:16 13:19:19

A. Correct. 13:19:20

Q. And it says, "The function of that access is at least one of the functions described in the Apple spec; for example, the dual role hub implements a function for performing Apple authentication between two hosts, implemented networking interface as required by CarPlay, the packet first in first 13:19:21 13:19:26 13:19:28 13:19:33 13:19:37 13:19:40 13:19:43

out and associated control are used for these functions." 13:19:47 13:19:49

And then you continue reciting here the Boston product specification. You say, "Each endpoint pair implements packet transfer, the pipe transfers packets from an out endpoint to an in endpoint, packets are transferred," you talk about the control mechanism. 13:19:50 13:19:54 13:19:58 13:20:03 13:20:06 13:20:10 13:20:14

This is -- what are you talking about here, establishing the connection? 13:20:15 13:20:16

A. So claim 1 is basically talking about simultaneous requests from hosts and claim 23 is talking about simultaneous requests and responses that the multi-host controller can process. 13:20:18 13:20:22 13:20:25 13:20:27 13:20:32

Q. Okay. 13:20:33

A. So I am adding additional logic in claim 23 about the controller and how it processes requests. 13:20:33 13:20:37 13:20:39

Q. Okay. 13:20:42

And then in the next paragraph, you are talking a lit bit more about the logic that's in the controller to arbitrate and 13:20:42 13:20:45 13:20:48

respond to access requests, so that's the simultaneous response that's in claim 23; right? 13:20:52 13:20:54 13:20:58

A. Yeah, that's one. 13:20:58

Q. And you say, "For example, the Boston product specification indicates that the out endpoint NAKs any transferred packet with FIFO is full." What does a NAK stand for? 13:21:01 13:21:04 13:21:09 13:21:13

A. NAK means -- an example I used for Spotify, for example. The Spotify buffers will fill up faster than the head unit. So when the FIFO busters fill up, the bridge basically says NAK, meaning I can't take anymore at the moment. 13:21:16 13:21:20 13:21:22 13:21:26 13:21:29 13:21:31

Q. NAK means, I'm full? 13:21:32

A. Right. It's a response, but it's a response saying don't send me anymore. 13:21:34 13:21:36

Q. Exactly. 13:21:38

And so when a host is communicating with the device and sending information to a device by way of example or a device is communicating with a host and sending information to a host, if one side or the other can't accept the information, it 13:21:39 13:21:40 13:21:42 13:21:46 13:21:48 13:21:50

sends a NAK that basically says, I'm full. A NAK is a standard USB function; right? 13:21:53 13:21:56

A. It is. 13:21:59

Q. And so what is happening here is that in response to being full, the device is sending a standard USB response that says, I am full? 13:21:59 13:22:00 13:22:05 13:22:10

A. Correct. 13:22:10

Q. And then you continue, "ping," P-I-N-G, what's that? 13:22:10 13:22:15

A. That's another function basically to keep alive or indicating that the device is still there, being connected. 13:22:18 13:22:21 13:22:24

Q. Standard USB function? 13:22:26

A. Yes. 13:22:27

Q. Okay. 13:22:27

And then you talk about "in token default responses assist in the arbitration between access requests from the host." 13:22:28 13:22:33 13:22:36

Everything there is standard USB function; right? 13:22:38 13:22:41

A. Yeah. For that -- for that side -- for each side of the multi-host controller. 13:22:42 13:22:46

Q. And that's where your analysis of 13:22:49

claim 23 in your claim chart ends? 13:22:54

A. Correct. 13:22:57

Q. Great. Okay. 13:22:58

Now, the patents -- 13:22:59

MS. DURIE: Let's actually go back 13:23:07

to Figure 3 and slide 40, please, Mr. Glass. 13:23:08

BY MS. DURIE: 13:23:18

Q. Now, what we have up here is 13:23:18

Figure 3, which we are now probably all very 13:23:21

familiar with. And you would agree, sir, that 13:23:26

the multi-host controller shown in Figure 3 of 13:23:28

the '243 acts as an arbiter in controlling 13:23:31

which of the two hosts it can access the 13:23:35

device/function block 312, including when that 13:23:37

access is permitted? 13:23:41

A. Correct. 13:23:43

Q. And the patent explained how the 13:23:44

hosts can alternate access; right? 13:23:48

A. You mean alternate access between two 13:23:51

separate hosts? 13:23:53

Q. Alternate how the hosts can alternate 13:23:54

access to the devices. 13:23:58

A. Right. 13:23:59

Q. Right. 13:24:00

MS. DURIE: Let's see slide 41. 13:24:01

BY MS. DURIE: 13:24:01

Q. So one way that the multi-host device controller can allow the two different hosts to alternate access to the device is with an internal arbitration mechanism that may permit each host, first host and second host, to access the shared function by interleaving host accesses. 13:24:04 13:24:08 13:24:11 13:24:15 13:24:20 13:24:22 13:24:27

MS. DURIE: So let's go back a second to slide 40, Mr. Glass. 13:24:29 13:24:30

BY MS. DURIE: 13:24:33

Q. So here we've got the two hosts at the top, we've got the multi-host device controller, and what we're talking about is a way to allow the two hosts to alternate access to the device/function; right? In the patent, let's go back to slide 41. 13:24:33 13:24:35 13:24:37 13:24:39 13:24:43 13:24:50

A. No, actually, let me finish reading that paragraph, please. 13:24:52 13:24:55

Q. Well, here it is. Here it is. 13:24:56

A. Okay. 13:25:00

Q. Interleaving host accesses. Permitting each host to access the peripheral 13:25:00 13:25:03

function by interleaving host accesses. 13:25:06

Interleaving is a form of 13:25:09

alternating access; right? 13:25:11

A. Yes, that would be one example how a 13:25:12

multi-host would work. 13:25:16

MS. DURIE: Let's go to slide 42. 13:25:19

BY MS. DURIE: 13:25:19

Q. Patent continues or by using a common 13:25:20

request grant structure that may hold up one 13:25:23

host while another host completes a data 13:25:27

transfer to or from a shared device. 13:25:29

That's another form of alternating 13:25:32

access; right? 13:25:34

A. Correct. 13:25:35

Q. And the system of holding up one host 13:25:35

while another host completes a data transfer 13:25:39

means the two hosts won't collide with each 13:25:42

other when they're both trying to send 13:25:44

information to the device? 13:25:47

A. If the device is not capable of 13:25:47

making -- streaming at the same time. 13:25:50

Q. Right. It's kind of like an air 13:25:51

traffic controller; right? The multi-host 13:25:53

device controller is acting like an air 13:25:58

traffic controller basically saying you get to go, you get to go, you get to go? 13:26:00 13:26:02

A. Again, if the device can only accept data from one host at a time. Some devices, some shared USB blocks -- 13:26:04 13:26:07 13:26:11

Q. Well -- 13:26:12

A. -- could accept data from both hosts at the same time. 13:26:12 13:26:15

Q. This concept of arbitrating between multiple host requests, that is something that the patent office found to be at the heart of the purported invention of the '243 Patent; right? 13:26:16 13:26:21 13:26:24 13:26:28 13:26:32

A. I'm not sure I would characterize it that way, but it would certainly be one function of the patent. 13:26:33 13:26:36 13:26:38

Q. Well, let's take a look. 13:26:39

MS. DURIE: Your Honor, I want to mark for identification TX-370. That is the entire record of the Inter Partes Review proceeding. It's huge. I'd like to offer it and then hand the witness a portion of it that is the final disposition. 13:26:42 13:26:42 13:26:46 13:26:49 13:26:52 13:26:58

MR. FENTON: Objection, scope. 13:27:06

Objection. Sidebar. 13:27:07

THE COURT: Okay. Come on up. 13:27:08

(Whereupon, a discussion was held at sidebar as follows: 13:27:08

MR. FENTON: This witness has not looked at these materials, has not studied these materials. She's asking him to perform an analysis of a 3,000 page document on the fly. 13:32:43

It's also -- this is the prosecution history of the IPR -- sorry, this is not a prosecution of the history. We actually confirmed it is not in the file history. 13:32:43

THE COURT: I am confused now. I thought we were marking it as the prosecution history? 13:32:43

MS. DURIE: It is the entirety which we would seek to be admitted as a whole big thing. 13:32:43

THE COURT: It is not the file wrapper? 13:32:43

MR. FENTON: Correct. It is not the file wrapper. So I actually don't know 13:32:43

which section she is going to point to, but this is hearsay within hearsay that we were concerned about that the court cases that deal with say you have to be careful when you're talking about specific statements within these documents, even if it is the opinion. So it's potentially highly prejudicial for these to be shown to the jury. 13:32:43

If she was to ask questions about them, that's one thing. But if she wants to show that to the jury, that's the part that's problematic. 13:32:43

THE COURT: Wait. I thought that we had decided at the final pretrial conference that this was going to be admitted into evidence as one big block? 13:32:43

MR. FENTON: It's one thing for it to be admitted into evidence. It is another thing for the specific statements within it -- we were reserving our objections to -- I don't know that she is offering to show it to the jury. 13:32:43

THE COURT: No. You can't both admit it and object to it. You either admit 13:32:43

it or you don't. Once it's admitted into evidence, the jury can see it. 13:32:43

MR. FENTON: Your Honor, I respectfully -- 13:32:43

THE COURT: That's how evidence works. 13:32:43

MR. FENTON: Yes, the jury can see it, but if we are highlighting sections of it, there are cases where the decision has come out that you have to look at the individual statements to see if those should be -- if those are proper. 13:32:43

THE COURT: No, no, but the decisions say that you have to look at individual statements if you parse what can and cannot come into evidence, right? Once you are deciding that it can all be in evidence, then it is in evidence. I mean, we are going to send all the evidence back to the jury. 13:32:43

MR. FENTON: Then I need to say this is outside the scope of direct and we are very far afield from the statement that he made, which was the claim language, itself, 13:32:44

and the difference between claim 1 and 23. 13:32:44

MS. DURIE: He was saying about 13:32:44

whether the -- he was just quarreling whether 13:32:44

the claim language encompasses devices where 13:32:44

you've got simultaneous access and said well, 13:32:44

sure, alternating access with some device, but 13:32:44

not every device. That's inconsistent with 13:32:44

the record of the proceeding of the case. 13:32:44

MR. FENTON: The record of our 13:32:44

arguments or the record of findings? 13:32:44

MS. DURIE: It is the final 13:32:44

written decision of the 19th Circuit. 13:32:44

THE COURT: Well, he hasn't -- he 13:32:44

hasn't seen -- or at least you haven't 13:32:44

established that he has seen the final written 13:32:44

decision. 13:32:44

MS. DURIE: So he -- 13:32:44

THE COURT: I'm sorry. But the 13:32:44

final written decision is not -- I mean, his 13:32:44

testimony is not about the written decision, 13:32:44

it is about validity, and his testimony is 13:32:44

about infringement. I mean, I understand 13:32:44

that, at some level, that requires him to 13:32:44

opine on the scope of the claims. 13:32:44

MS. DURIE: They have to be consistent, and that's my only point. I am not going to ask about prior art; I'm not going to get into the prior art. All I am going to talk to him about is what he deems -- the point at which he agrees there has to be consistent positions with respect to what the claims cover. That's the only thing we are going to talk about.

I am not proposing to get into prior art. And it is in evidence. I mean, we had an agreement it would be in evidence.

THE COURT: I understand it would be in evidence, but the objection is a different one now.

MS. DURIE: Yeah.

THE COURT: Okay. I don't entirely know what you are going to show him so I am proceeding in a vacuum. So put it up, let's see what it is, and then if you think -- if it really is beyond the scope of the direct exam, then you can renew the objection.

Having said that, I just want to be clear that from my perspective, if he's

opining on -- by necessity, opining on the scope of the claims in order to get to infringement, then she is certainly allowed to impeach, right, on that. I'm sorry, I don't mean to refer to you in the third person because you are standing here. 13:32:44

MS. DURIE: That's all right. 13:32:44

MR. FENTON: Except that he is not opining today in court on the scope of claim 1. 13:32:44

THE COURT: No, I know he is not opining on the scope of claim 1. 13:32:44

MS. DURIE: Claim 23. 13:32:45

THE COURT: And that's why I need to hear the question a little bit. 13:32:45

MS. DURIE: Yes. 13:32:45

MR. FENTON: Thank you. 13:32:45

(Whereupon, the discussion at sidebar concluded.) 13:32:47

MS. DURIE: Your Honor, we offer 370. 13:32:50

MR. FENTON: No objection. 13:33:04

THE COURT: It will be received. 13:33:05

MS. DURIE: And I am going to hand 13:33:06

to the witness pages 3253 through 3442. 13:33:08

MR. FENTON: Sorry, I need another 13:33:24
sidebar. I apologize. 13:33:26

(Whereupon, a discussion was held 13:34:33
at sidebar as follows: 13:34:33

MR. FENTON: I apologize for the 13:34:33
two parts, but we agreed that the whole thing 13:34:33
would come in as a group, and now we're 13:34:33
handing individual documents. That's exactly 13:34:33
what we were saying. 13:34:33

THE COURT: No. The whole thing 13:34:33
has come in. As with any other exhibit, 13:34:33
particularly a voluminous one, you can call 13:34:33
out portions of it. If you think that there 13:34:33
are parts of it that render it incomplete, you 13:34:33
can either redirect on it, or if it's 13:34:33
materially misleading in some way, you can 13:34:33
object. But if it's in evidence, it's in. 13:34:33

MR. FENTON: Understood, Your 13:34:33
Honor. 13:34:35

(Whereupon, the discussion at 13:34:35
sidebar concluded.) 13:34:35

BY MS. DURIE: 13:34:37

Q. Mr. Zatkovich, you should have in 13:34:37

front of you the final written decision from the, what we have been calling IPR proceeding. 13:34:40 13:34:43

Do you see that? 13:34:46

A. I have that. 13:34:47

Q. And if we can turn to page 3280 -- the pages are at the bottom. It is page 3280 of 3442. 13:34:50 13:34:59 13:35:05

A. Yes, I have that. 13:35:10

Q. Are you with me? 13:35:11

A. I'm sorry, 3284 of 3442? 13:35:12

Q. 3280, 3-2-8-0 and it is page 28. 13:35:17

A. Page 28 of the document. Okay. 13:35:23

Q. Yes. 13:35:25

And you understand this is the decision of the patent office on that Inter Partes Review proceeding? 13:35:26 13:35:34 13:35:40

A. I don't. I haven't seen the document before. But if you're representing that it is, I believe that fact. 13:35:40 13:35:44 13:35:46

Q. So even up to your testimony in court here today, you have not read what the patent office determined about the scope of the claims? 13:35:47 13:35:51 13:35:53 13:35:58

A. No. It wasn't relevant to my 13:35:58

testimony. 13:36:00

Q. Okay. 13:36:00

Is it relevant -- is the following 13:36:04

relevant to your testimony? 13:36:07

"Neither party identifies nor do 13:36:08

we discern any disclosure in the USB 13:36:11

specification describing a capability to 13:36:15

arbitrate among multiple host requests. 13:36:18

Indeed, adding such a feature is at the heart 13:36:21

of the purported invention of the '243 Patent; 13:36:24

i.e., the point of novelty." 13:36:28

Do you disagree that the 13:36:31

capability to arbitrate among multiple host 13:36:34

requests is at the heart of the invention of 13:36:38

the '243 Patent? 13:36:42

A. Yes. Some of the claims would meet 13:36:44

the limitation if they alternate the request. 13:36:48

Some of the claims would require some 13:36:51

continuous requests. But yes, that would be 13:36:54

one key function of the claim -- some of the 13:36:55

claims in the patent. 13:36:59

Q. So your opinion is inconsistent with 13:37:00

the decision of the patent office, that that 13:37:03

capability to arbitrate among multiple host 13:37:07

requests is at the heart of the invention of the patent? 13:37:10 13:37:13

A. Not at all. I believe not being able to alternate the access would be a key feature of that. 13:37:14 13:37:17 13:37:21

Q. Okay. 13:37:21

A. As would be simultaneous access. 13:37:22

Q. Well, in fact, the asserted claims in all of the patents require alternately accessing the USB device or device block; right? 13:37:24 13:37:31 13:37:35 13:37:40

A. Could you point -- I'm sorry, could you point me to it? 13:37:42 13:37:44

Q. Sure. 13:37:46

MS. DURIE: Let me mark for identification only Exhibit -- as Exhibit 376, a copy of the reply report of Ivan Zatkovich. 13:37:49 13:37:51 13:37:55

(Whereupon, Trial Exhibit TX-376 was introduced.) 13:38:01 13:38:07

BY MS. DURIE: 13:38:18

Q. Mr. Zatkovich, you have in front of you now a copy of your reply report; correct? 13:38:19 13:38:21

A. Correct. 13:38:23

Q. Please turn to paragraph 62. In 13:38:24

paragraph 62, you say, "The asserted claims in both the '243," and another patent, "require alternately accessing the USB device, device block function block without either host reconfiguring the device." 13:38:36 13:38:41 13:38:46 13:38:52 13:38:55

Now, when you say here in your reply report, "the asserted claims," you are including, among the asserted claims, 23, 24 and 25; right? 13:38:56 13:38:58 13:39:02 13:39:06

A. Yes, that's correct. 13:39:15

Q. Okay. 13:39:16

Now, let's talk about the Aptiv device. 13:39:16 13:39:20

MS. DURIE: If we could have slide 45 -- actually, I take that back. You know what? Let's continue on this theme of access. If we could have slide 50. 13:39:22 13:39:24 13:39:26 13:39:32

BY MS. DURIE: 13:39:36

Q. Now, you have expressed the opinion that in the context -- 13:39:37 13:39:41

MS. DURIE: Actually, you know what. I did that. Can you go back -- I'm sorry. Can you go back to slide 45 for a minute. 13:39:43 13:39:44 13:39:47 13:39:51

BY MS. DURIE: 13:39:53

Q. So in the Aptiv device, each host accesses its device basically whenever it wants; right? 13:39:53 13:39:56 13:40:00

A. Yes. I'd say that's accurate. 13:40:02

Q. Okay. 13:40:05

And you have expressed the opinion that that is a form of alternating access; right? 13:40:05 13:40:07 13:40:10

A. Again, when each device is polling the bridge hundreds of times a second, some of those accesses are going to be alternating, some of those accesses are going to be simultaneous. So yes. 13:40:10 13:40:14 13:40:17 13:40:20 13:40:22

Q. Go to the next slide. I just want to break down what it is you are saying here. 13:40:24 13:40:28

So what you are saying, and I think you just said it consistent with what you said in your report, not every access -- not every set of accesses from both hosts would coincidentally occur simultaneously? 13:40:29 13:40:31 13:40:33 13:40:36 13:40:40

A. Correct. 13:40:44

Q. Right. 13:40:45

So you're saying sometimes, 13:40:45

coincidentally, both hosts might send requests at the same time. And then you say -- 13:40:47 13:40:50

MS. DURIE: If we could have the next slide. Sorry, if we can go -- sorry, slide 52. Apologies. 13:40:54 13:40:55 13:40:59

BY MS. DURIE: 13:41:03

Q. You say, "accesses made to the bridge by both hosts may not occur simultaneously, and therefore they would be alternating accesses." 13:41:03 13:41:06 13:41:09 13:41:11

So what you're saying here is if, by coincidence, one host sends a request to its device at one point in time, and the other host sends a request to its device at a different point in time, if, by coincidence, those things do not happen simultaneously, they are alternating? 13:41:12 13:41:14 13:41:17 13:41:20 13:41:22 13:41:25 13:41:28

A. Right. And the microcontroller, the multi-host controller would have to support that. 13:41:29 13:41:33 13:41:37

MS. DURIE: Could I get the physical device that we had? 13:41:43 13:41:44

Perfect. Thank you. 13:41:45

BY MS. DURIE: 13:41:47

Q. So I don't remember, Mr. Zatkovich, whether you were present in court for this. 13:41:47 13:41:49

A. Yes, I believe I was. 13:41:52

Q. Okay. 13:41:53

So we have one USB Ethernet controller; right? 13:41:54 13:41:57

A. Meaning, the one that you are holding in your hand? 13:42:00 13:42:02

Q. Yes. 13:42:03

A. Yes. 13:42:04

Q. And we have a second USB Ethernet controller; right? 13:42:04 13:42:06

A. Correct. 13:42:07

Q. And we have the crossover cable that connects it; right? 13:42:07 13:42:10

A. Correct. The crossover cable running from the Ethernet port, yes. 13:42:11 13:42:16

Q. Right. 13:42:16

And so I can plug this into the USB port on one computer, plug this into the USB port on the other computer, and send data back and forth between the two computers; right? 13:42:17 13:42:18 13:42:22 13:42:24 13:42:26

A. Sure. 13:42:26

Q. Between the two USB hosts; right? 13:42:27

A. Yes. 13:42:29

Q. And what you're saying is if this computer happens to send data at point in time A, and this one sends data at the same point in time A, they could be sending things simultaneously; right? 13:42:29 13:42:32 13:42:35 13:42:38 13:42:40

A. That's correct. 13:42:41

Q. And you're saying if it happens just coincidentally, that this one sends data to the opposite computer at one point in time and this one sends it at a different point in time, that is a form of alternating access? 13:42:41 13:42:43 13:42:46 13:42:49 13:42:51

A. Yeah, but when you are using the term "coincidentally," meaning within a given second. So some may be simultaneous, some may be alternating. And we are going to see those simultaneous access happening thousands of times when you have a transaction and alternating access is happening thousands of times. 13:42:53 13:42:56 13:42:59 13:43:02 13:43:05 13:43:07 13:43:10 13:43:12

Q. But your point is it's a system for allowing access if it allows, by complete coincidence, things to happen at the same 13:43:12 13:43:15 13:43:18

time? 13:43:20

A. No, we are talking about the behavior 13:43:20
of the host. The device is in control of the 13:43:22
host, and the host has the ability to send 13:43:23
transactions whenever they want. The 13:43:24
multi-device controller has to have the 13:43:29
ability to support whether they send them 13:43:30
simultaneously or alternately. The 13:43:32
functionality in the multi-host device does 13:43:39
not happen coincidentally, it happens by 13:43:42
design. 13:43:43

Q. And if, by coincidence, both hosts 13:43:44
send data at different times, that's 13:43:48
alternating access? 13:43:50

A. Right, the multi-host device is 13:43:51
designed to support both alternate and 13:43:54
simultaneous. It is not by coincidence. 13:43:56

MS. DURIE: Let's put up slide 36 13:44:01
and go back to Figure 3. 13:44:03

BY MS. DURIE: 13:44:03

Q. So Figure 3 shows one multi-device 13:44:04
controller connected to two hosts; correct? 13:44:09

A. Right. 13:44:11

Q. It is also connected to a share 13:44:11

device connection block 312; right? 13:44:13

A. Yes. 13:44:16

Q. Claim 23, if we can go to slide 38, 13:44:17

requires a shared USB? 13:44:20

A. I'm sorry, could you back up? How 13:44:22

did you describe block 312? 13:44:25

Q. Go back. I said it is a shared 13:44:28

device or function. 13:44:30

A. Pertaining to which claim? 13:44:32

Q. Well, it was a general statement, but 13:44:35

let's take a look specifically at claim 23. 13:44:37

We can go to slide 38. 13:44:40

A. Each claim describes that box 13:44:42

slightly differently. 13:44:43

Q. Claim 23 says that box, if you will, 13:44:44

is a shared USB device block; right? 13:44:47

A. That's correct. 13:44:50

Q. And a USB device block is something 13:44:51

that performs a function for a host; right? 13:44:54

A. Yes. 13:44:58

Q. Okay. 13:44:59

And claim 23 requires the shared 13:44:59

USB device block to be operable to be 13:45:02

simultaneously configured by two or more USB 13:45:05

hosts; right? 13:45:08

A. I'm sorry, which claim element are you -- 13:45:11 13:45:14

Q. 23, a shared USB device block is operable to be simultaneously configured by two or more hosts. 13:45:15 13:45:18 13:45:21

MS. DURIE: You can go to slide 39, I believe. 13:45:23 13:45:25

BY MS. DURIE: 13:45:27

Q. Right? 13:45:27

A. Correct. 13:45:27

Q. So the two hosts share the same USB device block; right? 13:45:28 13:45:32

A. Correct. 13:45:34

Q. And in the contents of claim 23, each host must be able to access and share the same segments of the USB device block; right? 13:45:35 13:45:40 13:45:42

A. Yes, I believe that's correct. 13:45:48

Q. And each host must be able to perform the same function in the USB device block; right? 13:45:50 13:45:52 13:45:55

A. In accessing a function, and we have specific claim definition construction for that. I have a copy of that. If you want to 13:46:04 13:46:08 13:46:11

put that up, I can give you a little more precision on that. 13:46:18 13:46:21

Q. Well, let me ask you this: 13:46:22

Do you agree that each host must be able to access and share the same segment of the USB device, which, again, would be the USB device block, and perform the same function in that? 13:46:23 13:46:25 13:46:28 13:46:31 13:46:34

A. I am trying to figure out where you are quoting from because I don't think that matches the claim construction. 13:46:39 13:46:40 13:46:42

Q. I am quoting from your deposition. I am happy to read it. Page 74, line 21 through 75, 13. 13:46:43 13:46:46 13:46:52

A. And we were talking about claim 23? 13:46:54

Q. Let me read it. 13:46:56

"QUESTION: And what is it that you understand has to be shared to count? 13:46:57 13:46:59

"ANSWER: So I am looking at claim 18 of the '243 and also claim 23 of the '243. So could you ask that question again? 13:47:03 13:47:05 13:47:11

"QUESTION: Does the device or function that both hosts use have to be the same shared function? 13:47:14 13:47:15 13:47:19

"ANSWER: I'm sorry, one more time. 13:47:20 13:47:22

"QUESTION: As you understand the scope of the asserted patent, does the USB device block corresponding to at least one function have to be the same shared function for each host? 13:47:23 13:47:25 13:47:27 13:47:30 13:47:32

"ANSWER: Each host must be able to access and share the same segment of the USB device, which, again, would be the USB device block and perform the same function in that which may or may not be the same as the formal definition of the term USB function." 13:47:34 13:47:37 13:47:40 13:47:42 13:47:46 13:47:48

Are you with me? 13:47:54

A. Yes. I think so. I recall that statement. 13:47:55 13:47:59

Q. Now, you should have in front of you the institution decision that I handed you a few moments ago, and I would ask you to turn to page 3270. 13:48:00 13:48:03 13:48:08 13:48:13

Now, you see -- are you looking at 3270? It's page 18. 13:48:34 13:48:36

A. I am now. 13:48:38

Q. Okay. 13:48:39

And you see there is a discussion here of the meaning of the term "shared USB device block"? 13:48:40 13:48:42 13:48:47

A. Shared USB device block or shared USB device? 13:48:54 13:48:57

Q. Shared USB device block. 13:48:58

Take a look, starting in the third line on page 18. 13:49:04 13:49:07

MR. FENTON: Objection, Your Honor. It calls for a legal conclusion. 13:49:10 13:49:11

THE COURT: Let her form her question and then you can object. 13:49:13 13:49:17

BY MS. DURIE: 13:49:18

Q. You see about four lines down in the paragraph, it says, "Thus we construe shared USB device block means a function as discussed above that is shared or accessible by two or more USB hosts"? 13:49:19 13:49:21 13:49:24 13:49:29 13:49:32

MR. FENTON: Objection. Calls for a legal conclusion. 13:49:38 13:49:39

THE COURT: Overruled for now. She is only asking whether or not he sees the language. Okay, he sees the language there. 13:49:39 13:49:41 13:49:44

BY MS. DURIE: 13:49:46

Q. Do you see that language? 13:49:47
A. I do. 13:49:48
Q. Now, this portion refers to a function. If you turn two pages earlier on page 16 -- 13:49:48 13:49:52 13:49:56
A. Again, I am trying to reconcile the paragraph that we just looked at. It appears that this is using a different definition of the term than the Court provided in this litigation. 13:50:00 13:50:01 13:50:04 13:50:07 13:50:08
Q. So you disagree -- you think there is a conflict between -- 13:50:10 13:50:13
MR. FENTON: Objection, Your Honor. Sorry. Sidebar. 13:50:15 13:50:16
(Whereupon, a discussion was held at sidebar as follows: 13:54:07 13:54:07
MR. FENTON: Your Honor, she is trying to bring a claim construction that this Court denied so we are now going to have a conflicting legal understanding of what the claims are. 13:54:07 13:54:07 13:54:07 13:54:07 13:54:07
MS. DURIE: Absolutely not. The Court construed USB device block as a shared function. This is completely consistent with 13:54:07 13:54:07 13:54:07

that. I just asked him if he agreed with that. 13:54:07

MR. FENTON: But the PTAB showed a different claim construction. I don't have this right with me, but she is asking about claim construction. The witness just said that is a different claim construction he's been using. Will you put up the claim construction? 13:54:07

MS. DURIE: Absolutely. I am going to. 13:54:07

MR. FENTON: This is a legal area. This is very -- 13:54:07

THE COURT: I am concerned today that I am seeing -- I mean, he says there is a different claim construction. I know you had this dispute about some of the language with respect to claim 18, which is not here. 13:54:07

MS. DURIE: Which is not here. 13:54:07

THE COURT: I don't want to open the door to that inadvertently. 13:54:07

MS. DURIE: I am not -- 13:54:07

THE COURT: Hold on. Let me just finish to keep a clean record. 13:54:07

I am just concerned -- I don't think that's what you're trying to do, but I'm concerned we are going to get there very quickly and then we are going to have to spend a lot of time explaining to the jury, which I would like to avoid. 13:54:07

So if what we are talking about is the construction of claim 23, then leave it there. But it's got to be either they are the same constructions or it is the Court's construction. To the extent there are diversions, we are not using the PTAB. 13:54:07

MS. DURIE: I will be clear there are diversions, I agree. I already asked him to confirm the Court's construction. I am happy to put it up. 13:54:07

MR. FENTON: But I am also concerned about putting up language from a claim construction ruling that might be inconsistent or have an explanation. It's not for the jury to understand the claim constructions. 13:54:07

THE COURT: So I agree with that, and I don't want to go down that path. I 13:54:07

need -- I don't have the claim construction right in front of me. 13:54:07 13:54:07

Can you tell me exactly where you are going with all of this to know -- it's not clear to me -- to know why we need to put in front of him claim constructions from the PTAB? 13:54:07 13:54:07 13:54:07 13:54:08 13:54:08

MS. DURIE: So the term that the Court construed is USB device. The claim requires that that USB device be shared claim language. 13:54:08 13:54:08 13:54:08 13:54:08 13:54:08

THE COURT: Right. 13:54:08

MS. DURIE: I want to get at his understanding, in the context of claim 23, about what that requires. 13:54:08 13:54:08 13:54:08

THE COURT: But there is a difference between his understanding -- he has already testified that he hasn't reviewed this decision, so this decision cannot inform his understanding. So there is a difference between impeaching with this and using this to either inform or test his understanding. 13:54:08 13:54:08 13:54:08 13:54:08 13:54:08 13:54:08 13:54:08 13:54:08

He hasn't reviewed this. So what's the foundation to give him claim 13:54:08 13:54:08

construction from PTAB to establish his understanding? 13:54:08

MS. DURIE: To see whether he believes it is or isn't. 13:54:08

THE COURT: But that's not his -- I think that's beyond the scope of what he has done here today. He has testified that he did not review the PTAB ruling. Whether or not -- if there is some argument to be made in closing -- 13:54:08

MS. DURIE: Okay. 13:54:08

THE COURT: -- that's fine, but it is not for him to do it. 13:54:08

MS. DURIE: Okay. 13:54:08

THE COURT: There's no foundation for him to do it. 13:54:08

(Whereupon, the discussion at sidebar concluded.) 13:54:15

BY MS. DURIE: 13:54:16

Q. Just to be clear, Mr. Zatkovich, when you came up with your understanding of what a shared USB device block was in the context of claim 23, you had not read the decision of the patent office on that subject; right? 13:54:17 13:54:18 13:54:24 13:54:27 13:54:31

A. Correct. They used the definition in terms that were defined by this Court, not by the IPR. 13:54:33 13:54:36 13:54:40

Q. And you haven't looked at the decision of the patent office to reach any judgment about whether they are the same or different? 13:54:41 13:54:42 13:54:45 13:54:46

A. Again, they may have different definitions, but I can't form opinions on those different definitions; I have to inform opinions on the definitions of this Court. 13:54:46 13:54:48 13:54:50 13:54:53

Q. Okay. 13:54:54

Have you reviewed the declaration that Microchip's expert submitted in connection with this proceeding? 13:54:55 13:55:02 13:55:05

A. Are you talking about Dr. Garney's report? 13:55:08 13:55:10

Q. Mr. Knapen. 13:55:11

A. Mr. Knapen, no, I did not. 13:55:12

Q. So I take it, therefore, you don't have any view about whether what Mr. Knapen said in connection with the proceedings in the patent office is consistent with what you are saying here today? 13:55:14 13:55:16 13:55:19 13:55:21 13:55:24

A. I couldn't say either way. It may be, it may not be. 13:55:24 13:55:27

Q. Now, claim 23 requires a shared USB device block operable to be simultaneously configured by two or more USB hosts; right? 13:55:28 13:55:34 13:55:38

A. Correct. 13:55:41

MS. DURIE: And if we can go to NCD2-71. 13:55:45 13:55:47

BY MS. DURIE: 13:55:52

Q. You identified in your direct testimony what you called the three main features of CarPlay and what those features require. 13:55:53 13:55:54 13:55:56 13:55:59

Do you see that? 13:55:59

A. I do. 13:56:01

Q. Okay. 13:56:02

And you did not specifically identify simultaneous configuration as one of the things that was required for this functionality; correct? 13:56:03 13:56:06 13:56:11 13:56:13

A. I'm sorry, could you ask that question again? 13:56:18 13:56:20

Q. Sure. 13:56:21

You did not identify simultaneous 13:56:21

configuration as one of the things that was specifically required in order to be able to achieve this functionality? 13:56:24 13:56:28 13:56:30

A. In other words, is simultaneous configuration of the claim 23 an aspect of one or more of these features? 13:56:32 13:56:35 13:56:44

Q. Well, I will withdraw the question. Let me ask it this way. 13:56:45 13:56:47

Simultaneous means at the same time; right? 13:56:48 13:56:50

A. Correct. 13:56:51

Q. Okay. 13:56:52

A. Both hosts have to be connected and operational at the same time. 13:56:53 13:56:56

Q. We are going to talk about that. 13:56:58

MS. DURIE: Let's go to slide 54. 13:57:00

BY MS. DURIE: 13:57:04

Q. Figure 3 of the patent is a system that allows for simultaneous configuration; right? 13:57:05 13:57:07 13:57:10

A. Yes. 13:57:12

Q. The invention allows a single USB device to be connected to two different hosts and be accessed with two separate addresses at 13:57:13 13:57:17 13:57:19

the same time; right? 13:57:23

A. Correct. 13:57:24

Q. And the separate endpoint and status buffers, a lock with the device controller, would allow two hosts to configure the multi-host USB device at the same time; right? 13:57:25 13:57:29 13:57:32 13:57:36

A. It allows them to be configured at the same time. 13:57:40 13:57:42

Q. Well, it also allows them to actually configure the controller at the same time; right? 13:57:43 13:57:45 13:57:48

A. I guess they could, but that's not what the claim is saying. 13:57:48 13:57:50

Q. Well, let's go to claim 23 again. 13:57:52

MS. DURIE: If you can put up slide 53. 13:57:55 13:57:59

BY MS. DURIE: 13:58:04

Q. We have a shared USB device block operable to be simultaneously configured by two or more USB hosts; right? 13:58:04 13:58:06 13:58:10

A. Correct. 13:58:13

Q. Okay. 13:58:13

Now, let's go back to Figure 3, slide 54. In the context of Figure 3, there 13:58:14 13:58:23

is no need to hold off one host's attempt to configure the device while the other host is configuring the device; right? 13:58:31 13:58:35 13:58:38

A. Correct. It would be possible -- I mean, since the multi-controller handles simultaneous accesses and responses, in theory, if you happen to plug in both hosts at the exact same time, they could theoretically configure the device at the same time. 13:58:44 13:58:46 13:58:49 13:58:52 13:58:55 13:59:00

Q. Right. 13:59:01

A. But that's not the meaning of that claim number. 13:59:02 13:59:04

Q. I understand that's your opinion, but with respect to Figure 3, that is a system that allowed for simultaneous configuration in the sense that both hosts can use their independent channels to configure the controller at the same time. That could happen in that system? 13:59:05 13:59:07 13:59:10 13:59:14 13:59:17 13:59:20 13:59:23

A. Again, I didn't analyze that because that's not what the claim element means. 13:59:25 13:59:27

Q. Well, again, just this system, looking at it, right, both hosts could configure that controller and send signals 13:59:29 13:59:33 13:59:36

down to configure that controller at the same time simultaneously? 13:59:40 13:59:42

A. According to which claim, though? 13:59:46

Q. Figure 3. 13:59:47

A. Figure 3 by itself doesn't say anything about simultaneous in it. 13:59:49 13:59:51

Q. The system that is depicted in Figure 3. 13:59:54 13:59:57

A. Right. 13:59:57

Q. That is a system that allows both hosts to simultaneously send signals to configure the multi-host device controller? 13:59:57 14:00:00 14:00:05

A. The description of claim 3 is dependent on -- the description of Figure 3 is dependent on what functions the claims ascribe to that Figure 3. 14:00:08 14:00:10 14:00:12 14:00:18

Q. Okay. 14:00:19

Can you answer whether the system that is depicted in Figure 3 would permit both hosts simultaneously to send signals to configure at the same time? 14:00:19 14:00:23 14:00:27 14:00:34

A. Again, there is no claim that requires that. 14:00:37 14:00:39

Q. I am not asking about claims; I am 14:00:41

asking about that system. 14:00:44

Can you tell, from looking at 14:00:45

Figure 3, whether that system would permit 14:00:48

both hosts to send a signal at the same time 14:00:52

to engage in integration? 14:00:58

A. I could do a hypothetical, but it 14:01:02

wouldn't have any meaning what opinion I 14:01:04

provided on the hypothetical. The only thing 14:01:06

that the -- is defined by the invention is 14:01:08

what's in the claims, and there's no -- in the 14:01:12

specification of the claim that says they have 14:01:16

to be plugged in simultaneously and configured 14:01:18

simultaneously. 14:01:20

The claim in 23, for example, says 14:01:20

once they are configured, they have to 14:01:24

simultaneously remain configured throughout 14:01:26

the duration, simultaneously. 14:01:29

Q. Let's go back to claim 23, slide 38. 14:01:32

"A shared USB device block operable." 14:01:38

Now, operable means capable of 14:01:42

being in this context; right? 14:01:45

A. Right. 14:01:46

Q. Operable to be simultaneously 14:01:47

configured? 14:01:49

A. Correct. 14:01:51

Q. So can you tell me whether the system that is shown there in Figure 3 is one in which the shared USB device block at the bottom could be, not necessarily would be, but it could be simultaneously configured in the sense of having signals sent down to configure it at the same time? 14:01:51 14:01:54 14:01:57 14:02:00 14:02:05 14:02:08 14:02:11

A. Yes. Reading from the claim language, the simultaneous configure, past tense, meaning once the devices are configured, they are operable to simultaneously maintain that. In other words, once they are connected, they stay connected for the duration. In other words, one doesn't go away and come back; they stay connected for all operations. 14:02:13 14:02:16 14:02:18 14:02:21 14:02:23 14:02:26 14:02:28 14:02:31 14:02:34

Q. Okay. 14:02:35

Now, you are saying that because in the Aptiv system, it is not possible for both hosts to become configured at the same time; right -- strike that, strike that. Let me ask that again. That was terrible. 14:02:36 14:02:39 14:02:47 14:02:51 14:02:55

In the Aptiv system, it is not 14:02:56

possible for both hosts to engage in the act of configuring their respective devices at the same time? 14:02:59 14:03:04 14:03:07

A. No, I am saying that because your interpretation of that claim element would not be what one in the industry would consider, because again, your interpretation says that I have two separate hosts that want to access the same device. In order to do that, somehow a person would have to plug in simultaneously to the microsecond at the same time and have both hosts configure that device in enumeration. That would actually basically eliminate the necessity of any of the other claims because that would never occur. 14:03:09 14:03:12 14:03:14 14:03:17 14:03:21 14:03:23 14:03:26 14:03:30 14:03:32 14:03:37 14:03:39 14:03:42

Q. So I just -- I don't want to argue with you, Mr. Zatkovich, but I do want to be clear. 14:03:43 14:03:46 14:03:48

The system that we are looking at here in Figure 3 is operable, right? It is a USB device block that is operable to be configured simultaneously at the same time by those hosts sending signals at the same time because there are two different channels on 14:03:48 14:03:51 14:03:55 14:04:00 14:04:06 14:04:08

which that can happen at the same time. It is operable for that function. 14:04:11 14:04:14

You don't disagree with that, do you? 14:04:17 14:04:20

A. I am disagreeing with your characterization of that claim element. 14:04:20 14:04:21

Q. I am asking you about -- 14:04:24

A. I understand the description; I am disagreeing with your characterization of the claim element. 14:04:25 14:04:28 14:04:31

Q. You are not disagreeing with my description of claim 23. It is operable, Figure 3 is operable for that purpose? 14:04:32 14:04:34 14:04:37

A. It's operable that once they are configured, past tense, to maintain those simultaneously throughout the operation. 14:04:41 14:04:43 14:04:46

Q. Sir, please listen to my question. 14:04:48

Do you agree that the system that is shown here in Figure 3 is operable to allow the shared device to become configured at the same time by both hosts? 14:04:50 14:04:54 14:05:01 14:05:07

A. No, I do not agree with that. 14:05:11

Q. So you think in Figure 3, even though there are two separate concurrent respective 14:05:13 14:05:16

dedicated USB connections between the shared USB device block and the two or more USB hosts, it would be impossible for both hosts to be able to send configuration information at the same time? 14:05:21 14:05:25 14:05:30 14:05:35 14:05:39

A. I cannot think of a single scenario where two hosts would get together knowing that they are connecting to an independent device and say, by the way, we want to connect to this same device, let's get together and do it at the same time. 14:05:40 14:05:42 14:05:45 14:05:49 14:05:51 14:05:53

Q. So is it your opinion that the system shown in Figure 3 -- strike that. 14:05:55 14:05:57

Is it your opinion that with respect to the system shown in Figure 3, it would be impossible for both hosts to be able to send configuration information at the same time? 14:06:00 14:06:01 14:06:05 14:06:09 14:06:11

A. I suppose I could construct a difficult arbitrary scenario where we synchronized the host in some scenario. I suppose I could contrive of something. But again -- 14:06:12 14:06:16 14:06:19 14:06:23 14:06:26

Q. Okay. 14:06:26

A. -- that's not the intent of the claim. 14:06:26 14:06:28

Q. Right. 14:06:28

So you would agree that the system in Figure 3, even if you think it's unlikely to happen, is operable to be able to have the shared device function, receive information from both hosts at the same time? 14:06:28 14:06:30 14:06:33 14:06:38 14:06:43

A. That's not what it says there. 14:06:46

Q. I'm not asking you what it says in claim 23. I understand you and I disagree with that. I am asking you about Figure 3. Okay? Let's keep that in mind. 14:06:50 14:06:52 14:06:55 14:06:57

You agree that the system shown in Figure 3 allows for the shared device function to receive configuration information from both hosts at the same time? 14:06:59 14:07:01 14:07:05 14:07:09

A. I don't think that's what the patent describes. 14:07:16 14:07:18

Q. Do you think that that is possible by the system shown in Figure 3? 14:07:19 14:07:23

A. Is it possible for a device described by the patent to do something that the patent doesn't describe? Again, this would be purely 14:07:25 14:07:27 14:07:31

hypothetical. 14:07:35

Q. Okay. 14:07:39

Let's take a look at slide 55. 14:07:39

This is the Aptiv device; right? 14:07:47

A. That's correct. 14:07:52

Q. Okay. 14:07:52

And just to be clear, this is a 14:07:53

figure from your report with annotations on it 14:07:55

explaining the flow of what happens with 14:07:58

respect to enumeration and configuration; 14:08:03

right? 14:08:05

A. That's correct. 14:08:05

Q. And to be clear, what happens is that 14:08:08

the head unit engages in the act of 14:08:10

configuring its device first; right? 14:08:13

A. Yes. When you start up the car, the 14:08:17

head unit would power up first and then 14:08:19

configure its side of the device. 14:08:22

Q. That's No. 3 up there; right, in your 14:08:24

notes? 14:08:32

A. Let me review it. 14:08:34

Q. Right? Head unit host enumerates and 14:08:40

configuration; right, 1, 2, 3? 14:08:43

A. Correct. 14:08:46

Q. Okay. 14:08:47

And at the bottom right, iPhone host enumerates and configuration, 4; right? 14:08:48 14:08:50

4 happens any time after 3; right? 14:08:54

A. Correct. 14:08:57

Q. Correct? 14:08:59

A. That's correct. 14:09:00

Q. Okay. 14:09:00

In the Aptiv system, it is not possible for both hosts to send configuration information to their respective devices at the same time; right? 14:09:01 14:09:04 14:09:09 14:09:12

A. It may be possible. Again, I didn't analyze that. The way we have it structured here, the way it's defined for a particular car presentation, I would say no. 14:09:21 14:09:23 14:09:27 14:09:30

Q. Okay. 14:09:33

And that's because the iPhone initially connects to the device; right? 14:09:34 14:09:37

A. The end unit initially connects to the device. 14:09:40 14:09:43

Q. The iPhone initially connects to the device; no? 14:09:43 14:09:45

A. No. When the car powers up, the head 14:09:49

phone -- the head unit connects to the device first. 14:09:52 14:09:54

Q. Why don't you pull out your reply report. I marked it for identification. Do you have it in front of you? Do you have your reply report in front of you? 14:09:55 14:09:57 14:10:01 14:10:09

A. Yes, I do. 14:10:11

Q. Great. Can you get that? Please turn to paragraph 68. 14:10:12 14:10:24

A. Paragraph 58? 14:10:26

Q. 68. 14:10:27

A. 68. 14:10:28

Q. 6-8. Are you with me? 14:10:29

A. Got it. 14:10:31

Q. Reading from your report, starting at the second line of paragraph 68, "The dual role hub contains an EP Bridge and other logic that provides the functions necessary to implement CarPlay which is much more complex than a simple host-to-host bridge. For example, the CarPlay specification requires the dual role hub to allow the iPhone to connect as a device, and then role reverse so the iPhone is connected as a host." 14:10:32 14:10:35 14:10:38 14:10:41 14:10:43 14:10:46 14:10:49 14:10:52 14:10:55 14:10:59

Do you see you wrote that in your report? 14:11:01 14:11:03

A. I do. 14:11:03

Q. Okay. 14:11:04

So first the car head unit connects as a host and configures its device; right? 14:11:04 14:11:09 14:11:11

A. Correct. 14:11:12

Q. And then the iPhone connects initially as a device; right? 14:11:12 14:11:14

A. Correct. 14:11:16

Q. Then it role reverses; right? 14:11:17

A. Right. 14:11:21

Q. Then it connects as a host; right? And then it configures the device; right? 14:11:21 14:11:23

A. Correct. 14:11:25

Q. And in order to do all of that, you need software on the head unit to set up the bridge; right? 14:11:26 14:11:29 14:11:31

A. That's correct. 14:11:32

Q. And the configuration data for the bridge is stored in the head unit; right? 14:11:32 14:11:34

A. That's correct. 14:11:36

Q. And the iPhone can't use the bridge 14:11:37

until the bridge is all set up; right? 14:11:40

A. Yes, that's accurate. 14:11:43

Q. And the iPhone needs the bridge to be set up to do role reversal in being a host and to be able to configure its device; right? 14:11:44 14:11:47 14:11:50

A. Yes, that's accurate. 14:11:54

MS. DURIE: I have no further questions. 14:11:56 14:11:57

- - - 14:12:11

REDIRECT EXAMINATION 14:12:11

- - - 14:12:13

BY MR. FENTON: 14:12:13

Q. Mr. Zatkovich, do you remember when Ms. Durie asked some questions about your claim chart for claim 23? 14:12:15 14:12:18 14:12:21

A. I do. 14:12:22

Q. And you answered that a NAK and a ping response were standard USB. 14:12:23 14:12:25

Do you remember that? 14:12:27

A. Correct. If you are a single device with a single controller, yes. 14:12:27 14:12:30

Q. So would a standard USB device be able to respond to a NAK or a ping to two different hosts? 14:12:31 14:12:34 14:12:37

A. No.

MR. FENTON: No further questions.

THE COURT: Okay. Mr. Zatkovich, you can step down.

THE WITNESS: Thank you, Your Honor.

THE COURT: Take your things you have with you and hand them off to counsel, if you would.

THE WITNESS: Thank you.

(Whereupon, the witness was excused.)

MR. GRAY: Yes, Your Honor. At this point, Microchip calls Dr. Stephen Becker.

THE COURT: Okay.

THE COURT CLERK: Please state and spell your name for the record.

THE WITNESS: It's Stephen Lewis Becker. That's S-T-E-P-H-E-N and Lewis is L-E-W-I-S.

- - -

...DR. STEPHEN L. BECKER, after having been duly sworn and/or affirmed, was

examined and testified as follows...

- - -

DIRECT EXAMINATION

- - -

BY MR. GRAY:

Q. Please introduce yourself to the jury.

A. My name is Stephen Becker. I live in Austin, Texas.

Q. What is your role in this proceeding?

A. So I am here as Microchip's damages expert.

Q. And have you prepared some slides to assist with your testimony here today?

A. I have.

Q. Can you please tell us about your educational background.

A. Sure. I have a bachelor's degree in computer science and electrical engineering from University of Pennsylvania, just up the road in Philadelphia. I spent the first four years of my college life in this neck of the woods.

I then, after working in industry

for a while, went to the University of Texas at Austin and got a master's in business administration, with a concentration in finance. 14:15:29 14:15:32 14:15:35 14:15:38

Then went out and worked for about six years in the industry again, and then came back to the University of Texas and got a Ph.D. in public policy, with a concentration in the field called econometrics. 14:15:39 14:15:42 14:15:45 14:15:47 14:15:50

Q. Sorry, in the field called what? 14:15:53

A. Econometrics. 14:15:55

Q. Could you explain a little bit about what that means? 14:15:57 14:15:59

A. So econometrics is, instead of sort of going out and trying to invent new fields or new theories in economics, kind of the econometrician takes the existing toolkit of economics and statistics and financial analysis and sort of combines those to answer real world problems. 14:16:00 14:16:05 14:16:08 14:16:12 14:16:14 14:16:17 14:16:22

Q. And where do you currently work? 14:16:22

A. I work at a firm in Austin called Applied Economics. This is a firm that I founded about 23 years ago. 14:16:24 14:16:26 14:16:30

Q. Have you worked as an expert on patent cases involving the automotive industry, in fact? 14:16:34 14:16:36 14:16:39

A. I have. I have been working as an economic expert on sort of economic valuation issues for 25 years, since before I formed Applied Economics, and over the course of that time, I have been a -- retained as a damages expert on about a dozen automotive industry patent cases. And I've -- I think I have been deposed seven or eight times, or in seven or eight different cases involving that, and I've testified at trial three times in patent cases involving automotive technology. 14:16:42 14:16:44 14:16:46 14:16:52 14:16:54 14:16:59 14:17:03 14:17:07 14:17:10 14:17:13 14:17:18

Q. About how many times have you testified all together on patent damages in a patent case? 14:17:20 14:17:21 14:17:25

A. About 30 times. 14:17:26

Q. Is it common for experts like yourself to have testified in this role previously? 14:17:27 14:17:30 14:17:32

A. Yes. Yes. Most of the colleagues that I know in the industry, who have been at it as long as I have, have testified quite a 14:17:32 14:17:36 14:17:38

few times. 14:17:41

Q. Do you often see the same experts 14:17:41

across from you in cases? 14:17:44

A. Yes. It's not uncommon. Some people 14:17:45

that I encounter, I have known them for 14:17:48

25 years. 14:17:51

Q. Have you ever been opposite of Mr. 14:17:51

Michael Chase, Aptiv's damages expert in this 14:17:53

case? 14:17:56

A. You know, I don't recall whether I 14:17:57

have encountered him before or not. 14:17:58

Q. In your work as an expert in patent 14:18:02

cases, have you testified on behalf of both 14:18:04

patentholders and defendants? 14:18:06

A. Yes. I have what I think is a pretty 14:18:08

good balance there. Every time I sit down and 14:18:12

count up the cases over the years, it seems 14:18:15

like it comes out to about 50/50 for working 14:18:17

for patentholders or for accused infringers. 14:18:20

Q. Are you being compensated for your 14:18:25

work in this case? 14:18:27

A. I am. 14:18:28

Q. And does your compensation depend on 14:18:28

the outcome in any way? 14:18:30

A. No, it does not. 14:18:32

MR. GRAY: At this point, we 14:18:33

tender Dr. Becker as an expert on patent 14:18:34

infringement damages. 14:18:37

MR. WIENER: No objection, Your 14:18:40

Honor. 14:18:41

THE COURT: Proceed. 14:18:41

BY MR. GRAY: 14:18:43

Q. Let's turn to the work you did in 14:18:43

this case. Explain to the jury what your 14:18:45

assignment was. 14:18:47

A. The assignment can be defined pretty 14:18:48

simply, to quantify Microchip's damages that 14:18:51

result from Aptiv's infringement of the '243 14:18:53

Patent. 14:18:57

Q. And have you made any assumptions 14:18:57

about infringement in this case for the 14:18:58

purposes of your work? 14:19:00

A. I have. For my work, and any patent 14:19:01

damages expert has to make the assumption that 14:19:04

the patent is infringed. That sort of makes 14:19:07

my testimony relevant. I am not expressing an 14:19:11

opinion that it is infringed, but you'll hear 14:19:14

me talk about the infringement because I have 14:19:16

to assume that that has occurred. 14:19:18

Q. And what about for the issue of 14:19:21

validity; have you made any assumptions on 14:19:24

that issue? 14:19:25

A. Similar assumptions for my testimony; 14:19:26

I must assume that the patent is valid, it is 14:19:29

not a question for me to answer, and I simply 14:19:32

have assumed it for my work. 14:19:34

Q. Before we get into the details of 14:19:36

your work in this case, can you please give 14:19:37

the jury a summary of the opinions that we're 14:19:39

going to discuss today? 14:19:41

A. Sure. My opinions fall into two 14:19:42

different categories that we'll talk about 14:19:47

today. First I have an opinion that Microchip 14:19:50

has suffered what we call Lost Profits; that 14:19:53

there are sales that Microchip would have made 14:19:58

if Aptiv's infringement had not occurred. And 14:20:00

that category of damages is 35.2 million units 14:20:04

of chips that my analysis indicates Microchip 14:20:09

would have earned $70.9 million in profit on 14:20:14

those sales. So that's the first category of 14:20:18

damages, the 70.9 million of what we call lost 14:20:22

profits. 14:20:26

I have a second category called a Reasonable Royalty that we'll get into this later, but not all of the units that Aptiv sold, in my opinion, should be compensated as lost profits, and for the 9.7 million units that fall into the reasonable royalty bucket, the damages are $13.6 million. 14:20:27 14:20:31 14:20:35 14:20:37 14:20:40 14:20:46 14:20:50

If we -- and in total, those total 84.4 million. 14:20:57 14:21:01

Q. Okay. 14:21:02

And what types of information did you consider in reaching your opinions in this case? 14:21:03 14:21:05 14:21:07

A. So in this case, like most cases that I work on, the parties produce lots of documents and data. For my work, I rely a lot on financial data that Aptiv produced, financial data that Microchip produced; lots of depositions get taken. My staff and I reviewed those. 14:21:07 14:21:10 14:21:13 14:21:18 14:21:21 14:21:24 14:21:27

We also do research to sort of publicly available information on the technology at issue and the market that these products go into. 14:21:28 14:21:32 14:21:36 14:21:38

And then there is some specific things that I am relying on Mr. Zatkovich for for his technical opinions, and also on my interviews with Microchip executives like Mr. Obolsky. 14:21:40 14:21:43 14:21:47 14:21:50 14:21:53

Q. Do damages experts typically rely on these types of information? 14:21:56 14:21:58

A. Yes. This is a typical category, but obviously not these specific individuals. 14:21:59 14:22:03

Q. Okay. 14:22:07

In your summary slide, you indicated you had a lost profits opinion and a reasonable royalty opinion. Let's talk about the lost profits opinion first. 14:22:08 14:22:10 14:22:12 14:22:14

A. Okay. 14:22:15

Q. Can you please explain to the jury what you mean by lost profits? 14:22:15 14:22:18

A. So what I've got on the screen here is a quote from a case that sort of sets forth the test for lost profits. It's called the Panduit test. This is a case in 1978. 14:22:20 14:22:22 14:22:25 14:22:28

And what it says is that -- I'll sort of paraphrase. If the plaintiff, Microchip in this case, can demonstrate that 14:22:33 14:22:35 14:22:38

there are sales that reasonably would have been made if Aptiv had not infringed, so take their infringing product off the market, if that product going away means that Microchip would have made some additional sales, any additional sales, then for those sales, they may be entitled to lost profits on those sales. 14:22:42 14:22:44 14:22:47 14:22:52 14:22:54 14:22:55 14:22:59 14:23:02

Q. When you say, "but for infringement," or when this case uses that phrase, "but for alleged infringement," what does that mean? 14:23:07 14:23:09 14:23:12

A. So we know that Aptiv actively launched and sold the dual role hub product that's accused in this case. That began in 2015 and sales are occurring right through today. 14:23:14 14:23:19 14:23:23 14:23:26 14:23:30

I have to imagine a world where that didn't happen. So 2015 comes along, Unwired never launches that product, Aptiv never launches that product, it's never sold to anybody. 14:23:30 14:23:32 14:23:38 14:23:41 14:23:43

I need to look, from an economic perspective, what would the world look like, and in particular, what would Microchip's 14:23:44 14:23:46 14:23:49

sales have been of any of their products if that Aptiv and Unwired product had never been sold. 14:23:53 14:23:56 14:23:58

Q. When you say, "sales of their products," do you mean sales of products incorporating their chip? 14:23:59 14:24:00 14:24:03

A. Their -- well, when I'm talking about Aptiv and Unwired, it's sales of hubs that had the Boston chip in it, that do this dual role multi-host control function. 14:24:05 14:24:08 14:24:12 14:24:17

Q. So in other words, the -- if the Boston chip hadn't been sold, what chip would have been used instead; is that a fair way to summarize part of the analysis? 14:24:18 14:24:21 14:24:24 14:24:27

A. Well, it's on reconstructing the market. So we have to take the Boston chip out of the market. The OEMs still need hubs, Aptiv can still sell a hub. The question is what chip is going to go in that hub, and it can't be the infringing Boston chip. 14:24:29 14:24:31 14:24:33 14:24:39 14:24:42 14:24:45

So that's what I'm trying to figure out, is, in the absence of the Boston chip being put into the Aptiv hubs and sold, what would the world look like. 14:24:48 14:24:49 14:24:51 14:24:56

Q. So what did this Panduit case tell us about how we determined or how you determined whether Microchip has lost any lost profit damages? 14:24:58 14:25:01 14:25:03 14:25:07

A. So the good news for me as a damages expert is that I sort of have a checklist from this case. I just don't have to, sort of, every time reinvent the wheel about how to figure this out. 14:25:07 14:25:10 14:25:12 14:25:14 14:25:16

We call these the Panduit factors. They are four things that I step through and they get us, sort of, successively closer to a conclusion that there have been some lost profits. 14:25:17 14:25:20 14:25:22 14:25:26 14:25:28

The first factor is whether there is any demand for the patented product. Obviously if nobody was buying the thing that was being fought about in the patent case, there wouldn't be any lost profits because nobody is buying it anyway. So that one just says is there any commerce in that particular product or a product that uses the patented thing. 14:25:29 14:25:32 14:25:37 14:25:40 14:25:42 14:25:44 14:25:48 14:25:51 14:25:54

The second is a little bit of a 14:25:55

mouthful, but it's absence of acceptable non-infringing substitutes, and really what I'm looking at here is if Aptiv has to stop using the Boston chip, is there a non-infringing thing that they could do. Could they modify that chip in some way to essentially replicate the features that their customers wanted, but do it in a non-infringing way. 14:25:58 14:26:00 14:26:03 14:26:07 14:26:11 14:26:15 14:26:18 14:26:20 14:26:23

If that's the case, then they might have, in this but-for world, changed the chip so they could offer the same features without infringing, and they would have kept those sales and Microchip wouldn't have lost the sales. So I look at this question about is there something that could be a interchangeable substitute for the product at issue. 14:26:25 14:26:27 14:26:30 14:26:32 14:26:35 14:26:37 14:26:40 14:26:43 14:26:46

Once I've determined those first two things, if we get past those two first gates, I really have concluded that Microchip did lose some sales. 14:26:48 14:26:50 14:26:53 14:26:56

The third step is to say, all right, the market is telling us that there 14:26:58 14:27:00

would have been more demand for Microchip's chips, did they have a capacity to make these extra sales? Was there enough manufacturing capacity to make those sales? 14:27:02 14:27:05 14:27:10 14:27:13

The last is if the answer to three is yes and you have the capacity, then the question is would there have been a profit on those sales. You can imagine a world where somebody loses sales, they would have made the sales but it was a money-losing product, no profit on the units that were sold. So we wouldn't have lost profits even if we had lost sales. 14:27:15 14:27:18 14:27:21 14:27:25 14:27:27 14:27:29 14:27:32 14:27:35 14:27:38

So we're really kind of getting down to that last step, which is if there are lost sales that Microchip could have made and it had the capacity to make them, would there have been a profit on that that I can actually estimate. 14:27:39 14:27:40 14:27:43 14:27:45 14:27:47 14:27:49

Q. And did you consider each of these four factors in your analysis in this case? 14:27:50 14:27:52

A. I did. 14:27:55

Q. Okay. 14:27:57

So turning to the first factor, 14:27:57

what did you do to determine whether there was demand for the patented product? 14:28:00 14:28:02

A. So here, I looked out in the marketplace first at Microchip's product line and said, is there a product that they sell that practices the patent? And I also looked at the same thing for Aptiv; is there a product that is at least accused of having the patent in it? And I have to assume that it does. So we just look at some sales data for both companies. 14:28:05 14:28:08 14:28:10 14:28:13 14:28:18 14:28:19 14:28:23 14:28:25 14:28:28

The first place I looked is at the Microchip product line, if we go to the next slide. I think we've heard about that, so far in this case, there are two models of the USB high speed multi-host controller that Microchip sells, the USB4916 and the USB4914. 14:28:30 14:28:32 14:28:36 14:28:39 14:28:43 14:28:47

The sales data that my staff and I analyzed, and if we click ahead, the units, sold units from that of June of 2017 through September of 2021 total just under 8.4 million units. So clearly, there is demand for Microchip's patented product. 14:28:54 14:28:56 14:29:04 14:29:06 14:29:11 14:29:13

Q. And is the data -- this data, the 14:29:18

8.4 million units, is that from Exhibit 50? 14:29:20

A. It is. 14:29:23

Q. And you said a second ago, you referenced the 4916 and 4914 products. Do you understand that that's the Sandia chip? 14:29:25 14:29:27 14:29:31

A. Yes, that's what -- we'll see that in some of the other documents, but the shorthand or the name of that product is the Sandia product. 14:29:32 14:29:36 14:29:38 14:29:41

Q. Okay. 14:29:41

Did you look at anything else? 14:29:41

A. So I looked at Aptiv's world, and based on what's accused of being the patent-practicing product, that I have to assume is practicing the '243 Patent, is Aptiv's multi-host product. It's the Boston 2 chip that is used within the dual role hub that Delphi first and now Aptiv sells to the OEMs, mostly to The Big 3 OEMs here in the U.S. 14:29:44 14:29:48 14:29:53 14:29:56 14:29:59 14:30:02 14:30:06 14:30:11 14:30:15

Q. Let's pause there for a second before we click forward. 14:30:16 14:30:17

MR. GRAY: At this point, we offer Exhibit 182 into evidence. 14:30:26 14:30:28

THE COURT: No objection? 14:30:29
MR. WIENER: No. 14:30:30
THE COURT: All right. It will be 14:30:31
received. 14:30:33
MR. GRAY: We'd also like to offer 14:30:40
Exhibits 18 and 125 into evidence. 14:30:42
MR. WIENER: No objection. 14:30:44
THE COURT: Okay. They'll come 14:30:45
in. 14:30:49
MR. GRAY: Okay. We can move 14:30:49
forward. 14:30:51
THE WITNESS: All right. If you 14:30:51
click ahead, here I've got data on the prior 14:30:52
slide. The data for Microchip went through 14:30:56
September of 2021, just, you know, everybody 14:30:59
has to -- at some point, you declare a stop on 14:31:02
the data, and that's what I have to work with. 14:31:05
For Microchip, that data went 14:31:08
through September; for Aptiv, we have data 14:31:09
through November of 2021. And the sales of 14:31:13
the Aptiv multi-host products that are accused 14:31:17
in this case are 44.9 million units. 14:31:20
BY MR. GRAY: 14:31:25
Q. And I see on your slide, this is from 14:31:25

Exhibit 182; is that accurate? 14:31:27

A. Yes. 14:31:29

MR. GRAY: And can we pull 14:31:32
Exhibit 182 up and just look at the total of 14:31:34
the bottom right of the spreadsheet. 14:31:36

BY MR. GRAY: 14:31:38

Q. And my question is going to be, why 14:31:38
doesn't your number reflect the same number in 14:31:39
the spreadsheet from the financial data that 14:31:43
Aptiv provided? Your number is lower. 14:31:45

A. So can you go all the way over and 14:31:50
can you zoom in on that and blow it up? Okay. 14:31:52
46 million 300. Yes, the data that Aptiv 14:32:03
produced, which at least I understood was to 14:32:07
be data that was sales of the different models 14:32:12
that they have that practice -- they are 14:32:15
accused of infringement here. 14:32:18

It turns out there are just like 14:32:21
two or three out of hundreds and hundreds of 14:32:23
line items on there that are for products 14:32:25
that, on a prior production, some time ago, 14:32:28
Aptiv produced some data that said this model 14:32:32
is not used for CarPlay. I think it's one of 14:32:36
them goes in the back seat of a particular car 14:32:40

model, so it's not used for CarPlay, or it's not CarPlay capable the way it's built into the hub. 14:32:42 14:32:45 14:32:48

And so we went through and pulled those just couple of -- I think there's three part numbers that got pulled out in order to be -- make sure that I was trying to limit this just to the accused products that were CarPlay capable. 14:32:49 14:32:53 14:32:56 14:32:58 14:33:00 14:33:03

Q. Thank you. 14:33:04

And what did you conclude from this evidence of about 45 million sales by Aptiv? 14:33:06 14:33:09 14:33:12

A. So seeing that Aptiv had lots of sales of patent-practicing product, Microchip had sales of patent product, there's clearly demand for the patent product so we clearly put a checkmark on that one. 14:33:13 14:33:16 14:33:20 14:33:23 14:33:27

Q. What's the next factor? 14:33:28

A. So the next factor is whether there are any acceptable non-infringing substitutes, where essentially I am asking the question, is there a way to provide the features that the customers who bought Aptiv's product were 14:33:30 14:33:32 14:33:35 14:33:38 14:33:40

demanding, could they have provided that feature set in a way that didn't infringe? 14:33:44 14:33:48

And I did a number of things to answer that question. 14:33:51 14:33:54

Q. Okay. 14:33:56

So what did you do to determine whether there were any acceptable non-infringing substitutes? 14:33:57 14:33:58 14:34:01

A. So the first thing I did was talk to Microchip's technical expert, Mr. Zatkovich, because essentially at one level -- this is a very technical question -- is there a way to provide the features that are enabled by the patent and that are the key features in these accused products, and in the Sandia product, which are the single-lane CarPlay on the -- any downstream port with the persistent USB. 14:34:03 14:34:06 14:34:11 14:34:13 14:34:16 14:34:18 14:34:21 14:34:25 14:34:30

And we've heard a lot about that, single-lane persistent USB with CarPlay on any port. Is there a way to do that without using the patent? 14:34:34 14:34:36 14:34:39 14:34:44

What Mr. Zatkovich told me is no. So from a technical standpoint, there are no available non-infringing substitutes that 14:34:45 14:34:48 14:34:52

would provide a substitute product that met all of the characteristics. 14:34:54 14:34:56

Q. Did you rely on anything other than Mr. Zatkovich? 14:34:59 14:35:00

A. I did. I also went and looked at market evidence. I wanted to see, you know, what is the market telling me about are there a bunch of companies out there offering chips or using chips that do single-lane persistent USB, CarPlay on all the downstream ports? Because the market can tell me that, too, since there's clearly demand for this product. 14:35:01 14:35:04 14:35:06 14:35:11 14:35:14 14:35:18 14:35:23 14:35:25

And what I found is that, at least out in the marketplace, there seemed to be only two options; one is the Microchip multi-host Sandia chip and the second is Aptiv's multi-host chip that's in the dual role hub. 14:35:28 14:35:30 14:35:33 14:35:36 14:35:40 14:35:44

So again, I am getting confirmation of Mr. Zatkovich's technical opinion when I look out in the marketplace, and here, these products have been out there for I think six, seven years, and we seem to have only two companies that are selling to 14:35:45 14:35:46 14:35:49 14:35:53 14:35:55 14:35:59

the U.S. OEMs to meet that need for single-lane persistent USB CarPlay. 14:36:02 14:36:05

Q. Is another way to say that that Microchip and Aptiv are the only two companies on the market offering a multi-host solution? 14:36:08 14:36:11 14:36:13

A. Yes. It's -- essentially for that feature set, it is a two-supplier marketplace. 14:36:16 14:36:19

MR. GRAY: Mr. Ferrer, could you please pull up Exhibit 25. 14:36:23 14:36:25

BY MR. GRAY. 14:36:28

Q. Dr. Becker, when this appears, is this a document that you relied on in forming your opinions in this case? 14:36:29 14:36:32 14:36:34

A. It is. 14:36:35

Q. Can you remind the jury what this document is? 14:36:35 14:36:37

A. So this is the document I think that's been used before. This is the Product Business Plan for Sandia from initially, I think, sort of July/August of 2015. This is a document where Microchip is sort of laying out its market strategy, technical and market strategy for the Sandia product. 14:36:38 14:36:39 14:36:42 14:36:47 14:36:51 14:36:55 14:37:00

Q. Was there anything you found in this 14:37:01

document that was relevant to your analysis of who was in the market with a multi-host controller product? 14:37:03 14:37:05 14:37:07

A. Yes. There is actually a section of this business plan, not surprisingly if you are doing business planning, that there is a whole section on competition. And for this question on Panduit, I looked to the competition section of this document. 14:37:08 14:37:10 14:37:13 14:37:15 14:37:19 14:37:23

MR. GRAY: Okay. Mr. Ferrer, can we please turn to page 18. 14:37:27 14:37:28

BY MR. GRAY: 14:37:30

Q. Dr. Becker, what does this section of the Sandia Business Plan discuss? 14:37:31 14:37:35

A. So this section, 5.4 of the document, discusses competition. And you can see the very first company that's listed there is Delphi. We can pull up what they have to say about Delphi. This has all been talked about quite a bit. 14:37:36 14:37:38 14:37:41 14:37:44 14:37:48 14:37:53

Delphi Automotive, through the acquisition of Unwired, has a multi-host ASIC solution, so that's the Boston chip, that they are currently providing to the market, and it 14:37:54 14:37:55 14:37:59 14:38:02

has been designed in the GM, Ford and Chrysler. This chip represents a sole source, point solution for a silicon USB chip. 14:38:05 14:38:09 14:38:12

So this, at least with respect to the first competitor that you are talking about, they are saying other than themselves, obviously this business plan is about launching their multi-host chip. They're saying Delphi is in the market with a multi-host chip that is already in The Big 3 at GM, Ford and Chrysler. 14:38:15 14:38:19 14:38:21 14:38:23 14:38:25 14:38:28 14:38:30 14:38:34

Q. And if we go back to the full page, and I see that there are some other companies listed on page 18 that we are looking at, and then also on page 19. 14:38:37 14:38:39 14:38:41 14:38:44

Did you review what this business plan talks about with these competitors? 14:38:46 14:38:48

A. Yes. So the plan touched on a couple of other chipmakers, and the conclusion with respect to TI, Cypress, Renesas, NXP is they don't have a product and they weren't really expected to be able to come out with a product that had a multi-host controller in it. 14:38:50 14:38:53 14:39:01 14:39:05 14:39:08 14:39:10

Q. So why was that important to your 14:39:12

opinion? 14:39:14

A. Well, it ends up -- when we get to the next step in the analysis, it is going to be even more important, but with respect to the question about whether there are alternatives to meet this demand for single-lane persistent USB CarPlay, from an economic standpoint, it's significant that there are only two players in the market. It tells me that this is something that is not sort of widely -- not everybody is doing it. It is a unique solution. 14:39:14 14:39:19 14:39:21 14:39:23 14:39:24 14:39:29 14:39:32 14:39:35 14:39:38 14:39:40 14:39:44

Q. So what did you conclude from that evidence? 14:39:50 14:39:52

A. So I concluded from this evidence that Panduit factor 2 is met, if we go back to the Panduit factor list. I concluded that there is an absence of acceptable non-infringing alternatives. It is a double negative, but we can check the box. 14:39:52 14:39:54 14:39:58 14:40:03 14:40:06 14:40:09

Q. Okay. Thank you. 14:40:10

What is the next factor? 14:40:11

A. So the next factor is I need to look at whether Microchip has the capacity to make 14:40:13 14:40:16

these extra sales. 14:40:18

Q. What did you do to assess whether 14:40:23

Microchip had sufficient capacity to make 14:40:25

these extra sales? 14:40:27

A. So the first step in figuring out 14:40:28

whether they have the capacity is to figure 14:40:30

out how many chips we're talking about. I 14:40:33

can't answer the question if it was can you 14:40:35

make 10 more chips or is it 100 or is it a 14:40:38

million. I need to calibrate the magnitude of 14:40:42

the increase. 14:40:45

And so what I've got here is the 14:40:46

sales data for this 44.9 million chips. I 14:40:48

think it is the same data that we looked at 14:40:54

before that was just summarized. Here I've 14:40:56

got it laid out by year, because this sort of 14:40:59

annual volume is what's going to be important. 14:41:01

Q. Okay. 14:41:04

So what is the total volume of 14:41:04

infringing sales? 14:41:06

A. So here, instead of taking all 14:41:08

44.9 million, what I recognized was that the 14:41:12

first bit of time on this chart, if we click 14:41:15

ahead, there is a period of time that was 14:41:20

prior to when the Sandia solution was launched. And so I start my lost profits analysis in the third quarter of 2017, after Microchip's competing multi-host Sandia solution has come on the market. That's where these two chips are competing directly. 14:41:22 14:41:26 14:41:29 14:41:37 14:41:41 14:41:43

And obviously if there's only two and they're competing directly and you take one away, the customers wanted single-lane persistent USB, they had two options and now they have one. I conclude that Microchip would have been made those additional sales after Sandia launched. 14:41:46 14:41:48 14:41:51 14:41:54 14:41:58 14:42:01 14:42:04

So that actually totals, if we click ahead, to 35.2 million chips, and if we look at the magnitude of the sales in any year, the biggest year there is an increase of about 10 million chips. 14:42:06 14:42:09 14:42:13 14:42:17 14:42:20

The volumes are going down, but I need to ask the question, does Microchip have the ability to make an additional 10 million chips in a year? 14:42:22 14:42:24 14:42:27 14:42:31

Q. And what did you do to determine whether Microchip had the capacity to make an 14:42:32 14:42:34

additional 7 to 10 million chips a year? 14:42:36

A. So I talked to Mr. Obolsky and looked 14:42:39

at some of the evidence in the record about 14:42:42

the production process, and what I learned is 14:42:44

that there are really three major steps. 14:42:50

First is the production of wafers, 14:42:52

all these little chips end up sort of being 14:42:57

printed on a big wafer. It looks like a small 14:43:00

record album, and then it gets cut into little 14:43:03

chips. 14:43:06

TSMC is the largest wafer maker in 14:43:06

the world, and that's who makes the wafers for 14:43:11

Microchip. They have massive capacity. 14:43:14

The next step is probe and test. 14:43:17

Those wafers get tested by Microchip at a 14:43:22

facility in Thailand, and then it gets sent on 14:43:25

to assembly and packaging where Microchip has 14:43:29

a number of different options. All of them 14:43:32

are very large contract manufacturing 14:43:34

companies that do this. 14:43:36

Q. Were you here when Mr. Obolsky 14:43:38

testified? 14:43:40

A. I was. 14:43:40

Q. Do you recall his testimony about the 14:43:41

volume of chips Microchip makes per day? 14:43:43

A. Yes. I recall it being -- I think it was 20 million chips a day. 14:43:46 14:43:50

Q. Do you know about how many chips per day the incremental sales for the lost profits purposes would represent? 14:43:52 14:43:54 14:43:59

A. In round numbers, in that peak year, it's less than 30,000 a day. 14:43:59 14:44:04

Q. 30,000 compared to 20 million a day that they actually produce now? 14:44:05 14:44:08

A. Yes. It's a tiny, tiny increase in terms of their overall production. 14:44:10 14:44:13

Q. So what does that tell you about Microchip's capacity to meet the demand for these incremental sales? 14:44:14 14:44:16 14:44:18

A. It tells me that they could have easily met the demand for an increase of this magnitude. I know 10 million chips sounds like a lot, but for a company that's making 20 million chips a day, 10 million over the course of an entire year really isn't a very big increase. 14:44:20 14:44:21 14:44:25 14:44:28 14:44:31 14:44:36 14:44:39

Q. So what about marketing capacity; did you assess Microchip's ability to serve 14:44:39 14:44:42

additional customers from a sales and marketing perspective? 14:44:44 14:44:46

A. I did. So on this, we're -- a couple things about this market and this particular chip. One is to make additional sales, they don't have to go out and spend money on the marketing brochures and the sort of things that, you know, you might have to go have somebody design the pages on a website that describe the product because they're already out there. By the time I start the lost profits damages, the chip is actually being sold. We saw that they sold, I think, eight million of these. So there's no additional marketing spend that they need to do. 14:44:47 14:44:53 14:44:57 14:45:01 14:45:04 14:45:07 14:45:09 14:45:12 14:45:14 14:45:18 14:45:20 14:45:23 14:45:25

As far as the sales relationships, the primary customer for this chip, if Boston, the Boston chip isn't there, is actually Aptiv, who is trying to win these OEM deals, did win it with the Boston chip, but in this but-for world, they can't use the Boston chip. The evidence is very clear that the only other chip they could have put in those hubs that would satisfy the demand for single-lane 14:45:27 14:45:30 14:45:33 14:45:37 14:45:41 14:45:44 14:45:48 14:45:50 14:45:53

CarPlay is Microchip's Sandia chip. 14:45:56

They already have a relationship 14:45:59

with Aptiv. I think Mr. Obolsky testified, 14:46:02

they're still selling hundreds of parts to 14:46:05

them. 14:46:05

So I concluded, based on my 14:46:08

discussion with Mr. Obolsky, that no 14:46:10

additional sales and marketing costs of any 14:46:13

kind of any meaningful amount would need to be 14:46:16

spent to make these sales. So they clearly 14:46:19

have the marketing capacity to do it. 14:46:22

Q. So what is your conclusion from 14:46:25

consideration of Panduit factor 3? 14:46:27

A. So on that, having made an assessment 14:46:31

of the volume of chips that will be sold and 14:46:33

what that means in terms of marketing and 14:46:35

manufacturing capacity, I concluded that they 14:46:39

do have the capacity, so we put a checkmark 14:46:41

there. 14:46:44

Q. Okay. 14:46:45

So under Panduit factor 4, what is 14:46:46

it you're trying to do here? 14:46:49

A. So here, on a prior slide, we saw 14:46:51

that I have concluded that there would have 14:46:55

been incremental sort of additional sales of about 35 million chips. The last question that Panduit asks is what would -- what would the profits on those sales have been? Are there profits and what are they? 14:46:58 14:47:00 14:47:03 14:47:08 14:47:11

So I have to go do an analysis of the profitability of the chip that would have been sold, which is the Sandia chip. 14:47:15 14:47:17 14:47:19

Q. So what was your first step? 14:47:21

A. So the first step is to look at what the profit actually was. I don't want to just say well, I think it would have been X. We have actual sales data for the 8.4 million chips they did sell. 14:47:23 14:47:28 14:47:30 14:47:33 14:47:36

So I went and looked at the financial records and could see that Microchip actually made gross profits of about $16.9 million on 8.4 million Sandia units. 14:47:38 14:47:39 14:47:44 14:47:48

And if we do the math on what that means in terms of profit per unit, if you click ahead, that works out to $2.01 of profit per unit for any incremental units that they make. And I concluded that that is a reasonable measure of the lost profit per unit 14:47:55 14:47:58 14:48:00 14:48:07 14:48:11 14:48:14

on any additional sales they would have made. 14:48:17

Q. And is your data that we are looking 14:48:20

at on here from slide 22 from Exhibits 46 14:48:22

through 48? 14:48:26

A. It is. 14:48:27

Q. Okay. 14:48:28

So am I correct that you 14:48:29

determined that the actual gross profits 14:48:31

earned by Microchip on its sales of multi-host 14:48:34

Sandia chips from June 2017 through September 14:48:37

of 2021 was $2.01 per chip? 14:48:40

A. Yes. 14:48:44

Q. Can you explain why gross profits are 14:48:45

the right measure for lost profit per chip? 14:48:47

A. So what I'm trying to figure out is 14:48:50

not what Sandia's overall profit is, including 14:48:54

overhead and things like that. It's given 14:48:59

that they're already selling the product, if 14:49:03

they make more sales on top of what they've 14:49:05

already spent, what would be the profit. 14:49:08

And what gross profit measures is 14:49:12

it's the selling price minus something we call 14:49:16

cost of goods sold, which has all the costs to 14:49:18

manufacture; what do the parts cost, the 14:49:24

materials, the testing, the shipping, everything that's associated with making one more unit of chip. 14:49:27 14:49:30 14:49:32

Since the -- everything else, the headquarters building for Microchip, the sales teams, everything else is fixed, it's already there, there's no incremental cost over and above the cost of just order more parts, test them, package them, get them ready to sell. 14:49:36 14:49:39 14:49:42 14:49:45 14:49:48 14:49:51

So those costs to order more parts from TSMC, test them, package them and ship them, that's all included in the cost of goods sold, which was already taken into account in this gross profit number. So that's the appropriate number from an incremental sales standpoint. 14:49:54 14:49:57 14:50:02 14:50:05 14:50:09 14:50:10 14:50:13

Q. Did you consider whether there would be any incremental sales in marketing costs? 14:50:14 14:50:16

A. I did. Again, I talked to Mr. Obolsky about this and looked at the, kind of the nature of the market where they're dealing with a very small number of Tier 1 suppliers, like Aptiv and Tecvox, that are making boxes. They've already got all the relationships. 14:50:20 14:50:24 14:50:27 14:50:29 14:50:33 14:50:36

It's just a question of which chip is going to go in there, and they already have the marketing materials for those chips. 14:50:39 14:50:42 14:50:43

So I concluded that there's no incremental costs associated with sales and marketing. 14:50:45 14:50:47 14:50:51

Q. Okay. 14:50:52

So what did you conclude with respect to the fourth Panduit factor? 14:50:52 14:50:54

A. The fourth Panduit factor is met. I can calculate the lost profits on those lost sales, and we can put a checkmark there. 14:50:56 14:50:59 14:51:01

Q. Okay. 14:51:04

Since all four factors have been met, what does that mean? 14:51:05 14:51:07

A. That means that Microchip has suffered lost profits and that there is a quantifiable amount of lost profits that can form a damages claim for lost profits. And we just need to go add up those numbers. 14:51:08 14:51:11 14:51:14 14:51:18 14:51:22

Q. And have you done that? Have you added up those numbers? 14:51:24 14:51:26

A. I have. So here, I am just putting the pieces together. At the top of this are 14:51:27 14:51:30

those incremental sales of Sandia that would have occurred, but for Aptiv's infringement. That's the 35.2 million units at a lost profit per unit of 2.01. That's 70,862,439. 14:51:33 14:51:35 14:51:38 14:51:43

Q. So does that $70.9 million in lost profits account for all of Aptiv's infringing sales? 14:51:49 14:51:53 14:51:57

A. No, that -- this is based on 35 million chips. We've got some other stuff that I need to take care of. 14:51:57 14:52:00 14:52:02

Q. Let's take a look at that. 14:52:04

Could we please take the next slide? 14:52:06 14:52:08

THE COURT: Before we do that, why don't -- I think this is a good moment for a break. We have been going for a hour and-a-half, so why don't we take 5, 10 minutes and plan to be back here at 3 o'clock. 14:52:08 14:52:10 14:52:13 14:52:15 14:52:18

(Whereupon, the jury was excused from the courtroom.) 14:52:22 14:52:24

THE COURT: All right. 14:52:45

Stand in recess. Be back in about five minutes. We'll start at 3, okay? 14:52:46 14:52:48

(Whereupon, a recess was taken at 14:52:51

2:53 p.m.) 14:52:54

THE COURT CLERK: All rise. 15:00:06

THE COURT: All right. Have a 15:03:41
seat, please. 15:03:42

Please get the jury, Mr. Koehler. 15:03:43

(Whereupon, the jury entered the 15:03:44
courtroom.) 15:03:46

THE COURT: All right. Have a 15:04:35
seat. 15:04:37

Proceed. Continue. 15:04:39

MR. GRAY: Thank you. 15:04:41

BY MR. GRAY: 15:04:41

Q. Dr. Becker, just before the break, we 15:04:42
had just finished talking about your lost 15:04:44
profits opinion. 15:04:47

Does this $70.9 million in lost 15:04:49
profits account for all of Aptiv's infringing 15:04:51
units? 15:04:56

A. No, it doesn't. 15:04:56

Q. Why not? 15:04:57

A. So as I am sort of trying to depict 15:04:58
here on this slide, the 70.9 million units 15:05:00
covers the accused sales from the third 15:05:04
quarter of 2017 forward. We've got an 15:05:08

additional 9.7 million units that were sold between the second quarter of 2015 and the second quarter of 2017 that are not here; therefore, they are not accounted for in that $70.9 million. 15:05:12 15:05:16 15:05:18 15:05:24 15:05:27

Q. So what happens to those 9.7 million units? Are there damages associated with those infringing sales? 15:05:27 15:05:31 15:05:32

A. So, there are. There's something -- for that, I looked to the sort of general patent damages statute as to what kind of compensation is available. And if we click ahead, the basic sort of framework that I'm working with, from a patent damages standpoint, is that if there's a finding for the claimant, here this would be Microchip, the -- you would have damages adequate to compensate for the infringement, but in no event less than a reasonable royalty. 15:05:34 15:05:36 15:05:40 15:05:43 15:05:46 15:05:49 15:05:52 15:05:54 15:05:58 15:06:03 15:06:06

So for some of these sales, what I think is the adequate compensation for the infringement is the lost profits, but for the rest of them, it is not less than what we call a reasonable royalty. So that other 15:06:08 15:06:11 15:06:16 15:06:19 15:06:21

9.6 million, we are going to talk about a reasonable royalty on that. 15:06:23 15:06:26

Q. So is another way to describe a reasonable royalty is that it's sort of the floor on damages; it has to be a reasonable royalty at least? 15:06:27 15:06:29 15:06:32 15:06:34

A. Yes. At least I think what that prior thing was saying is that whatever the adequate compensation is, that's what the damages award would be, but it's no less than a reasonable royalty. 15:06:35 15:06:39 15:06:41 15:06:43 15:06:46

Q. And is the methodology for determining a reasonable royalty different from lost profits? 15:06:48 15:06:50 15:06:52

A. It is. 15:06:53

Q. Okay. Let's turn to your reasonable royalty opinions. 15:06:55 15:06:57

First, can you explain for the jury what you mean by royalty? 15:06:59 15:07:01

A. So a royalty -- I like to use the analogy with renting a piece of real property. So royalty on a patent is a royalty on intellectual property. You can't -- you know, it is just the rights to something on a piece 15:07:02 15:07:05 15:07:10 15:07:14 15:07:16

of paper. But if you own real property, let's say you own the building, that's your property. You control it. No one can trespass on it without your permission. But lots of times, people say well, I want to give you permission to use my building, to rent my apartment. We're going to enter into a lease agreement that specifies an amount of rent that you are going to pay to use my property, and we'll have a negotiation over that and come to an agreement. For intellectual property, the way the world works, if you're going to give someone permission is you typically enter into a license agreement. It's like a lease. It says what the property is, how long you get to use it, how much you can use it, where can you use it and for that, the equivalent of rent is the royalty payment.

Q. And how do you determine the amount of royalty that should be paid?

A. So here, for the lost profits, I'm sitting here today sort of looking backwards

saying, what would that market have looked like if Aptiv's product hadn't been on the market? 15:08:22 15:08:23 15:08:27

For the reasonable royalty, I conduct what's called a hypothetical negotiation. This is where I imagine that the licensee and the patent owner sit down at a table right before the infringement is going to begin, before, in a sense, instead of -- it's before the person moves into your house that they want to rent, you sit down at the table and figure out what the rent is, not after they have been living in it for seven years. 15:08:27 15:08:30 15:08:32 15:08:38 15:08:41 15:08:44 15:08:49 15:08:51 15:08:53 15:08:55 15:08:57

So here, I've got to put the patent owner and the licensee at a table at the point in time that the license would be needed in order to not infringe. 15:08:58 15:09:01 15:09:05 15:09:07

Q. So can you please explain what you mean by a hypothetical negotiation? 15:09:11 15:09:13

A. Well, it didn't -- it didn't actually occur, so obviously, we wouldn't be here if the parties had sat down in 2015 or 2014 and negotiated a license. 15:09:15 15:09:18 15:09:22 15:09:27

So I have to look at the economic circumstances of the entry or the launch of that product and what the various -- what Microchip would be giving up for license, what would Aptiv be gaining to get a license; those sorts of things. 15:09:28 15:09:30 15:09:35 15:09:39 15:09:43 15:09:45

Q. So is a reasonable royalty -- you're here, you're retained by Microchip in this case; right? 15:09:45 15:09:49 15:09:51

A. Yes. 15:09:51

Q. And so are the opinions you're expressing, is that as if you were Microchip's negotiator at the hypothetical negotiation? 15:09:52 15:09:54 15:09:57

A. No, because this isn't just what -- you know, Microchip doesn't get just what it wants. If it got what it wanted, it would, you know, ask for some astronomical number. 15:10:00 15:10:03 15:10:06 15:10:09

This has to be a number that is a reasonable meeting of the minds that reflects something that both parties could agree to that makes sense for both Microchip and for Aptiv to reach an agreement over a license. 15:10:13 15:10:15 15:10:17 15:10:20 15:10:24

Q. So in your analysis, are you looking at the evidence on both sides and coming to a 15:10:27 15:10:30

conclusion that you think would have been a reasonable outcome? 15:10:32 15:10:34

A. Yes. 15:10:35

Q. You talked a little bit about the timing of the negotiation being just before infringement began. 15:10:38 15:10:40 15:10:43

In this case, when do you assume it occurs? 15:10:45 15:10:47

A. So I assume that it occurs in March of 2014. That's when the accused product was first -- it's not when it was first sold, but it was being offered and -- offered for sale to potential customers, and that sort of triggers the need to have a license in this hypothetical negotiation world. 15:10:47 15:10:49 15:10:53 15:10:56 15:11:00 15:11:03 15:11:05

Q. So why does the date of the hypothetical negotiation matter? 15:11:07 15:11:10

A. Well, it tells us a couple of things. One is it's going to tell me who is sitting at the table, because I could look and see who owned the patent at that time and who was selling the product at that time. 15:11:11 15:11:13 15:11:17 15:11:19 15:11:20

It also tells me the economic conditions in terms of what was the market 15:11:22 15:11:25

demanding in terms of hub products that are relevant to this question of what the license would look like. 15:11:28 15:11:32 15:11:35

Q. So in March of 2014, who were the parties at the hypothetical negotiation? 15:11:37 15:11:40

A. So on the patent owner side, the patent is still owned by the entity SMSC. Now, SMSC has already been purchased by Microchip, so it's not a very important distinction. It's essentially Microchip, but technically, the patent owner, in March of 2014, was the entity SMSC. 15:11:42 15:11:45 15:11:50 15:11:53 15:11:55 15:11:58 15:12:01

On the other side of the table, March of 2014, is before Delphi acquired Unwired, so Unwired is sitting at the table as the licensee. 15:12:06 15:12:09 15:12:12 15:12:15

Q. And so March of 2014 was about six months before Delphi acquired Unwired; correct? 15:12:16 15:12:20 15:12:22

A. Yes. 15:12:22

Q. Did you consider whether having Unwired and SMSC at the table would have been materially different than having just Microchip and Aptiv at the table? 15:12:23 15:12:26 15:12:30 15:12:32

A. I did consider that, and concluded that -- we'll see, as we walk through my analysis, I don't think anything -- certainly the outcome wouldn't change if it was Aptiv and Microchip. At that time, SMSC was part of Microchip, so that's obviously not going to change the outcome. 15:12:33 15:12:36 15:12:39 15:12:42 15:12:47 15:12:54 15:12:57

For Unwired, they are a hub maker who is about to embark on a decision to make their own chip that will be used in a hub that will displace the opportunity for Microchip to be selling chips into hubs, so it's similar economic circumstances to the ones we find if Aptiv had been at the table. 15:12:58 15:13:01 15:13:05 15:13:09 15:13:13 15:13:18 15:13:20

Q. Are there certain assumptions that you have to make when conducting this hypothetical negotiation? 15:13:22 15:13:23 15:13:26

A. Yes. There's a -- I think I failed to mention, all of this kind of structure of looking at things as a hypothetical negotiation comes sort of like the Panduit factors came from a case that set forth this sort of process. 15:13:28 15:13:32 15:13:34 15:13:36 15:13:39 15:13:43

Here I'm using something called 15:13:44

the Georgia Pacific analysis. There was a case many years, patent case called the Georgia-Pacific case, and they sort of laid out this process of saying you can figure out a reasonable royalty by looking at a hypothetical negotiation. And that case sets forth some required assumptions. 15:13:46 15:13:50 15:13:54 15:13:56 15:13:59 15:14:01 15:14:05

The first is that the parties to this negotiation assume and understand that the patent is valid, enforceable and infringed. In a real negotiation, you might have the potential licensee saying well, I'm not going to pay you anything more than a very small amount because I don't think your patent is valid, or I don't think we infringe. 15:14:07 15:14:10 15:14:13 15:14:17 15:14:20 15:14:23 15:14:26 15:14:28

Here, the parties say we understand the patent is valid, we understand we need a license, we just need to figure out what's reasonable. 15:14:31 15:14:33 15:14:36 15:14:38

They come in willing to negotiate. That's not always something in the real world. They have reasonable knowledge and expectations. 15:14:39 15:14:41 15:14:45 15:14:46

And this next bullet, the same 15:14:49

information, it's kind of unique, and again, not what happens in the real world, but I get to sort of impart to these players knowledge of all the relevant information. 15:14:51 15:14:54 15:14:59 15:15:02

So in a real negotiation, Unwired may not know what Microchip's profitability is on its chips. Microchip may not know some of Unwired's or Aptiv's internal stuff. But in this negotiation, I get to sort of deal all the cards face up. 15:15:06 15:15:10 15:15:13 15:15:17 15:15:21 15:15:24

And the last is that both sides will act in good faith and they have to reach an agreement. We'll see, even though they are competitors for the supply of these particular chips, they can't just say, I'm never going to license to you. Microchip has to license; Unwired has to agree. 15:15:26 15:15:28 15:15:30 15:15:33 15:15:37 15:15:39 15:15:43

MR. GRAY: Can we go to slide 31, please. 15:15:47 15:15:49

BY MR. GRAY: 15:15:50

Q. And what are we looking at here, Dr. Becker? 15:15:51 15:15:54

A. So this Georgia-Pacific case lays out a checklist. Like my four factor checklist 15:15:54 15:15:57

for lost profit, there is a 15 factor checklist for a hypothetical negotiation. These are the types of things that normal people in a real world setting would consider in trying to reach an agreement about a patent license. 15:16:00 15:16:03 15:16:06 15:16:10 15:16:14 15:16:16

Q. All right. 15:16:17

I'd like to walk through all 15 of these very slowly, if you would. 15:16:18 15:16:20

A. I don't think I have the time to do that. 15:16:23 15:16:25

Q. Did you consider each of these factors? 15:16:25 15:16:27

A. I did. In every case, we -- I considered them, and what I found is that depending on the facts and circumstances of the particular case, they're going to be things that are not relevant because the facts just don't fit this 15 factor list. 15:16:27 15:16:31 15:16:34 15:16:37 15:16:40 15:16:43

But I did go through and we always, my staff and I, we really do use this as a checklist to make sure we've looked at all of these factors. 15:16:46 15:16:48 15:16:50 15:16:53

Q. Can you give us an example of some 15:16:54

factors that were not relevant in this case? 15:16:57

A. Sure. One of the things that's 15:17:00

sometimes relevant if you're trying to figure 15:17:02

out the outcome of a license negotiation is 15:17:04

the question of whether the patent has ever 15:17:07

been licensed before, sort of like if you were 15:17:09

renting your apartment, the person sitting 15:17:12

across the table negotiating might say well, 15:17:15

what was the rent to the last tenant? 15:17:17

Similarly, comparable patents 15:17:20

licensed by the infringer, are there 15:17:25

comparable pieces of intellectual property 15:17:27

that we can look at the rental, the royalty 15:17:30

rates for. 15:17:32

Here, Microchip has never licensed 15:17:33

the patent, there are no comparable patents 15:17:36

that Aptiv has licensed, and there's no sort 15:17:39

of standard royalty rates in the industry for 15:17:42

a patent like this. So that evidence is not 15:17:46

relevant in this case. But we did go through 15:17:49

and look to see whether there was any 15:17:51

evidence. 15:17:52

Q. So can you walk us through the other 15:17:53

factors at a high level and summarize the role 15:17:55

they played in your analysis? 15:17:59

A. Sure. The next two factors look at 15:18:00

the duration and term of the license and what 15:18:04

we call the nature and scope. That's really, 15:18:06

leaning on this real estate analogy, is this a 15:18:10

month-to-month lease, is it a one-year lease, 15:18:14

is it a 10-year lease. 15:18:18

What's the scope? Is it going to 15:18:19

be selling these products anywhere in the 15:18:22

world? Does the amount of compensation have 15:18:25

to consider sales anywhere in the world? And 15:18:27

is it an exclusive license or nonexclusive? 15:18:31

Here, we're dealing with a single 15:18:34

U.S. patent. The scope, from a geography 15:18:38

standpoint, is clearly the U.S. It's a 15:18:41

nonexclusive license. Microchip is going to 15:18:44

be selling products that use this patent as 15:18:47

well, so Aptiv doesn't -- isn't going to be 15:18:49

negotiating for an exclusive use of this 15:18:52

patent. 15:18:55

And timing-wise, it's from March 15:18:56

of 2014 through the day of this trial. 15:18:59

Q. Did you reach any conclusions about 15:19:03

the structure of the license? 15:19:04

A. Yes. So the -- the next piece that's really sort of part of the same nature and scope is to look at what kind of royalty rate we're going to use. Sometimes patent licenses, you sit down and negotiate and the circumstances lead the parties to say we'll just write a check for some amount today and that will give us rights for the life of the patent. That happens sometimes. 15:19:06 15:19:09 15:19:12 15:19:16 15:19:20 15:19:23 15:19:25 15:19:29 15:19:32

Here, the facts and circumstances support what we call a running royalty, and I've got a slide on that. This is where it's sort of a pay-as-you-go approach, where the amount of royalties depend on the amount of sales. If -- and again, they are sitting down before they have actually started selling it, and so it makes sense to say well, we don't know over the next seven years, are we going to sell a little of this, a lot of it. If you agree to a running royalty that has a rate, so many, you know, so much per chip or per unit, then we can have the royalty amount sort of be a win/win. If there's lots and lots of sales, then the royalty goes up. 15:19:34 15:19:37 15:19:40 15:19:45 15:19:49 15:19:53 15:19:56 15:19:58 15:20:01 15:20:04 15:20:06 15:20:11 15:20:15 15:20:18 15:20:21

But the -- Aptiv has made lots and lots of sales, and if it's not a successful product, there won't be much owed in the way of a royalty. So that's why we use this structure and that's why this structure is pretty common in the licensing industry. 15:20:23 15:20:26 15:20:28 15:20:31 15:20:33 15:20:35

Q. Do you understand whether Aptiv's damages expert agrees with you about the running royalty structure? 15:20:38 15:20:41 15:20:43

A. He does. 15:20:44

Q. Okay. 15:20:45

What's the next factor you'd like to discuss? 15:20:46 15:20:48

A. So the next factor is sort of following on having concluded that I'm going to use a running royalty structure, one of the things that we're going to have to come up with at some point is what we call the royalty base. That's how many units are going to be assessed this royalty rate. 15:20:48 15:20:52 15:20:55 15:20:57 15:20:59 15:21:01 15:21:06

The technical thing in the case is the extent to which the infringer made use of the patented technology. Here we're just going to go count up the number of hub 15:21:09 15:21:11 15:21:14 15:21:16

products that Aptiv sold that contained this accused Boston chip. 15:21:19 15:21:21

Q. And have you quantified the extent of use by Aptiv then? 15:21:23 15:21:26

A. Yes. We've seen this a couple times before. This is from Exhibit 182, and that's basically the 44.9 million units that have been sold through November of 2021. 15:21:27 15:21:30 15:21:32 15:21:38

Q. So that's a number that we are going to end up multiplying by the royalty rate that we'll talk about next? 15:21:40 15:21:42 15:21:46

A. Yes. In terms of just looking at this purely as a royalty, once we have a rate, if we didn't have the lost profits issue, we would be looking at 44.9 million units times this rate that I am going to come up with. 15:21:47 15:21:50 15:21:55 15:21:58 15:22:01

Q. Okay. 15:22:04

What about the remaining factors? 15:22:04

A. So the rest of the factors really go to the -- and have an influence on the royalty rate. They are things like those bottom two, on the left, boxes, the established licensing policy and the competitive position of the parties. Is Microchip or SMSC sitting there? 15:22:06 15:22:10 15:22:13 15:22:16 15:22:20 15:22:21

Was it out actively trying to license this patent? Yeah, I want to find lots of people to license it, or was it trying to keep this for itself and we're sort of having to force them to license at this table? 15:22:26 15:22:29 15:22:33 15:22:35 15:22:37

The competitive position, we'll talk a lot about that, the top right, profitability and commercial success of the product made under the patent. Obviously if products that use this technology are successful and profitable, that can drive up the rate. 15:22:39 15:22:41 15:22:44 15:22:46 15:22:49 15:22:52 15:22:55

So all of these factors I have taken into account to come up with the rate that we'll talk about here in a minute. 15:22:56 15:22:58 15:23:00

Q. And rather than going through each of these factors individually, do you have a slide that summarizes what you concluded from your analysis of those factors? 15:23:02 15:23:04 15:23:07 15:23:09

A. I do. I've really, after looking at all those other factors, concluded that there are four key things that would influence the outcome of this negotiation. The first is that the license to Aptiv authorizes direct 15:23:10 15:23:14 15:23:16 15:23:18 15:23:20

competition with Microchip's Athens and Sandia products. 15:23:24 15:23:27

Before the negotiation, Unwired is a potential customer. Aptiv is certainly a potential customer, but if they start supplying chips from internally, that internal fabrication and supply of chips is directly displacing the opportunity for Microchip to make a sale. 15:23:28 15:23:32 15:23:35 15:23:40 15:23:44 15:23:48 15:23:51

So there is direct competition at the chip level. There may not be any competition at the hub level, but at the chip level, with this license, Unwired and Aptiv can get into the chip business for a multi-host controller chip, and that's going to be important. 15:23:52 15:23:54 15:23:57 15:24:00 15:24:04 15:24:07 15:24:09

Second is that Athens and Sandia are highly profitable products. So the thing that is going to be impacted by this competition is actually a profitable product. 15:24:11 15:24:14 15:24:18 15:24:20

Third, the patented multi-host architecture uniquely satisfies the demand for single-lane CarPlay with persistent USB. That's important. 15:24:23 15:24:26 15:24:29 15:24:33

And finally, this patented multi-host architecture provides the lowest cost CarPlay solution that meets the OEM requirements. Those are the four things that I sort of took into account as the most influential on the rate. 15:24:34 15:24:37 15:24:39 15:24:44 15:24:46 15:24:49

Q. Let's start with the first bullet point. What did you find there? 15:24:51 15:24:54

A. So here, it's looking at this competitive dynamic, and as heard, quite a bit of testimony about that already. Here is the question: Are they really competitors? Isn't Aptiv a customer of Microchip? 15:24:55 15:24:58 15:25:02 15:25:06 15:25:08

But you have to think about it, there is this sort of chip supply level of the business, supplying chips to the Tier 1 hub makers like Aptiv who then supply products to the OEMs. 15:25:12 15:25:13 15:25:17 15:25:20 15:25:24

Prior to entering into this license, as Mr. Obolsky described, Microchip and Aptiv -- Aptiv is a customer and they're really business partners in trying to win business from the OEMs. 15:25:25 15:25:28 15:25:31 15:25:35 15:25:37

What Aptiv is going to do with 15:25:39

this license, though, is essentially step into the chip level chain of commerce. They now have their own store to supply from. They are not selling it to anybody else, but they're going to get their chips from their own internal supplier, not from Microchip. So it's directly competitive. 15:25:41 15:25:43 15:25:47 15:25:51 15:25:53 15:25:55 15:25:59

Q. So what impact does granting a license to a competitor have on the royalty rate? 15:26:02 15:26:05 15:26:08

A. So in any case where you have -- I'm looking at the difference between just an inventor trying to license to somebody who might commercialize their invention and comparing that to a situation where you have the -- you know, a competitive dynamic, the competitive situation leads to higher royalty rates. 15:26:08 15:26:11 15:26:13 15:26:16 15:26:19 15:26:21 15:26:26 15:26:29

Q. Did you see any evidence in this case that the competitive impact actually occurred here? 15:26:29 15:26:32 15:26:34

A. Yes. There's lots of documents and lots of evidence that there was actually a competitive -- not just a competitive threat, 15:26:34 15:26:37 15:26:40

but that it did materialize. 15:26:43

Q. Let's look at a couple of those. 15:26:45

MR. GRAY: Mr. Ferrer, could we 15:26:48

please see Exhibit 82. 15:26:50

BY MR. GRAY: 15:26:53

Q. Dr. Becker, what are we looking at 15:26:54

here? 15:26:55

A. So this is part of an email chain 15:26:56

that I think has been talked about a number of 15:26:58

times. This is from Mike Pennington to a 15:27:01

bunch of people at Microchip in February of 15:27:04

2016. 15:27:10

And it's my understanding from 15:27:12

this email that their draft -- they are 15:27:13

working on a message or a draft of a letter to 15:27:16

send to Delphi to say look, what you're doing 15:27:19

with the Unwired chip is -- is creating a 15:27:24

competitive situation. 15:27:28

And what they are wanting to say 15:27:30

or proposing to say is you may recall from our 15:27:32

conversation last fall that since Delphi's 15:27:36

purchase of Unwired technology, we have found 15:27:39

ourselves in the unique situation where Delphi 15:27:42

is now competing directly with Microchip as a 15:27:44

silicon supplier, so that's at the chip level, with their development of their own custom ASIC. We have seen Delphi position this ASIC device against ours in the marketplace which has been costing Microchip business. 15:27:48 15:27:52 15:27:54 15:27:58 15:28:00

So clearly, this -- the sale of the -- or the use of the ASIC in their hubs is creating a situation that is competitive with Microchip's opportunity to sell Athens and Sandia chips. 15:28:03 15:28:08 15:28:12 15:28:15 15:28:18

MR. GRAY: Mr. Ferrer, can we see Exhibit 42, please. 15:28:21 15:28:24

THE WITNESS: So here, this is backing up in time just a little bit. This is November of 2015. This is Ganesh Moorthy to a similar group of people. And sort of making the statement that Unwired was an independent company and Delphi in this field, I think there's a typo there, field of play was not a competitor. 15:28:32 15:28:33 15:28:35 15:28:41 15:28:45 15:28:48 15:28:53 15:28:56

That situation was changed dramatically with the acquisition of Unwired by Delphi. Price reductions were offered in exchange for significant volume and revenue 15:28:58 15:28:59 15:29:02 15:29:05

growth. In fact, Unwired has been destroying Microchip's revenue and profits with what they have done. 15:29:07 15:29:10 15:29:13

And the key here is that situation doesn't change just because Delphi acquired them. So the internal supply of chips is still competing with Athens and Sandia, even though Delphi owns them. It is an alternative that is displacing Microchip's opportunity to make a sale. 15:29:14 15:29:17 15:29:19 15:29:23 15:29:27 15:29:30 15:29:32

BY MR. GRAY: 15:29:34

Q. Were you here when -- you said you were here when Mr. Obolsky testified; correct? 15:29:34 15:29:36

A. Yes. 15:29:39

Q. And you recall some questions suggesting that since Aptiv doesn't sell the Boston chip to anyone else and only uses it internally for hubs, that Aptiv couldn't be in competition with Microchip? He talked about that a little awhile ago; correct? 15:29:39 15:29:41 15:29:44 15:29:46 15:29:51 15:29:54

A. Yes. It -- I agree that they don't sell -- Aptiv isn't making the Boston chip and sending it out and sort of offering it to anybody else. They are keeping it as their 15:29:56 15:29:59 15:30:05 15:30:08

own proprietary source for their hubs as a competitive -- to give them a competitive advantage over the other hub makers. 15:30:09 15:30:13 15:30:16

But it clearly competes at the silicon level, at the chip level. It is a chipmaker supplying chips to Aptiv that is displacing Microchip. It is the essence of a competitive relationship. 15:30:18 15:30:22 15:30:26 15:30:29 15:30:33

Q. Is that what Mr. Obolsky testified as what was previously a win/win relationship now became an Aptiv wins and Microchip loses relationship? 15:30:34 15:30:37 15:30:40 15:30:43

A. Yes. 15:30:44

Q. Turning back to your list of key factors... 15:30:47 15:30:49

MR. GRAY: If we could go back to the presentation, please. 15:30:50 15:30:52

BY MR. GRAY: 15:30:54

Q. What's next? 15:30:54

A. So next is to look at the -- I think I have established, at least in my mind, that the license is going to authorize competition with Athens and Sandia. 15:30:54 15:30:57 15:30:59 15:31:02

The next question is well, so 15:31:04

what? If you lose the sale of Athens or lose the sale of Sandia, is that going to hurt Microchip? We'll look at the profitability of those two chips. 15:31:06 15:31:10 15:31:12 15:31:15

First, Athens is the chip that is competing with this dual role hub product in the 2015 to 2017 period. So I went and looked at the profitability of that product. 15:31:16 15:31:20 15:31:24 15:31:28

Q. And what did you find about the profitability of the Athens product? 15:31:30 15:31:32

A. So the Athens product is on the market here from 2013 through June of 2019. That's as far as I went with the data on the profitability of Athens. And we can see that that -- if I take the revenues and the units and the margins, I get the $2.23 per chip for that product over this time period. 15:31:34 15:31:38 15:31:44 15:31:46 15:31:49 15:31:53 15:31:58

Q. And is that calculation from Exhibit 45? 15:32:02 15:32:05

A. It is. 15:32:05

Q. Did you also take a look at the success and profitability of the Sandia multi-host product? 15:32:06 15:32:08 15:32:11

A. I did. 15:32:11

Q. And what did you find there? 15:32:12

A. So I looked at two things here. One was what was the expected profitability in the 2015 Sandia Business Plan, and found that if I worked through the math on their forecast tables in their financial section of that, that they expected gross profits of $2.04 per unit on the Sandia product line. 15:32:16 15:32:20 15:32:26 15:32:29 15:32:32 15:32:36

Q. Did you also look at the actual profits of Sandia? 15:32:39 15:32:41

A. I did. So we saw essentially this same calculation in the lost profits calculation. Sandia generated gross profits per unit of 2.01, so a little bit less than the planned amount, but not a huge amount different. 15:32:42 15:32:47 15:32:48 15:32:53 15:32:56 15:33:00

Q. If we go back to your list of key factors, what's the next thing you found most important? 15:33:00 15:33:02 15:33:04

A. So the next question was all right, how important is this multi-host technology to the success of the products that are being sold that contain that technology? 15:33:04 15:33:07 15:33:12 15:33:14

So I looked at the evidence in the 15:33:16

case and talked to Mr. Zatkovich about this as well to get a sense of what's the importance of that particular multi-host architecture in being able to satisfy the U.S. Big 3 demand for single-lane CarPlay with persistent USB. 15:33:20 15:33:23 15:33:27 15:33:31 15:33:36

And what I found is that it is very important. It, in fact, is uniquely satisfying that demand. 15:33:40 15:33:42 15:33:46

Q. And do you understand that Mr. Bohm testified that he and the rest of the Microchip engineers are unaware of any other way to provide multi-host capability other than with this patent? 15:33:48 15:33:50 15:33:53 15:33:55 15:33:58

A. So yes, I'm aware of Mr. Bohm's testimony in that regard. I've seen testimony from various people in this case, deposition testimony, that supports that, and the marketing evidence that I looked at earlier where, let's just go look in the marketplace and see. We're seven years into it. Is there anybody else selling it? And there's only two. 15:33:59 15:34:02 15:34:05 15:34:10 15:34:12 15:34:15 15:34:17 15:34:21 15:34:23

So it tells me that it's uniquely responsible for satisfying that demand for 15:34:23 15:34:26

single-lane CarPlay with persistent USB. 15:34:29

Q. Did you see any documents from Aptiv, 15:34:31

itself, that confirmed your conclusion on this 15:34:34

factor? 15:34:36

A. I did. 15:34:37

Q. What are you showing on this slide? 15:34:39

A. So this is a page from an Aptiv -- it 15:34:41

was a Delphi presentation at the time, talking 15:34:46

about the hubs and media modules, and the 15:34:49

headline on this slide says, "How do we 15:34:55

support CarPlay in hubs and media modules?" 15:34:57

And this first bullet point is, I 15:35:01

thought, very significant, that it says, "What 15:35:04

differentiates us," meaning Delphi, "is our 15:35:07

own ASIC to support Apple CarPlay." 15:35:11

And then it goes on to say, "The 15:35:15

chip is designed for multi-port architecture 15:35:17

with CarPlay support through a unique 15:35:21

host-to-host bridging technology." 15:35:23

So they're not saying that it's 15:35:26

other things in the hub; they're saying the 15:35:28

thing in the hub that is uniquely 15:35:30

differentiating us in our ability to make 15:35:32

these -- you know, have this unique product, 15:35:35

is this unique host-to-host bridging technology. 15:35:37 15:35:40

And the next three points really basically say the things that have been talked about here. Multiple downstream ports enable a single connection to the USB to the head unit, so that's the single wire. 15:35:41 15:35:44 15:35:46 15:35:52 15:35:55

The next bullet point is any of the downstream ports may host CarPlay, so it's one wire up, CarPlay on any downstream port. 15:35:58 15:35:59 15:36:02

And the third is while one of the ports is occupied with Apple CarPlay, the rest of the ports in the system can stay active and may exchange data. 15:36:06 15:36:08 15:36:11 15:36:14

So they're saying what Mr. Zatkovich told me and what I think the market is kind of saying, is that if you want single-lane persistent USB CarPlay, which the U.S. OEMs wanted, this technology is the only way to do it. 15:36:16 15:36:19 15:36:21 15:36:25 15:36:28 15:36:32

Q. And the bottom highlighted bullet point, that references persistent USB? 15:36:34 15:36:37

A. Yes. That's another way of saying persistent USB, when you say that the rest of 15:36:40 15:36:43

the ports in the system stay active and may exchange data when one is occupied with CarPlay. 15:36:45 15:36:48 15:36:51

Q. Okay. 15:36:52

What's the last point in your list of key factors? 15:36:52 15:36:54

A. So the last point is really one of the benefits. It's something that I can sort of get my teeth into and actually start to put some numbers on it. 15:36:56 15:36:59 15:37:01 15:37:04

We've seen that, yeah, this is unique and the OEMs wanted it and it's awesome, the single-lane persistent USB, but how do I quantify what that benefit is? 15:37:06 15:37:07 15:37:11 15:37:15

And what we find is that one of the key benefits of this is that it provides the lowest cost solution that meets these requirements for single lane -- well, if you want persistent USB on every port, this is the lowest cost way to do it. 15:37:18 15:37:20 15:37:22 15:37:27 15:37:29 15:37:34

And we're going to look at that costing, but this idea of the architecture providing a cost advantage is a way to calibrate the value of the technology. 15:37:37 15:37:39 15:37:42 15:37:45

Q. So what's your basis for concluding that the patented invention provided the lowest cost solution? 15:37:48 15:37:50 15:37:52

A. Well, a couple things. One is I talked to Mr. Zatkovich about it and the -- as to whether this architecture, can you get persistent USB in any other way, and the answer was no. 15:37:53 15:37:56 15:38:04 15:38:08 15:38:12

And then there is actually documents from Microchip and from Aptiv that very consistently are recognizing the architecture as providing a cost advantage. 15:38:14 15:38:15 15:38:20 15:38:22

Q. Let's look at some of those documents, starting with a Microchip document. 15:38:24 15:38:25

A. So this is out of the business plan, Exhibit 25, the Sandia Product Business Plan. This is in a section of it where they set out the Sandia multi-host architecture, and in the paragraph that I have pulled out, they really make the statement that is relevant to this point. 15:38:28 15:38:32 15:38:35 15:38:38 15:38:44 15:38:46 15:38:48

It says, "This architecture has the advantage of utilizing a single USB path and hence a single port and a normal USB 15:38:49 15:38:50 15:38:53

cable, and they all contribute to an optimal BOM," or bill of materials. 15:38:57 15:39:00

Q. What is a bill of materials? 15:39:03

A. The bill of materials, and in the industry, manufacturing industry, people just call it a BOM. You take -- you could have a bill of materials for this display here and just add up, there is some plastic, there is a screen, there is some chips, there is a cable; all the pieces you need to make a product make up its bill of materials. 15:39:05 15:39:08 15:39:10 15:39:14 15:39:17 15:39:20 15:39:22 15:39:25

You add up all the costs of I need two of these and one of these and one of these. You add it all up. That's your total BOM cost, or bill of materials cost. 15:39:27 15:39:30 15:39:32 15:39:35

Q. And so what does it mean that the patented solution provides an optimal BOM? 15:39:37 15:39:40

A. Optimal BOM, I think that's synonymous with the lowest cost solution. The optimal, you're obviously always trying to reduce your bill of materials cost, so an optimal BOM is the lowest cost solution. 15:39:44 15:39:46 15:39:50 15:39:53 15:39:56

Q. Did you do anything to actually measure the cost advantage provided by the 15:39:58 15:40:00

patented invention? 15:40:02

A. I did. 15:40:03

Q. Can you describe, in a high level, how you went about that analysis? 15:40:03 15:40:06

A. So at a high level, I took the patented sort of chip, the basic architecture of the chip and looked at the makeup of that, used that architecture, what were the main components that you would have to have, and then compared it to the two alternative architectures to get as close to meeting the feature requirements or providing the feature requirements of that patented hub. 15:40:07 15:40:11 15:40:16 15:40:18 15:40:21 15:40:23 15:40:26 15:40:31 15:40:35

So we're going to compare the patented architecture to the sort of two closest architectures that gets you some, if not all, of the features. 15:40:39 15:40:41 15:40:45 15:40:48

Q. Okay. 15:40:49

And what are the two alternatives? 15:40:50

A. So there are two alternatives that I found in the Microchip literature from talking to Mr. Obolsky about what Microchip, itself, viewed as the alternatives that were available to its customers. 15:40:52 15:40:56 15:40:59 15:41:03 15:41:05

There are sort of two different approaches. One is stick with the single lane, which is on the right, stick with the single-lane solution, but give up on the persistent USB. So you can do it without a path -- with a single-lane non-persistent USB, but if you want persistent USB, you've got to go to the left-hand side of the screen and you can get the persistence, but you've got to give up the single lane. So now you've got the two-lane persistent USB. Those are the two alternatives that I have evaluated. 15:41:07 15:41:10 15:41:13 15:41:15 15:41:19 15:41:25 15:41:28 15:41:31 15:41:33 15:41:36 15:41:38 15:41:42

Q. And the alternative on the right, the single-lane alternative, do you understand that to be Microchip's Athens FlexConnect solution? 15:41:44 15:41:47 15:41:51 15:41:54

A. Yes. That's Athens, that 8460X chip uses an Athens chip, and you can do single-lane CarPlay on downstream ports if you connect to an OTG port through Athens, but it cannot do persistence. 15:41:54 15:42:00 15:42:03 15:42:07 15:42:12

Q. And do you have an understanding of what the USB3740 chip is that's here? 15:42:12 15:42:14

A. I understand that to be a USB switch, 15:42:19

and we see those switches in both -- both solutions. 15:42:22 15:42:25

Q. And do you know why those switches are required in these alternatives? 15:42:26 15:42:27

A. Well, again, this is getting into some technical stuff that I learned from Mr. Obolsky and Mr. Zatkovich, but it's my understanding that when you have essentially multiple places in your car that you can plug the USB into, like in my -- in my pickup truck, there's two in the console. In order to have either one of those work, I don't have to look and see, is one of them there that's labeled CarPlay. I can plug into either one to have that switching. So that either one could be switched over to either one that's talking to the head unit, you'd have to have those switches. 15:42:30 15:42:32 15:42:34 15:42:37 15:42:42 15:42:44 15:42:47 15:42:51 15:42:53 15:42:56 15:43:00 15:43:02 15:43:04 15:43:07

Q. So are the alternatives you're showing here on this slide something that you created for your analysis in this litigation? 15:43:09 15:43:11 15:43:15

A. No. I was an engineer a long time ago, but I stopped being one back in probably 1986. So no, I did not create these. These 15:43:17 15:43:19 15:43:24

specific architectures were actually found in that Sandia Business Plan. But I talked to Mr. Obolsky about them and I talked to Mr. Zatkovich about them as well. 15:43:28 15:43:33 15:43:35 15:43:37

Q. And do you have an understanding of whether car manufacturers, in fact, bought both of these solutions? 15:43:39 15:43:41 15:43:43

A. Yes. Yes. It's my understanding that there are -- there are car manufacturers who are -- have purchased both solutions as -- to meet their requirements. 15:43:44 15:43:47 15:43:50 15:43:57

Now, The Big 3 have the demand for the single-lane persistent USB. It's my understanding that those people are not -- GM Ford and Chrysler here in the U.S. aren't doing this. They are obviously buying the Aptiv product. 15:43:59 15:44:01 15:44:05 15:44:09 15:44:11 15:44:13

Q. Did you see any evidence that Aptiv also considered the value of the multi-host controller technology by comparing it to alternatives? 15:44:14 15:44:16 15:44:18 15:44:20

A. Yes. This was actually kind of a surprise, that when I started looking at the Aptiv documents related to their product, I 15:44:22 15:44:23 15:44:26

found kind of a similar expression of this is uniquely satisfying single-lane CarPlay, and we can look at how good it is by comparing it to these two solutions, or things very similar to these two solutions. 15:44:31 15:44:34 15:44:39 15:44:41 15:44:45

MR. GRAY: Mr. Ferrer, can we please pull up Exhibit 18. 15:44:47 15:44:49

BY MR. GRAY: 15:44:53

Q. Dr. Becker, what is Exhibit 18? 15:44:54

A. So this is a presentation that Delphi made to an organization called the PACE Award that Automotive News has, and it's my understanding that this was their presentation when they were finalists in trying to convince the jury that they should win, which they ultimately did. 15:44:56 15:44:59 15:45:04 15:45:07 15:45:08 15:45:12 15:45:14

This is from January of 2016, and so they -- there's a lot in here where they're talking about the benefits of the dual role hub. 15:45:16 15:45:18 15:45:21 15:45:23

MR. GRAY: Can we please turn to page 13 of Exhibit 18. 15:45:28 15:45:30

BY MR. GRAY: 15:45:34

Q. Dr. Becker, what does this slide 15:45:35

show? 15:45:36

A. So this is a general description or summary by Delphi of the sort of challenge that they faced when they were getting ready to launch their product. And if you can pull out that top bullet point. 15:45:37 15:45:39 15:45:44 15:45:47 15:45:50

So they say when Apple announced CarPlay in 2012, iPhone users couldn't wait, just sort of read ahead. There was only one problem. OEMs couldn't make it work without driving up the cost, limiting the functionality or taking up all the space in the head unit. 15:45:57 15:45:59 15:46:04 15:46:06 15:46:09 15:46:12 15:46:16

And we'll see what they mean by driving up the cost and limiting the functionality, is that if you weren't going to use the patented multi-host technology, the other solutions have some combination of driving up the cost and accepting a more limited functionality. 15:46:16 15:46:18 15:46:20 15:46:23 15:46:28 15:46:30 15:46:34

MR. GRAY: Can we please turn to page 18. 15:46:36 15:46:38

BY MR. GRAY: 15:46:43

Q. And, Dr. Becker, what is page 18 15:46:43

talking about? 15:46:45

A. So here, they are laying out 15:46:46

potential options for multiple USB connections 15:46:48

with Apple CarPlay. This is really the same 15:46:52

thing that I saw in the Sandia Business Plan 15:46:55

where they said there's three ways that we can 15:46:57

give carmakers multiple connections and do 15:47:00

CarPlay, a -- the third one is the Delphi dual 15:47:04

role hub, so that's the patented one. No. 2 15:47:09

is to use a port reverse hub. That's the 15:47:14

single-lane solution, and they say developed 15:47:17

by another IC manufacturer. That's actually 15:47:20

the FlexConnect Athens that lets you do a 15:47:22

single-lane backup to the head unit. Or they 15:47:26

can -- the first option is to add multiple 15:47:31

paths. That's the two-wire solution. 15:47:33

So it's really the same expression 15:47:35

of we can do it the patented way or 15:47:38

essentially downsize with two alternatives, 15:47:44

single lane, dual lane. 15:47:46

And the -- that box at the bottom 15:47:49

actually was interesting because it says, "The 15:47:52

benefits of the Delphi dual role hub are 15:47:55

understood by studying the drawbacks of 15:47:58

competing solutions." 15:48:01

Q. Do you agree with that statement? 15:48:04

A. That's essentially what I'm doing in my costing analysis, is to compare the patented architecture to these two alternatives that both Microchip and Delphi are saying are the things that were out there in the market as alternatives. 15:48:05 15:48:06 15:48:09 15:48:12 15:48:15 15:48:18

Q. Okay. 15:48:22

And can you walk the jury through your quantification of the cost benefit of the patented invention? 15:48:22 15:48:25 15:48:28

A. Sure. So this is the two-lane alternative or the two-wire solution. The little diagram on the left is just a block diagram of that two-wire solution, and I've got a red box over the pieces of that solution that if you do Sandia, the multi-host Sandia, you don't need -- it basically replaces the four things that are covered up. 15:48:29 15:48:31 15:48:36 15:48:39 15:48:42 15:48:46 15:48:53 15:48:59

There's two USB8460Xs and two USB3740s. If we cost out just those pieces, because the rest of the stuff really isn't relevant to the patent, if we cost out those 15:49:01 15:49:06 15:49:10 15:49:13

pieces, we get a bill of materials of $5.90, and the average cost of the Sandia solution for a two port Sandia is 2.62. 15:49:16 15:49:20 15:49:23

So we can see that relative to the two-lane alternative, Sandia is providing a $3.28 benefit. 15:49:28 15:49:31 15:49:36

Q. So is it fair to say that on the right side of the screen here, you are comparing the market value of the patented solution to the market value of the two-lane solution? 15:49:37 15:49:40 15:49:42 15:49:46 15:49:50

A. Yes. The portion of the market value of the two-lane solution that relates to the piece that sort of overlaps with what Sandia is doing. 15:49:50 15:49:53 15:49:56 15:49:59

Q. So if a U.S. OEM were to choose the two-lane solution that we're looking at here on the screen, would it provide CarPlay with persistent USB on all downstream ports? 15:50:01 15:50:05 15:50:07 15:50:09

A. Yes. This, from a functionality standpoint, this solution is the one that, if you said I have to have multiple ports and I have to have CarPlay on those ports and I have to have persistence, everything I have heard 15:50:12 15:50:15 15:50:19 15:50:23 15:50:25

says the only way you can do that is with a two-lane solution, and that costs out at 3.28. 15:50:29 15:50:31

So that's telling me that CarPlay on every port with persistent USB, the benefit or value that's being created by the Sandia and this multi-host technology, is $3.28. 15:50:36 15:50:39 15:50:43 15:50:47

MR. GRAY: Can we look at the next slide, please. 15:50:56 15:50:57

BY MR. GRAY: 15:50:59

Q. What's that slide showing us, Dr. Becker? 15:50:59 15:51:01

A. So this is from the Sandia Business Plan. I went and looked to just sort of confirm that my analysis, do I see the same thing in their sort of assessment of the two-lane alternative, and they reached the same conclusion I did, which is although this architecture meets the overall system needs of USB persistence and has the benefit of guaranteeing a dedicated path to the head unit for CarPlay, the fact that it requires two upstream ports has drawbacks. And they go on. And really those drawbacks are what are driving a lot of that $3.28 difference. 15:51:01 15:51:03 15:51:05 15:51:10 15:51:13 15:51:15 15:51:19 15:51:22 15:51:25 15:51:28 15:51:30 15:51:33 15:51:36

Q. Okay. 15:51:39

What did you do next for the 15:51:40

single-lane alternative? 15:51:42

A. So the next alternative is I looked 15:51:44

at the single-lane alternative and costed it 15:51:47

out. The same thing, I sort of went and 15:51:49

looked at the bill of materials for the single 15:51:52

lane FlexConnect or Athens solution and 15:51:57

compared it to what would change if you did it 15:52:01

with Sandia, and that provided the cost 15:52:04

savings of 63 cents. 15:52:09

Q. Does this single-lane alternative 15:52:12

provide all of the functionality of the 15:52:15

patented invention like the two-lane 15:52:17

alternative does? 15:52:19

A. No, that's -- so it's not surprising 15:52:19

that the cost difference is lower because 15:52:22

we've now left out one key component or one 15:52:23

key feature, which is the feature that the 15:52:27

U.S. OEMs were kind of putting their foot down 15:52:31

and saying they had to have; that's 15:52:34

persistence. If you don't need persistence, 15:52:35

then you can do this solution without Sandia 15:52:39

at the 63 cent cost differential. 15:52:42

Q. So without the patented technology, you could either have single lane or CarPlay with persistent USB, but with two lanes, or single-lane CarPlay without persistent USB; is that fair? 15:52:47 15:52:50 15:52:53 15:52:56 15:53:00

A. That's really the trade-off. You've got a cost penalty in either sense, and with respect to the value of the technology, a cost advantage in either sense. But if you are going to fully value that persistence that the multi-host controller provides, you really have to look at the value of that difference to the 3.28, because the 63 cent difference is given up on the persistence. 15:53:00 15:53:04 15:53:07 15:53:10 15:53:12 15:53:16 15:53:17 15:53:20 15:53:24

Q. Now, I noticed -- 15:53:26

MR. GRAY: Well, let's get to the next slide, please. 15:53:28 15:53:29

BY MR. GRAY: 15:53:29

Q. What is this slide showing? 15:53:32

A. So this is just to close this off with what Microchip had to say about it. This is their assessment, and it says, "When CarPlay is active, the other port can be used for charging, but no USB data functions are 15:53:33 15:53:35 15:53:38 15:53:41 15:53:44

possible. This port is considered to have non persistent USB functionality." 15:53:47 15:53:49

So they are acknowledging that the drawback of the Athens one-lane solution is that you have to give up on the persistence. 15:53:52 15:53:54 15:53:58

Q. Now, I notice that both of your cost comparisons are based around Microchip parts rather than Aptiv parts. Why is that? 15:54:02 15:54:04 15:54:07

A. Well, a couple of reasons. One is that the hubs that are being built with this largely have Microchip parts in them. The one question would be, you know, I'm comparing to Sandia and why not compare it to the Boston chip? Well, the Boston chip was never sold. They used it internally. So I don't have a market-based price to use to compare the cost of that. 15:54:09 15:54:13 15:54:16 15:54:19 15:54:23 15:54:28 15:54:30 15:54:33 15:54:38

So I went with Sandia as the cost comparison because we do have a market tested price for that. That selling price that I used was what the chip actually is sold for to the tune of eight million units. So it is a real market-based price. 15:54:39 15:54:43 15:54:47 15:54:49 15:54:54 15:54:56

Q. So in your analysis, are you 15:54:57

essentially assuming that Aptiv could have sold the Boston chip for the same price that Microchip sold the Sandia chip? 15:54:59 15:55:01 15:55:05

A. I guess I -- in a roundabout way, one could suggest that I am, but since its functionality -- I don't know whether they really could have sold it for as much because I think there's some evidence that it didn't perform as well, but I'm essentially comparing what the market would see as the difference in the cost. 15:55:08 15:55:12 15:55:16 15:55:18 15:55:20 15:55:22 15:55:29 15:55:32

Q. So by using the Sandia chip, though, does that mean that you are being conservative? 15:55:33 15:55:36 15:55:38

A. Yes. I mean, if I had used Aptiv's cost to make the Boston chip, these cost savings would be much higher because the Boston solution, I think there's evidence that it only costs them something like 1.50 to make that chip. 15:55:39 15:55:42 15:55:47 15:55:49 15:55:52 15:55:57

So if we went back to those two prior charts and substituted $1.50 in place of the 2.63, the implied value of this technology would go up by more than a dollar, in both 15:55:57 15:56:00 15:56:04 15:56:08

comparisons. 15:56:12

Q. Can you summarize for the jury what you concluded from your evaluation of the patented multi-host technology relative to these two non-infringing alternatives? 15:56:15 15:56:17 15:56:20 15:56:25

A. Yes. So this table that I have prepared here really just kind of puts it all in one place. The patented multi-host solution is over on the right and it checks the boxes, as it were, in terms of the key system requirements or considerations. It's single lane, it's USB persistent, it provides USB persistence and it provides CarPlay on any port. So that was what the U.S. OEMs were demanding. And it is the lowest cost way to get that. 15:56:27 15:56:28 15:56:31 15:56:35 15:56:37 15:56:40 15:56:45 15:56:48 15:56:52 15:56:55 15:56:57

The other two alternatives are either 63 cents more expensive or 3.28 more expensive, but we can see with either of them, there is essentially a trade-off. You have to give up on one of the two key requirements of the OEMs. 15:56:59 15:57:01 15:57:06 15:57:09 15:57:12 15:57:16

So there's nothing that replicates the features of the patent, but for a 63 cent, 15:57:17 15:57:19

the 3.28 cent difference, you can go out there with the next best alternative, giving up on one of those key requirements. 15:57:24 15:57:27 15:57:30

Q. Did you look to see how the conclusions you reached compared to the conclusions that Aptiv reached when making a similar comparison? 15:57:31 15:57:33 15:57:34 15:57:37

A. I did. We go back to that same document where they were sort of pitching this to the PACE jury when there were finalists for that award. They actually had a table that summarized their own assessment, and they essentially reached the same conclusions I did. 15:57:38 15:57:41 15:57:43 15:57:48 15:57:50 15:57:53 15:57:56

If you look at the vehicle system cost line, they say that the dual role hub, which is the one that uses the multi-host controller, is lowest cost. The port reversal hub, the middle column, that's the single-wire solution using Athens. That has a moderate vehicle system cost compared to the lowest. And the two USB paths, that's the two-wire solution, is the highest vehicle system cost. 15:57:56 15:57:59 15:58:01 15:58:03 15:58:08 15:58:10 15:58:14 15:58:17 15:58:20

So they -- they didn't put numbers 15:58:23

on it, but they got the same -- not just directionally, but the same relative assessment that I did. 15:58:25 15:58:31 15:58:33

Q. What about the feature comparison other than just costs in this table? 15:58:34 15:58:36

A. So the feature comparison, same thing, really they recognized the same drawback, which is the single-wire port reversal hub, you have to give up on persistence, and that the two wire one does give you persistent USB, but you drive the cost way up. 15:58:38 15:58:41 15:58:43 15:58:46 15:58:49 15:58:54 15:58:58

Q. Have we now discussed the most important factors that you considered in determining the outcome of the hypothetical negotiation? 15:59:00 15:59:03 15:59:04 15:59:06

A. We have. 15:59:07

Q. And were you able to use this information to arrive at a royalty rate that you thought was reasonable? 15:59:08 15:59:09 15:59:12

A. I -- I did, yes. 15:59:13

Q. Can you summarize for the jury what that is? 15:59:15 15:59:17

A. So I took this information and went 15:59:18

back to that table, kind of imagined all right, now I'm back at the table with the two parties, SMSC/Microchip on one side and Unwired and later it would become Aptiv on the other side. And I thought about what would be a reasonable negotiating range. 15:59:21 15:59:24 15:59:26 15:59:30 15:59:32 15:59:34

One side is going to say, I want you to pay a lot; the other side will say, I don't want to pay much, so where are they going to be in that range. 15:59:38 15:59:39 15:59:42 15:59:44

I first bound that range by these cost savings. Clearly Aptiv's or Unwired's customers, they could go and say, we're not going to take a license and we will offer our customers alternative solutions, but those solutions are going to be -- you have to give up on cost savings of taking the license. So that bounds it between 63 cents and $3.28 as the measure of the value of this multi-host technology. 15:59:45 15:59:48 15:59:54 15:59:56 15:59:59 16:00:03 16:00:05 16:00:09 16:00:15 16:00:17

I next said, all right, we've got that range. We don't -- we're not sure what the customers are going to do in terms of that trade-off, but I think the midpoint of that 16:00:18 16:00:21 16:00:23 16:00:26

range is a reasonable sort of stake in the ground for the parties to agree that the implied cost savings, or the potential cost savings, by using the Sandia technology is around $1.95. So that sets the range at a midpoint of the range. 16:00:29 16:00:31 16:00:36 16:00:41 16:00:47 16:00:52

The next thing is to give life to this competitive dynamic that SMSC over there on the right-hand side of the table knows that when it licenses Unwired, it's going to give up the opportunity to sell some chips. So I put the profit per chip from Sandia and Athens on here as a consideration. Certainly it's something that would get talked about at that negotiation. 16:00:54 16:00:57 16:01:01 16:01:03 16:01:05 16:01:09 16:01:17 16:01:22 16:01:25

And the last thing that I need to consider is this timing issue that -- we're talking about a license in 2014 where the parties know that Unwired has a -- is going to be first to market and that Microchip is not going to get their product on the market until the middle of 2017. 16:01:26 16:01:29 16:01:32 16:01:35 16:01:41 16:01:45 16:01:48

So that changes the bargaining dynamic of it when Microchip isn't going to be 16:01:50 16:01:54

on the market until the middle of 2017. 16:01:58

So what I did to give life to that 16:02:01

is to say the first portion, if we think about 16:02:03

the length of this license, it's going to be 16:02:07

from 2014 to now, essentially, the beginning 16:02:09

of 2022. 16:02:14

And I look at how much of that 16:02:15

time period is Microchip in direct 16:02:16

head-to-head competition with Sandia and 16:02:21

Unwired/Aptiv chip and what percentage of it 16:02:25

is just Aptiv or Unwired is out there ahead of 16:02:28

Microchip. They're still getting the benefits 16:02:32

of the invention, but they're not necessarily 16:02:35

causing direct competition because Microchip 16:02:38

is not ready to enter the market. 16:02:41

If I weight those two time periods 16:02:44

between the low end of this range and the 16:02:47

midpoint of the cost savings, I get $1.40. 16:02:49

And considering all of the evidence in this 16:02:55

case and the Georgia-Pacific factors, I 16:02:56

concluded that that would be a reasonable 16:03:00

royalty that compensates Microchip, or SMSC, 16:03:01

for the value that is being generated, because 16:03:08

we can see, who get -- they are then able to 16:03:12

supply a chip that has persistent USB that could be worth as much as 3.28, and they're able to enter the market on this accelerated timeframe for $1.40 unit, so I think that's a reasonable royalty. 16:03:14 16:03:17 16:03:21 16:03:24 16:03:29

Q. So now that we have the reasonable royalty of $1.40 per unit, what do we do with it? 16:03:30 16:03:31 16:03:35

A. So in the context of this negotiation for a license, we would take that -- the $1.40, and if we were only talking about a reasonable royalty, you would take 44.9 million chips and multiply it by $1.40 per unit and you would get 62.9 million in royalties. 16:03:36 16:03:40 16:03:45 16:03:48 16:03:50 16:03:57 16:04:02

Q. Would that amount, in your opinion, fully compensation Microchip's for Aptiv's infringement? 16:04:05 16:04:07 16:04:11

A. In my opinion, it would not fully compensate them, because this is just that royalty over the whole time period. It doesn't compensate them for the direct loss of profits from the chip sales that I have concluded were lost because of the 16:04:11 16:04:14 16:04:16 16:04:19 16:04:23 16:04:25

infringement.
Q. Do you have a slide that shows what the damages would be if lost profits are awarded?
A. Yes. So kind of putting this on the timeline, the lost profits pick up in the middle of 2017 when Sandia is fully on the market. Those lost profits are 70.9 million and that prior period at $1.40 per unit is 13.6 million.
Q. Have we now been through all of your opinions?
A. Yes, I think we can now just sort of summarize, sum up, and all I'd need to do is add those two numbers together. This is back to the slide that we looked at before.
In total, I think the adequate compensation for the infringement, which is a combination of reasonable royalty and lost profits, is 84.4 million.
Q. So to be clear, in your opinion, you believe the jury should decide in this case that total damages are 84.4 million?
A. Yes.

MR. GRAY: Pass the witness. 16:05:33

MR. WIENER: I will try to be 16:05:44

brief. Don't let the binder deceive you. 16:05:46

- - - 16:05:46

CROSS-EXAMINATION 16:05:46

- - - 16:05:49

BY MR. WIENER: 16:05:49

Q. Good afternoon, Dr. Becker. 16:05:49

A. Good afternoon. 16:05:50

Q. Nice to see you again. My name is 16:05:51

Eric Wiener and I represent Aptiv. 16:05:53

Dr. Becker, you are a professional 16:05:55

economic consultant; right? 16:05:58

A. Yes. 16:05:59

Q. And that's what you've been doing for 16:05:59

the last 25 years? 16:06:01

A. At least that long. I've been 16:06:02

working as a economic or management consultant 16:06:04

for many more years than that, but I have been 16:06:08

doing this sort of economic consulting for 16:06:11

25 years. 16:06:14

Q. And clients pay you to testify at 16:06:14

trials like this; right? 16:06:17

A. That's a big part of what they do. 16:06:19

It's not the only thing I do. I get paid to evaluate other things as well. But my typical project is a project like this one where there's at least a possibility that I might need to show up and explain my opinions to a jury. 16:06:22 16:06:25 16:06:28 16:06:32 16:06:34 16:06:38

Q. So yes, clients pay you to testify at trials like this? 16:06:38 16:06:42

A. Yes. Client -- I don't do anything for, you know -- I used to do a lot of pro bono work, but I do get paid for what I do and I testify at trials. 16:06:42 16:06:45 16:06:49 16:06:51

Q. And you testify on a wide range of types of cases; right? 16:06:52 16:06:54

A. Yes. The economic issues that I look at and my toolkit that I use cuts across a pretty dramatic swath of types of industries. 16:06:56 16:06:58 16:07:02

Q. And that includes cases involving intellectual property? 16:07:06 16:07:08

A. Yes. So about half of all my work is intellectual property and the other half is valuing other types of things. 16:07:10 16:07:14 16:07:16

Q. And you testify in cases involving antitrust; right? 16:07:18 16:07:21

A. Yes, I do a good bit of antitrust work. 16:07:22 16:07:26

Q. And other kinds of commercial disputes? 16:07:26 16:07:28

A. Yes, contract disputes, all sorts of things. 16:07:28 16:07:32

Q. You testify in a lot of different industries? 16:07:32 16:07:34

A. Yes. 16:07:34

Q. Okay. 16:07:35

In giving your opinion on damages, you're making certain assumptions; right? 16:07:35 16:07:37

A. Absolutely. 16:07:39

Q. And your opinions are only as good as the assumptions on which they are based? 16:07:40 16:07:42

A. That's fair. 16:07:44

Q. Okay. 16:07:45

You don't have any opinions in this case about whether or not Aptiv's accused product infringes the asserted claims; right? 16:07:45 16:07:48 16:07:50

A. That's correct. 16:07:53

Q. And you're assuming, for the purposes of your damages analysis, that Athens product meets each and every limitation of at least 16:07:53 16:07:55 16:07:58

one of the asserted claims; right? 16:08:01

A. Yes. 16:08:04

Q. And if that assumption is wrong, then there are no damages; right? 16:08:05 16:08:07

A. Yes, that's correct. 16:08:08

Q. Okay. 16:08:09

Damages -- 16:08:10

A. It's correct that there are no damages. 16:08:10 16:08:12

Q. Correct. The damages number would be zero? 16:08:12 16:08:15

A. You wouldn't even get to the damages question. The way that this works is that you wouldn't even go to the damages question. It wouldn't be zero; you just wouldn't get to damages. 16:08:15 16:08:17 16:08:22 16:08:24 16:08:26

Q. No damages? 16:08:26

A. Yes. 16:08:29

Q. And patent claims are either valid or invalid; right? 16:08:29 16:08:33

A. Absolutely. 16:08:34

Q. And that's something you have experience with; right? 16:08:35 16:08:36

A. With the validity analysis? 16:08:38

Q. Sure. You testified as a damages expert in cases where the patents were found to be invalid; correct? 16:08:42 16:08:44 16:08:47

A. Oh, yeah, yeah, certainly. Like I said, I get involved in that end of the case. In practically every patent case I've worked on, there is one side, the defense is challenging the validity of the patents and there have been some cases where they don't get to the damages question because the patent was found to be invalid. 16:08:49 16:08:52 16:08:54 16:08:57 16:09:01 16:09:04 16:09:05 16:09:08

Q. Now, you don't have an opinion about whether or not the asserted claims in this lawsuit are valid; right? 16:09:10 16:09:12 16:09:14

A. That's right. No opinion at all. 16:09:16

Q. And just like with infringement, if the jury finds that all of the asserted claims are invalid, no damages; right? 16:09:18 16:09:20 16:09:23

A. Right. 16:09:26

Q. So your testimony about damages only matters if the jury finds that one of the asserted claims, 23, 24 or 25, is both infringed and valid? 16:09:28 16:09:30 16:09:33 16:09:37

A. Correct. 16:09:39

Q. Okay. 16:09:40

Now, you were here and you 16:09:40

listened to Mr. Obolsky testify yesterday; 16:09:42

correct? 16:09:45

A. Yes. 16:09:45

Q. And you heard him say, in the context 16:09:45

of supplying parts to Aptiv and the other 16:09:47

parts of the industry, that they consider this 16:09:50

to be a narrow quarrel between Microchip and 16:09:53

Athens; right? 16:09:55

A. I heard him talk about if you look at 16:09:57

Microchip, the breadth of their business and 16:10:02

the breadth of the business they do with 16:10:06

Aptiv, I do recall him -- I don't know if he 16:10:08

used the word exactly narrow, but it's clearly 16:10:11

a small part of the overall relationship. 16:10:16

Q. That's why we have a court reporter 16:10:18

here and we'll find out in the transcript. 16:10:20

But you also saw evidence that at 16:10:22

the time, in 2015, when Microchip was deciding 16:10:25

whether or not to develop the Sandia product, 16:10:28

it wasn't sure that it was worth investing 16:10:31

one-and-a-half or $2 million to develop that 16:10:34

product; right? 16:10:37

A. I do recall that evidence, that they, given what they -- where they thought the OEM demands were and what they thought about the USB -- the issue of accepting a non-standard solution, given those risks, they -- I think they were questioning whether it was worth the investment. 16:10:38 16:10:41 16:10:45 16:10:47 16:10:53 16:10:56 16:10:58

Q. Okay. 16:10:58

And yet despite the fact that they didn't think it was necessarily worth one-and-a-half to $2 million to invest in, in fact, Mr. Obolsky clarified and said this is a narrow quarrel, Microchip was asking for almost $85 million in damages; right? 16:10:59 16:11:02 16:11:04 16:11:07 16:11:10 16:11:13

A. Yes. 16:11:16

Q. Okay. 16:11:16

And that's not all; right? That's only damages up through what, November of last year? 16:11:17 16:11:19 16:11:21

A. Correct. 16:11:22

Q. Right. 16:11:22

It's still running; right? 16:11:23

A. I would assume so. I think that Aptiv is still selling the chips that I have 16:11:25 16:11:27

to assume are infringing. 16:11:30

Q. So 85 million and counting in damages? 16:11:31 16:11:34

A. Yes. 16:11:34

Q. Now, in your lost profits analysis, I'd like to start with that part of your opinion, you were looking at what would have happened if Aptiv had not sold dual role hubs that had the Boston 2 chip in it; right? 16:11:35 16:11:37 16:11:40 16:11:42 16:11:45

A. Right. 16:11:48

Q. And you reconstruct the market to find out what would have happened if it had not made those accused infringement sales; right? 16:11:48 16:11:50 16:11:52 16:11:56

A. Right. 16:11:56

Q. Okay. 16:11:56

And you were saying that if Aptiv had not made the sales of its modules with the Boston 2 chip, Microchip would have made sales of its Sandia chip starting in the third quarter of 2017; right? 16:11:57 16:11:58 16:12:01 16:12:04 16:12:07

A. They would have made more sales of Sandia than they did. 16:12:10 16:12:12

Q. Okay. 16:12:14

A. They did make sales -- they started to make sales in the third quarter of 2017, actually in the second quarter. I'm saying they would have made more sales. 16:12:14 16:12:17 16:12:20 16:12:22

Q. And it's your opinion that they would have made additional unit sales of a Sandia chip for each and every dual role hub that Aptiv sold in the real world; right? 16:12:24 16:12:26 16:12:30 16:12:34

A. Yes. 16:12:36

Q. Starting in the third quarter of 2017? 16:12:36 16:12:40

A. Yes. 16:12:40

Q. Now, you don't offer a lost profits calculation for the time period before the third quarter of 2017; right? 16:12:41 16:12:45 16:12:47

A. Correct. 16:12:49

Q. And your lost profits opinion is based solely on how much additional profits Microchip would have made on the Sandia multi-host chip; correct? 16:12:49 16:12:51 16:12:55 16:12:57

A. Yes. 16:12:59

Q. Okay. 16:12:59

You don't have -- your $84 million total damages number did not include -- let me 16:12:59 16:13:03

strike that. 16:13:06

Your lost profits calculation did not include a calculation of lost profits based on the Athens chip; correct? 16:13:07 16:13:09 16:13:11

A. Correct. 16:13:13

Q. And it's your opinion, in fact, that there are no lost profits damages for sale of the Athens chip; correct? 16:13:14 16:13:18 16:13:21

A. Well, I looked at the question of whether there was evidence of lost sales in that earlier time period, and the conclusion that I reached is there was quite a bit of evidence that there were Athens sales that were lost because it was being displaced, but the sort of -- in that world, the solution that would have been provided in lieu of the Boston chip was not an interchangeable substitute because it didn't have the same features, and so there's not as much clarity about the -- meeting the exact demands that the OEMs had. 16:13:24 16:13:28 16:13:33 16:13:36 16:13:39 16:13:44 16:13:47 16:13:53 16:13:58 16:14:03 16:14:05 16:14:08 16:14:14

And so even though there was quite a bit of evidence that there was impact on Microchip sales, I concluded, to be 16:14:15 16:14:17 16:14:21

conservative, that I would not sort of go all the way to the step of quantifying lost profits in that time period. 16:14:24 16:14:26 16:14:29

Q. Okay. 16:14:30

Your lost profits number is not based on lost profits for Athens? 16:14:31 16:14:33

A. It is not based on that, but it is not an affirmative statement that there was absolutely no impact on Microchip's business in that prior time period. There clearly was. But I think it's more appropriate to compensate that earlier time period with a reasonable royalty. 16:14:35 16:14:37 16:14:39 16:14:41 16:14:44 16:14:46 16:14:49

Q. And your consideration of the Athens profits and the Athens sale, that was part of your reasonable royalty analysis; correct? 16:14:50 16:14:53 16:14:55

A. Yes. 16:14:59

Q. So it's your opinion that if Aptiv, and at the time Unwired, had not released its solution to CarPlay, that Microchip still would have chosen to develop and ultimately develop the Sandia chip; right? 16:14:59 16:15:01 16:15:05 16:15:08 16:15:12

A. Yes. 16:15:14

Q. Okay. 16:15:14

And so this raises the question of whether Microchip actually would have done that, and to answer that, you studied the record evidence; correct? 16:15:15 16:15:17 16:15:19 16:15:21

A. Yes, and -- yeah, I mean, that was one of the things I did. I studied the record and also had numerous discussions with Mr. Obolsky. 16:15:23 16:15:26 16:15:28 16:15:31

Q. And you talked to Mr. Obolsky about this very question; right? 16:15:32 16:15:34

A. Yes. 16:15:35

Q. And you asked him hey, if Unwired had not come out with its solution, would Microchip still have developed the Sandia chip; right? 16:15:36 16:15:38 16:15:42 16:15:43

A. Yes. 16:15:44

Q. And he told you that if Unwired hadn't come out with the Boston 2, Microchip would have developed the Sandia chip even faster; right? 16:15:44 16:15:46 16:15:49 16:15:51

A. Yes. Yes. Under the circumstances that I have to assume are present back there, that we don't undo the rest of the marketplace. We leave Chrysler in, whatever 16:15:52 16:15:55 16:15:58 16:16:02

that was, in 2014, I think, saying we absolutely -- you know, whatever your doubts about whether we're going to launch persistent USB, we're going to want it. That's what we are insisting on. You don't undo that; you just undo the fact that Unwired is selling the product that meets that demand. 16:16:06 16:16:12 16:16:15 16:16:20 16:16:22 16:16:24 16:16:27

And in that circumstance, Mr. Obolsky told me they would have still come out with the chip they did, and because they sort of had an open playing field, they would have accelerated the development of it. 16:16:29 16:16:30 16:16:36 16:16:39 16:16:42

Q. So they would have come out with it even faster without Unwired? 16:16:43 16:16:45

A. Well, they wouldn't -- you know, come out with it, I'm still assuming that it launches at the same time. There are certain development milestones in the process of coming up with the chip to be ready to ship in quantity that he says they would have accelerated. The actual launch is still -- it's third quarter of 2017. 16:16:48 16:16:52 16:16:55 16:16:57 16:17:01 16:17:05 16:17:06 16:17:10

Q. Now, you said you watched Mr. Obolsky testify yesterday; right? 16:17:12 16:17:15

A. Yes. 16:17:16

Q. And you heard from him that back in 2014, Microchip was expecting to win the contracts with The Big 3 automakers with their Athens solution; right? 16:17:16 16:17:18 16:17:21 16:17:24

A. Yes. 16:17:26

Q. With the FlexConnect? 16:17:26

A. Yes. 16:17:28

Q. But Unwired actually won; right? 16:17:29

A. Yes. 16:17:31

Q. And that's why Microchip decided to develop Sandia? 16:17:31 16:17:33

A. Well, you know, to some extent, you can -- I think the reality is that they decided to develop it because they -- that's the point at which they had clarity of the demands of The Big 3 automakers as to what they were going to buy. And before that, they were -- we don't think they are going to do a non-standard solution and other things. 16:17:35 16:17:40 16:17:43 16:17:48 16:17:51 16:17:54 16:17:58 16:18:01

The clarity came when Chrysler made it clear what their requirements were. 16:18:05 16:18:07

Q. Okay. 16:18:10

And you heard Mr. Obolsky be asked 16:18:11

what was Microchip's reaction when it found out that its customer, Aptiv, had now become a competitor? And you heard him respond that as you saw earlier, as anyone would, when you lose, we looked at okay, what's it take, what are their needs, what didn't we meet and what do we have to do to win the next one. 16:18:13 16:18:15 16:18:19 16:18:21 16:18:24 16:18:26 16:18:29

You heard him say that; right? 16:18:31

A. Yes. 16:18:33

Q. You mentioned the Panduit factors and some of the things that the patentholder has to demonstrate to get lost profits. One of them is you have to show that there aren't non-infringing alternatives out there; correct? 16:18:34 16:18:37 16:18:39 16:18:42 16:18:44 16:18:47

A. That there are no acceptable non-infringing alternatives that would replicate the features that were actually sold by the infringer. 16:18:47 16:18:50 16:18:52 16:18:55

Q. And that includes considering other options Aptiv, itself, could have brought to market to compete; right? 16:18:57 16:18:59 16:19:02

A. If there were other options that would allow it to provide a single-lane 16:19:04 16:19:06

persistent USB solution without infringing, I think I'd definitely -- I did address that question. 16:19:10 16:19:13 16:19:15

Q. Right. 16:19:15

And it was your conclusion that Aptiv had no acceptable non-infringing alternatives; correct? 16:19:16 16:19:18 16:19:21

A. That is my conclusion with respect to an alternative that would allow them to meet the demand that they met with the infringing chip. 16:19:24 16:19:27 16:19:30 16:19:34

Q. They couldn't meet the demand without using the '243 Patent; right? 16:19:34 16:19:36

A. That's what I have assumed and it's what the evidence of there still, seven years in, being only a two-supplier marketplace tells me. 16:19:39 16:19:41 16:19:45 16:19:47

Q. And as support for that opinion, you talked to Microchip's technical expert, Mr. Zatkovich; right? 16:19:48 16:19:51 16:19:53

A. In part, that's one of the pieces of support that I have. 16:19:54 16:19:57

Q. Okay. 16:19:58

And based on his opinion and based 16:19:58

on your own analysis, you determined that you couldn't have an acceptable alternative unless it had three key requirements; right? 16:20:02 16:20:06 16:20:09

A. You couldn't have an alternative that would have met the sort of -- been interchangeable with the sale that was -- the infringing sale that was made without three key features. 16:20:13 16:20:16 16:20:21 16:20:24 16:20:26

Q. Right. 16:20:27

And those three key features are single-lane connection; right? 16:20:28 16:20:30

A. Yes. 16:20:31

Q. CarPlay enabled on all the downstream ports? 16:20:32 16:20:35

A. Yes. 16:20:36

Q. And persistent USB; right? 16:20:36

A. Yes. 16:20:38

Q. Now, your basis for concluding that you couldn't achieve those three things without using the '243 Patent, for that you relied on Mr. Zatkovich; right? 16:20:38 16:20:41 16:20:43 16:20:47

A. In part, yes. 16:20:51

Q. What else did you rely on to come up with a technical opinion about how you could 16:20:53 16:20:55

meet these three features? 16:20:58

A. Well, that's the only technical 16:20:59

opinion I'm relying on, but I'm also relying 16:21:01

on the market evidence of, you know, what the 16:21:05

market is telling us about the -- the chips on 16:21:11

the marketplace that are able to satisfy that 16:21:15

single-lane persistent USB on any downstream 16:21:21

port CarPlay. 16:21:25

And to date, and there's lots of 16:21:28

evidence sort of throughout here this last 16:21:30

six-year time period that suggests that 16:21:33

there's only two solutions that meet that -- 16:21:37

that provide those three key features, the 16:21:39

Boston chip based hubs that Aptiv sells and 16:21:41

the Sandia based hubs or chips that -- that 16:21:46

Microchip sells. 16:21:50

Q. Apart from the fact that there are 16:21:50

only those two solutions, in your opinion, on 16:21:52

the market, I want to understand what the 16:21:55

basis is for your opinion that you needed to 16:21:58

use the invention in the '243 Patent to 16:22:01

achieve these three requirements? 16:22:05

A. It is the -- apart from the market 16:22:08

evidence, it is Mr. Zatkovich's technical 16:22:13

opinion that he was not aware of any technical way to make -- to provide those three key features without -- in a way that would not infringe the '243 Patent. 16:22:16 16:22:19 16:22:23 16:22:26

Q. Okay. 16:22:28

And when he had that conversation with you, he told you that you couldn't achieve these requirements without using the '243 Patent in general; right? 16:22:29 16:22:31 16:22:33 16:22:36

A. Well, I mean, I was having a conversation with him about the '243 Patent; we weren't down at the level of individual claims. It was just look, here's what's accused, do you know of any way to provide single-lane CarPlay with persistent USB without this patent. 16:22:41 16:22:44 16:22:48 16:22:50 16:22:54 16:22:59 16:23:02

Q. Okay. 16:23:03

And you watched Mr. Zatkovich testify this morning; correct? 16:23:04 16:23:07

A. I did. 16:23:08

Q. And you heard him testify that he considered claim 1 of the '243 Patent to be representative for the purposes of his analysis; correct? 16:23:09 16:23:11 16:23:14 16:23:16

A. You know, I heard -- I heard that colloquy back and forth. I frankly didn't understand where it was going or what the significance of it was, so that's a -- the technical question about whether what he meant by representative, I heard it. I can tell you the answer is yes, I heard it, but I didn't understand it. 16:23:17 16:23:19 16:23:22 16:23:23 16:23:27 16:23:30 16:23:34 16:23:36

Q. That's fair. 16:23:37

For all you know, you could achieve those three requirements that The Big 3 car companies wanted by using the invention that's disclosed in claim 1 of the '243 Patent; right? 16:23:38 16:23:39 16:23:43 16:23:46 16:23:49

A. I have no idea. That's -- I don't have the technical opinion of that and I'm not qualified to offer that opinion. 16:23:49 16:23:52 16:23:55

Q. Out of your swim lane? 16:23:57

A. It is out of my swim lane. Looking at the market evidence to see whether anybody else has come out with this, has been able to crack this nut, I am qualified to look at that. 16:23:59 16:24:01 16:24:03 16:24:06 16:24:09

Q. And that's nonspecific to the 16:24:09

asserted claims either; right? 16:24:11

A. Well, it is in a way in that I have to assume, for the purposes of my evaluation of that market evidence, that one of the two suppliers of the only suppliers that we have of actual solution that's being sold in the marketplace, I have to assume that the Aptiv one is actually practicing at least one of the asserted claims. It's an assumption I have to make, but I have to make that in order to give some relevance to the market evidence. 16:24:13 16:24:17 16:24:21 16:24:25 16:24:28 16:24:31 16:24:34 16:24:38 16:24:41 16:24:44

Q. But you don't have to assume that they couldn't achieve those three requirements without using those claims; right? 16:24:46 16:24:48 16:24:50

A. No, I don't have to assume that. I think the market is telling us about how unique this solution is, but I certainly am relying on Mr. Zatkovich for the specific issue about non-infringing alternatives with respect to the sort of wiring around the claim. 16:24:52 16:24:54 16:24:58 16:25:00 16:25:04 16:25:07 16:25:10

Q. And his opinion is not specific to the claims with respect to non-infringement alternatives? 16:25:10 16:25:12 16:25:15

A. You'd have to ask him that. 16:25:16

Q. Now, Microchip is a large company; 16:25:17

right? 16:25:19

A. Yes. It's -- I think -- define 16:25:20

large. I deal with a lot of companies that 16:25:25

are quite a bit bigger than Microchip, but 16:25:26

it's not a small company. 16:25:28

Q. It's got related entities, for 16:25:29

example, right? 16:25:32

A. Yes. 16:25:32

Q. There are wholly-owned subsidiaries; 16:25:33

right? 16:25:35

A. Yes. 16:25:35

Q. You understand that when you're 16:25:36

calculating lost profits, it's your obligation 16:25:39

to calculate the lost profits that were lost 16:25:41

by the patent-holding entity; right? 16:25:44

A. It's by the entity that is the 16:25:47

plaintiff in the case. It's more of a legal 16:25:49

question as to whether that entity has 16:25:54

standing to bring the claim that it's 16:25:56

bringing. 16:25:59

But I have to assume, for the 16:25:59

purposes of my analysis, that the -- that the 16:26:04

plaintiff in this case is the proper plaintiff. 16:26:08 16:26:11

Q. Sure. 16:26:11

And I'm not asking about standing or the right to sue; I'm talking about calculating lost profits. And for that inquiry, you have to figure out how many -- what the calculation of profits are that Microchip Technology Incorporated, the patent-holding entity here, would have made if Aptiv had not infringed; right? 16:26:12 16:26:13 16:26:15 16:26:17 16:26:20 16:26:25 16:26:27 16:26:30

A. I believe that Microchip Technology Inc. is the plaintiff here, and so my damages analysis with respect to lost profits is an analysis that says Microchip -- Microchip Technology Inc. lost this amount of money. 16:26:32 16:26:33 16:26:36 16:26:40 16:26:44

Q. Okay. 16:26:46

Microchip Technology Inc., the patent-holding entity, is not entitled to profits that would have gone to related entities in the but-for world; right? 16:26:47 16:26:49 16:26:51 16:26:54

A. You know, it is straying a little bit into a legal question about -- I know there's issues about inextricable flow if the profits 16:27:00 16:27:06 16:27:08

from one entity will flow up to sort of a higher entity in the chain and you've got a parent who is suing and the sub loses the money and the profits are part of that overall corporate structure; that's really a legal question. 16:27:11 16:27:14 16:27:17 16:27:20 16:27:24 16:27:25

I certainly assumed -- I quantified lost profits, and it's up to the lawyers to argue whether those are compensable for this particular plaintiff. 16:27:25 16:27:28 16:27:30 16:27:33

Q. And you don't know whether Microchip Technology Incorporated, itself, makes all the sales of the Sandia chips, do you? 16:27:34 16:27:39 16:27:41

A. Well, all of them worldwide, I don't know. It's my understanding from talking to Mr. Obolsky that Microchip Technology Inc. would have been the entity that made the sales here in the U.S.; for example, the sales of Sandia that could have been made to Aptiv if Aptiv hadn't developed its own chip and essentially stopped buying chips in this particular space from -- from Microchip. 16:27:43 16:27:46 16:27:49 16:27:53 16:27:54 16:27:59 16:28:02 16:28:06 16:28:08

Q. So sales that would have been made in the United States would have gone to Microchip 16:28:11 16:28:13

Technology Incorporated; right? 16:28:16

A. At least of this particular product, 16:28:16

that's my understanding. 16:28:19

Q. Do you know whether Microchip 16:28:19

Technology Incorporated would have made sales 16:28:22

to hub makers that are outside the United 16:28:23

States? 16:28:28

A. Of the non -- of the lost profits 16:28:28

chips or just in general? 16:28:31

Q. Of the lost profits chips. 16:28:34

A. I haven't assumed they would. At 16:28:36

least the evidence is clear to me that it 16:28:38

would have still been in this, you know, if 16:28:42

you win, we win. We would have supplied the 16:28:45

Sandia chip to Aptiv. And so the question of 16:28:50

whether some other entity somewhere else might 16:28:54

have made a sale, I haven't considered that. 16:28:59

Q. I'd like to talk to you about the 16:29:01

reasonable royalty portion of your opinion. 16:29:04

Now, you used a hypothetical 16:29:05

negotiation to determine the reasonable 16:29:07

royalty; right? 16:29:09

A. Yes. 16:29:10

Q. That means you try to figure out what 16:29:10

Aptiv and Microchip or Unwired and SMSC would have agreed to if they sat down and negotiated a license; right? 16:29:12 16:29:17 16:29:19

A. Yes. 16:29:20

Q. And for the purpose -- the purpose of the reasonable royalty is to fairly compensate the patentholder for the accused infringement use of the invention; right? 16:29:20 16:29:23 16:29:25 16:29:29

A. Right. 16:29:30

Q. And it's supposed to take into account the parties' views of the market at the time? 16:29:31 16:29:33 16:29:35

A. Yes. 16:29:35

Q. Okay. 16:29:35

And it's supposed to take account of the parties' views of the potential benefit of using the invention? 16:29:37 16:29:39 16:29:41

A. Yes. 16:29:42

Q. Okay. 16:29:43

It's not intended to compensate Microchip for Aptiv's own contributions in developing the dual role hub; right? 16:29:43 16:29:47 16:29:50

A. That's correct. 16:29:52

Q. And it's not intended to compensate 16:29:52

Microchip for solutions that were available in the prior art; right? 16:29:55 16:29:59

A. I think that's fair. 16:30:00

Q. Okay. 16:30:01

And it's not intended to compensate Microchip or to make up for Microchip's bad business decisions; right? 16:30:01 16:30:03 16:30:05

A. That's correct. 16:30:07

Q. Now, speaking of Aptiv's own contributions, you are aware that Aptiv won the PACE Award for the dual role hub? 16:30:08 16:30:10 16:30:12

A. Yes, I am. 16:30:15

Q. Because it solved what Automotive News described as the, "Vexing problem of how to let the iPhone connect to infotainment center and become the host"? 16:30:16 16:30:19 16:30:21 16:30:24

A. Well, because it solved that, I think in the -- I have to assume that it solved that with the Microchip '243 Patent, but I don't think the PACE Award people were aware of that. They -- they awarded this innovation award to Delphi for solving the vexing problem that I have to assume, and if there is a finding of infringement, is a problem that was 16:30:26 16:30:29 16:30:33 16:30:42 16:30:44 16:30:49 16:30:53 16:30:56

actually solved by the '243 Patent. 16:30:58

Q. Now, in forming your opinions, you 16:31:01

didn't talk to Dr. Levy, did you? 16:31:04

A. No. 16:31:06

Q. And he is Microchip's invalidity 16:31:06

expert? 16:31:10

A. He is. 16:31:10

Q. You didn't talk to him about how 16:31:11

claim 23 is different from the prior art? 16:31:13

A. No. 16:31:14

Q. You didn't ask anybody about that? 16:31:15

A. No. 16:31:16

Q. In your report, you say that the '243 16:31:17

Patent describes a shared USB device that can 16:31:20

be simultaneously configured and accessed by 16:31:23

two or more USB hosts using the multi-host 16:31:25

capable device controller; right? 16:31:29

A. I'll take your word that those are 16:31:31

the words I used in my report, but it sounds 16:31:33

like what I said. 16:31:36

Q. You caught me reading. 16:31:37

And you thought that was a fair 16:31:38

summary of the claims in terms of your 16:31:40

analysis for evaluating the entities; right? 16:31:43

A. It's fair at the level of me not being any of the technical experts in this case. I last practiced engineering more than 30 years ago, so I -- it's a mere layman's assessment of or description of what I understood the technology to be. 16:31:47 16:31:50 16:31:53 16:31:56 16:32:02 16:32:05

Q. And do you have any basis to conclude that any of those things that you used to describe the scope of the invention are not present in claim 1 of the '243 Patent? 16:32:07 16:32:09 16:32:12 16:32:14

A. I have no opinion or basis one way or the other. 16:32:17 16:32:21

Q. And when you talked to Mr. Zatkovich, he didn't tell you that claim 1 is invalid, did he? 16:32:21 16:32:23 16:32:26

A. No. 16:32:26

Q. Well, and you don't say anything in your report about the PTAB, the Trial -- the Patent Trial and Appeal Board decision anywhere in your report; right? 16:32:27 16:32:31 16:32:35 16:32:37

A. Correct. 16:32:39

Q. Your report doesn't analyze the impact of the findings of the PTAB on the remaining claims? 16:32:40 16:32:41 16:32:44

A. It does not. 16:32:45
Q. No one at Microchip told you that 16:32:46
some of the claims had been found invalid? 16:32:48
A. I don't recall anybody telling me 16:32:51
that. They may have; I just -- it wasn't 16:32:53
relevant to my analysis. 16:32:56
Q. And so you don't have any basis for 16:32:57
offering an opinion about the difference 16:32:59
between the claims that were invalidated and 16:33:00
the claims asserted in this case; right? 16:33:02
A. Correct. 16:33:04
Q. In terms of what they're worth; 16:33:06
right? 16:33:07
A. Correct. 16:33:07
Q. Let's talk about the timeline a 16:33:08
little bit in this case. 16:33:10
MR. WIENER: Mr. Glass, would you 16:33:11
put up slide 1. 16:33:12
BY MR. WIENER: 16:33:16
Q. So you're aware that Unwired began 16:33:17
developing the technology of the Boston 2 chip 16:33:20
around 2013; right? 16:33:23
A. Yes. 16:33:25
Q. And it successfully tested that chip 16:33:25

in March of 2014? 16:33:28

A. Yes. 16:33:30

Q. And that's the date you use for your hypothetical negotiation? 16:33:30 16:33:32

A. Yes. 16:33:33

Q. Okay. 16:33:34

And then it won contracts with The Big 3 automakers later in 2014; right? 16:33:34 16:33:37

A. Yeah. That arrow on the chart fits with my recollection. It was before the end of the year. 16:33:42 16:33:47 16:33:49

Q. And after Aptiv was awarded those contracts with The Big 3, Microchip decided to begin developing a solution similar to Unwired; right? 16:33:50 16:33:53 16:33:55 16:33:58

A. I believe that the development -- you know, I don't know exactly when the development began, but the substantial part of it was underway in 2015. 16:34:01 16:34:04 16:34:07 16:34:11

MR. WIENER: May I approach, Your Honor? 16:34:16 16:34:18

THE COURT: Yes. 16:34:18

BY MR. WIENER: 16:34:37

Q. Dr. Becker, I have handed you what's 16:34:37

been marked as Exhibit 264. 16:34:40

(Whereupon, Trial Exhibit 264 was introduced.) 16:34:40

MR. WIENER: We offer it into evidence. 16:34:42

MR. GRAY: No objection. 16:34:43

THE COURT: Okay. 16:34:46

BY MR. WIENER: 16:34:48

Q. Dr. Becker, down at the second email -- 16:34:50

MR. WIENER: And actually, Mr. Glass, if you could put it up. 16:34:51

BY MR. WIENER: 16:34:52

Q. The second email on the first page, it is an email from Mitch Obolsky and it's an email to Ganesh Moorthy who was the CEO of Microchip at the time; correct? 16:34:53

A. Yes. 16:34:55

Q. And this is an email that's dated December 9th, 2014. 16:34:57

And down in the one, two, three, four, fifth paragraph of that email that starts, "We are debating" -- 16:35:00

A. Yes. 16:35:04

16:35:05

16:35:05

16:35:07

16:35:09

16:35:11

16:35:13

16:35:14

Q. It says, "We are debating the merits of developing an Unwired-like solution." 16:35:14 16:35:17

This is in December of 2014? 16:35:20

A. Yes. 16:35:22

Q. Okay. 16:35:22

MR. WIENER: So, back to the timeline, Mr. Glass. 16:35:23 16:35:25

BY MR. WIENER: 16:35:28

Q. Shortly after Aptiv won the contracts with The Big 3, Microchip considered an Unwired-like solution and then decided to ultimately develop that competing chip in January of 2015; correct? 16:35:32 16:35:35 16:35:40 16:35:42 16:35:45

A. Yeah. That's -- this is reminding me of the timeline. 16:35:47 16:35:51

So here on December 9th, it seems like they've got some pieces of what would become Sandia in the pipeline, but they haven't made the decision to add the multi-host controller solution. So I think your timeline is not -- I can agree with that. 16:35:52 16:35:54 16:35:57 16:36:01 16:36:04 16:36:08

Q. Thank you. 16:36:12

And you read Mr. Obolsky's deposition testimony in this case; correct? 16:36:13 16:36:16

A. I did. 16:36:18

Q. And he testified that in 2014, 16:36:18

Microchip didn't think that providing 16:36:22

persistent USB as a feature was critical to 16:36:24

winning contracts; correct? 16:36:28

A. Yeah. I think there's more context 16:36:31

to it than just saying that it was critical. 16:36:33

It was the whole discussion about their view 16:36:36

of whether the OEMs would accept non-standard 16:36:39

solutions and whether -- what Apple would 16:36:47

allow. But I know -- I do recall the 16:36:51

testimony where, at the time, they didn't 16:36:53

think it was that critical. 16:36:56

Q. And you've seen evidence that once 16:36:57

Microchip heard about the Unwired solution 16:37:03

later in 2014, even by October, they didn't 16:37:06

think it was possible to achieve the solution 16:37:09

that Unwired had come up with; correct? 16:37:12

A. I would say not possible while 16:37:17

remaining standards compliant. 16:37:20

Q. Well -- 16:37:22

A. I haven't seen anything in the record 16:37:23

that says that they thought it was literally 16:37:24

technically infeasible. All of that is 16:37:27

impossible stuff that I recall is within the context of it's not possible to do this and remain compliant with the standard. 16:37:32 16:37:34 16:37:37

MR. WIENER: Mr. Glass, could you put up Exhibit 62 that's in evidence, please. 16:37:40 16:37:42

BY MR. WIENER: 16:37:46

Q. So this is -- and if you can go to page 2 of this. This is an email from Chris Behal, who is an engineer in the sales group at Microchip, and he mentions that -- they're talking about Chrysler and he says down towards the bottom of the email, "How is that possible to provide that functionality without an iPhone allowing it? I have no idea. Is it possible they know something about CarPlay that we don't? I don't think so, but I can't figure out why they want this either." 16:37:46 16:37:49 16:37:51 16:37:57 16:38:00 16:38:01 16:38:04 16:38:07 16:38:11 16:38:12 16:38:14

He doesn't mention compliance with USB, does he? 16:38:16 16:38:18

A. Not with USB. He's -- he does mention compliance with Apple and we're talking about CarPlay, so it's -- when I talk about can you do it in a standard -- in a compliant way, it is the USB standard and 16:38:19 16:38:23 16:38:26 16:38:30 16:38:33

staying within the lanes that Apple is going to make you play within. 16:38:37 16:38:40

Q. Well, let's go back to the timeline then and we'll split the difference by saying that in addition to not knowing how it's possible to do it this way, Microchip thought -- go to the next slide, please, Mr. Glass -- that it was not compliant. 16:38:41 16:38:43 16:38:46 16:38:48 16:38:51 16:38:53

And that even at this point, once Microchip learned about the Unwired solution, so they knew that it was possible to provide something that it was not critical to the OEMs to have a noncompliant -- or a compliant solution or a noncompliant solution, still then Microchip was debating whether or not to fund a competing chip; correct? 16:38:55 16:38:58 16:39:01 16:39:04 16:39:09 16:39:12 16:39:15 16:39:17

A. Correct. 16:39:19

Q. Okay. 16:39:20

And in early January, they were considering whether or not to invest two-and-a-half to 3 million -- or one-and-a-half to $2 million to develop that; correct? 16:39:20 16:39:25 16:39:27 16:39:29 16:39:31

A. Well, I think they were considering 16:39:34

it. Just when you put -- label it not worth it, they clearly kicked off the development, so they -- right around where you've got that arrow, they made a decision that it was worth it because they did start the development. 16:39:35 16:39:40 16:39:43 16:39:46 16:39:48

Q. But up until that point, they didn't think it was worth it, at least enough to kick off the development; right? 16:39:50 16:39:52 16:39:54

A. I think in terms of committing the resources to it at that point, given what they knew. But I wouldn't -- it's your chart, you can put it there. You can draw whatever conclusion you want. I don't think that the economic evidence sort of supports that all the way up to the day before they kicked off the development, they thought it was not worth it. 16:39:56 16:39:57 16:40:00 16:40:04 16:40:06 16:40:09 16:40:11 16:40:14 16:40:16

Clearly before they realized that they had lost the clarity of the OEMs purchasing requirements, it was clarified for them when they lost those deals at the end of December, I think made it clear that it was worth it. So I would move your not worth it probably somewhere to the left because once 16:40:17 16:40:20 16:40:26 16:40:29 16:40:33 16:40:38 16:40:41

they lost the business, I think it became pretty clear that they needed to do something. 16:40:43 16:40:47

Q. It was losing that business that made them realize they needed to develop this chip? 16:40:49 16:40:51

A. Well, it was losing that business that made them realize that their assumptions about the OEM demands and the compliance issues were incorrect. 16:40:53 16:40:54 16:40:57 16:41:00

Q. And so looking at this timeline, the hypothetical negotiations happen right around there, in March of 2014; correct? 16:41:02 16:41:05 16:41:09

A. Yes. 16:41:11

Q. Right -- and let's talk a little bit about the hypothetical negotiation. 16:41:12 16:41:15

MR. WIENER: Mr. Glass, can you go to the next slide? We have our own table. It looks a little different, I suppose, than their table, but the same concept, just have similar graphics concepts here. 16:41:17 16:41:19 16:41:21 16:41:22 16:41:25

BY MR. WIENER: 16:41:26

Q. I'd like to talk a little bit about the Aptiv side of the negotiating table, the thing that would have been motivating them to push for a lower royalty. 16:41:27 16:41:29 16:41:31 16:41:34

So first, you'd agree that Aptiv spent millions of dollars to develop the Boston 2 chip; correct? 16:41:35 16:41:37 16:41:40

A. No doubt. Well, Unwired did, Aptiv didn't. 16:41:41 16:41:45

Q. And that it developed that despite the fact that there was a risk that the OEMs wouldn't accept a noncompliant solution, in your words; correct? 16:41:45 16:41:47 16:41:50 16:41:52

A. Yes. 16:41:53

Q. Okay. 16:41:54

And they also would point out the fact that they had their own innovations that went into developing that product; correct? 16:41:54 16:41:56 16:41:59

A. No doubt there were some innovations in there, yes. 16:42:01 16:42:04

Q. And on the Microchip side of the table, we know that at least in March of 2013, 2014, they didn't think it was possible to have a solution that would work the way that Apple wanted it to; right? 16:42:05 16:42:07 16:42:12 16:42:15 16:42:18

A. I think it's fair in March of 2014. We -- in this negotiation, of course, remember, we're dealing the cards face up and 16:42:21 16:42:24 16:42:27

things that Unwired knows that it was not telling Microchip in the context of the hypothetical negotiation, like the information that the carmakers were going to accept, at least one carmaker was going to accept a non-standard solution. That would be known. 16:42:31 16:42:35 16:42:37 16:42:43 16:42:47 16:42:49

So the didn't think it was possible, I think we have to modify that a little bit in the context of this particular table. 16:42:54 16:42:54 16:42:56 16:42:58

Q. And this is your point about the cards being laid up, face up? 16:42:58 16:43:00

A. Face up. 16:43:01

Q. They are all face up? 16:43:02

A. Right. 16:43:03

Q. And at the end of 2014, the cards in terms of what the carmakers wanted and the compliance issues and the possibilities, those cards were face up? 16:43:04 16:43:07 16:43:09 16:43:11

A. Yes. 16:43:12

Q. Okay. 16:43:12

Let's talk a little bit about your cost savings methodology. Now, you calculate a royalty using what you determined is the 16:43:13 16:43:16 16:43:19

costs that you can save by using the patented invention; correct? 16:43:23 16:43:26

A. It is the -- in a sense, it's the comparison of the patent-practicing solution to the next best alternative and isolating the things that will change if you couldn't use the patent-practicing solution. 16:43:28 16:43:31 16:43:37 16:43:40 16:43:43

Q. And to calculate your cost savings, you don't just use one next best alternative, you use two; correct? 16:43:45 16:43:48 16:43:51

A. Yes. It's -- there are definitely two. 16:43:52 16:43:54

Q. Okay. 16:43:55

So it's not -- it's not the next best; it's one of the best next best solutions? 16:43:55 16:43:57 16:44:00

A. Well, it's -- in order to actually -- because you've got to give stuff up to triangulate on what the real value is, you can't see that without looking at both of these alternatives. 16:44:00 16:44:04 16:44:07 16:44:10 16:44:12

Q. Okay. 16:44:13

Now, it's your opinion that between these two, and these are the two sort 16:44:14 16:44:18

of cost comparisons you did, right, the one wire on the left and the two wire on the right? 16:44:20 16:44:23 16:44:24

A. Yes. 16:44:25

Q. And you determined the one wire, comparing the cost of the patent solution to the one-wire architecture gives you a cost savings of 63 cents; right? 16:44:25 16:44:28 16:44:31 16:44:33

A. Yes. 16:44:35

Q. And using the two-wire solutions in the comparison, it's $3.28; right? 16:44:35 16:44:38

A. Right. 16:44:41

Q. But you confirmed, did you not, that the customers were generally demanding a single-lane solution; correct? 16:44:42 16:44:45 16:44:48

A. As one of the requirements was single lane. They were also demanding some other features as well, but one of the solution -- one of the demands was or desires was for a one-wire solution. 16:44:50 16:44:54 16:44:56 16:45:00 16:45:05

Q. And you agree that ultimately, Aptiv would have pursued or would have essentially forced the marketplace to accept in that period of time a one-wire solution; correct? 16:45:06 16:45:10 16:45:12 16:45:15

A. Ask it again. I lost you. 16:45:18

Q. Sure. 16:45:19

You agree that Aptiv would have pursued or would have essentially been forced by the marketplace to accept, if, in the period of time that Sandia was -- between when Boston 2 was launched and Sandia, I have assumed that the one-wire solution is what they would have pursued, in effect, and would have been required that its customers accept; correct? 16:45:20 16:45:22 16:45:25 16:45:28 16:45:30 16:45:32 16:45:35 16:45:38 16:45:40

A. Yes. In that period of time before Sandia came out, given that you've got either what they can ask the market to do and what the market is going to accept. 16:45:41 16:45:43 16:45:49 16:45:52

You really have to ask the question, is the market going to hold firm on persistent or -- the persistence requirement or is it going to hold firm on the one wire and give up on persistence? And the market evidence tells me that they are going to give up on persistence. 16:45:55 16:45:56 16:46:00 16:46:03 16:46:06 16:46:09 16:46:10

And this, in part, tells you why, is that the persistence, there's a lot of 16:46:15 16:46:16

value in being able to do persistence in an inexpensive way. 16:46:21 16:46:23

Q. Okay. 16:46:24

Now let's look at how you do your calculation. 16:46:25 16:46:27

MR. WIENER: So, Mr. Glass, go to the next slide. 16:46:28 16:46:29

BY MR. WIENER: 16:46:30

Q. You take the cost savings from these two approaches, you take the average; right? 16:46:31 16:46:33

A. Yes. 16:46:36

Q. Which is 1.95? 16:46:37

A. Yep. 16:46:39

Q. And then you apply a discount to take into account the market realities and the fact that Aptiv would have been first to the market; correct? 16:46:39 16:46:42 16:46:43 16:46:45

A. Unwired and Aptiv would have been first to the market, and really because of what you just said in that prior question, which is that the marketplace reality for the period of time when Sandia wasn't on the market is one that favors the -- the market would have said look, we're going to give up 16:46:47 16:46:48 16:46:51 16:46:53 16:46:57 16:47:00 16:47:05

on persistence because it's too expensive to get it. 16:47:07 16:47:10

Q. Okay. 16:47:10

And that works out to roughly a 28 percent discount of that average number; right? 16:47:11 16:47:13 16:47:17

A. If you've done the math. I didn't get there by taking a discount off of the 1.40. How I got there is by taking a weighted average of $1.95 for the period of time once Sandia -- once the marketplace didn't have to compromise on persistence and weighting it with the period of time that the marketplace reality was that they would have to give up on persistence. 16:47:20 16:47:22 16:47:25 16:47:28 16:47:33 16:47:36 16:47:39 16:47:42 16:47:44

Q. You agree it worked out to, in terms of the numbers, about 28 percent? 16:47:45 16:47:48

A. I don't have a calculator. I'll trust -- 16:47:49 16:47:51

Q. Want to check it? 16:47:51

A. I'll trust your math. 16:47:52

Q. Okay. Thank you. 16:47:53

So I'd like to go through what the numbers would be like if we decide that the 16:47:55 16:47:57

two-wire solution is not actually the next best alternative; get rid of that solution. Your starting point for the cost savings would be 63 cents; right? 16:48:00 16:48:02 16:48:06 16:48:08

A. If it's just gone? 16:48:10

Q. Yeah. 16:48:12

A. Well, mechanically it might be, but then there would be a missing piece of the whole value of the technology and a missing piece of the realities of what Aptiv had to gain from the benefit of the invention, which is you've taken away the persistence USB feature completely out of the analysis, which is undeniably a feature that is in the Aptiv chip that's infringing. 16:48:14 16:48:19 16:48:21 16:48:23 16:48:29 16:48:31 16:48:34 16:48:37 16:48:42

Q. If the jury decides that the next best alternative to the Boston 2 solution would have been using a one-wire alternative, in terms of valuing the cost savings, that would be your starting point; correct? 16:48:43 16:48:45 16:48:48 16:48:51 16:48:53

A. If they decide that that's the next best alternative for literally the entire time period all the way even after Sandia comes out? 16:48:56 16:48:59 16:49:02 16:49:04

Q. Yes. 16:49:06

A. I mean, if they conclude that, that would ignore the fact that Sandia was on the market offering the persistence feature. 16:49:07 16:49:12 16:49:14

Q. And if we apply the 28 percent discount, because in this negotiation, Aptiv still would have been first to market in that market reality that you considered; right? 16:49:16 16:49:18 16:49:21 16:49:23

A. Well no, in this -- in the hypothetical that you are painting here, there would be no discount because we're already at this, what I'll call sort of barebones -- we're only valuing the portion of the patented technology that wasn't yet on the market. 16:49:25 16:49:26 16:49:29 16:49:31 16:49:37 16:49:40

Q. Okay. 16:49:48

But if you did take the 28 percent, you'd end up -- if you didn't take the 28 percent reduction, you'd end up with 45 cents, and if you applied that to the sales that Microchip accuses of infringing, you would get a total damages outcome of 20 million; right? 16:49:49 16:49:51 16:49:53 16:49:58 16:50:00 16:50:03 16:50:06

A. I trust your math. 16:50:06

The logic of the prior step you 16:50:08

made is the 28 percent discount doesn't make sense if you -- if you're applying 63 cents across the whole time period. 16:50:10 16:50:12 16:50:15

MR. WIENER: And then finally, if we could bring up Exhibit 36, which is already in evidence. 16:50:16 16:50:17 16:50:20

BY MR. WIENER: 16:50:20

Q. Dr. Becker, Exhibit 36 is an email in the January 2015 timeframe. You've seen this before; correct? 16:50:31 16:50:36 16:50:38

A. Yes. 16:50:39

Q. And this was an email where Microchip had not yet decided to pursue development of the Sandia chip and the threshold question for them was to decide whether or not the market opportunity would be worth 15 to 20 million; right? 16:50:40 16:50:43 16:50:47 16:50:51 16:50:54 16:50:57

A. That's what this said. 16:50:57

MR. WIENER: I have no further questions. 16:51:00 16:51:01

MR. GRAY: No questions, Your Honor. 16:51:03 16:51:04

THE COURT: All right. You may step down. 16:51:04 16:51:06

(Whereupon, the witness was excused.) 16:51:06 16:51:08

THE COURT: This seems like as good a place as any to break for the weekend. 16:51:14 16:51:15

I am going to give you all the same caution I have been, but with a little bit more emphasis than I do sometimes because you're going to be gone for a couple days. 16:51:18 16:51:20 16:51:22 16:51:26

You are going to talk to a lot of people that are not here that are going to want to know what you're doing. And so I'm just going to remind you that it's important. Other than to tell them you're serving on a jury, that's about as much as you should say. 16:51:28 16:51:30 16:51:32 16:51:34 16:51:36 16:51:38

Don't tell them about the case, don't tell them what you're hearing. Any details are likely to invoke questions, thoughts, things like that, that can affect your thinking about the case here. Again, you can blame me for that if anyone presses you. 16:51:41 16:51:42 16:51:44 16:51:48 16:51:50 16:51:53

The other caution I'm going to give you, and it's really important, is do not go looking up anything about the case. Do not investigate it, don't Google it, just steer 16:51:56 16:51:58 16:52:00 16:52:03

clear of it. Use the weekend to just forget about it, basically, and don't worry about it and then come back on Monday. 16:52:08 16:52:11 16:52:14

So we'll start again Monday at 9 o'clock. Just for your planning purposes, as we look ahead, I know that -- I think a couple of you may have commitments Monday afternoon to get to. That works out well because I actually have to spend a little bit of time with the lawyers going over some legal things to get the case to conclusion. So we'll plan to sort of wrap up at the point where we would normally take our mid-afternoon break on Monday, so in the range of 3:15 to 3:30, in that ballpark, to get you out of here. But then we'll plan for full days after that later in the week as we try to move the case forward. 16:52:16 16:52:19 16:52:22 16:52:25 16:52:27 16:52:30 16:52:32 16:52:34 16:52:37 16:52:39 16:52:42 16:52:46 16:52:49 16:52:52 16:52:54

If people have issues, you can speak up and let me know on scheduling. Okay. I think that's everything. Everybody have a good weekend and we'll see you back here Monday for a 9:00 a.m. start. 16:52:55 16:52:58 16:53:02 16:53:04 16:53:07

(Whereupon, the jury was excused 16:53:09

from the courtroom.) 16:53:11

THE COURT: Okay. 16:53:32

You guys can all be seated. I don't know if there's any particular housekeeping we need to tackle before we break for the weekend. 16:53:35 16:53:37 16:53:38 16:53:41

MR. WIENER: If there are any issues that arise over the weekend, should we email you by 9:00 p.m. on Sunday? 16:53:44 16:53:46 16:53:48

THE COURT: Yeah, just email and if you email me before that, that's helpful. Doesn't have to be 9:00 p.m. Sunday. 16:53:51 16:53:52 16:53:55

MR. WIENER: It's sometimes helpful to have a deadline. 16:53:58 16:53:59

THE COURT: Yes. So certainly you can get it to me by then, but it can be issues, it can also be if you reached any compromises on language on the jury instructions, let me know that, too. 16:54:00 16:54:01 16:54:04 16:54:06 16:54:08

We will, in the interim, try to get you a draft, hopefully today; it could be tomorrow morning. 16:54:12 16:54:14 16:54:18

MS. DURIE: Perfect. And you're thinking the charge conference would be Monday 16:54:19 16:54:20

afternoon? 16:54:21

THE COURT: That's my expectation. 16:54:22

I want to use the time obviously 16:54:24

so we stay on case, and I do want to let our 16:54:26

juror go so that she can pick up her kids and 16:54:28

not lose her. So that would be my 16:54:31

expectation. 16:54:32

MS. DURIE: Okay. 16:54:33

THE COURT: Okay. 16:54:34

And then I guess I'll see you 16:54:37

Monday unless anything pops up. Okay? 16:54:39

MS. DURIE: Thank you. 16:54:41

THE COURT: All right. Everybody 16:54:41

have a good weekend. Stay safe. 16:54:43

THE COURT CLERK: All rise. 16:54:46

(Whereupon, the Court adjourned 16:54:52

proceedings at 4:55 p.m.) 16:54:55

C E R T I F I C A T E

I do hereby certify that I am a Notary Public in good standing, that the aforesaid testimony was taken before me, pursuant to notice, at the time and place indicated; that said deponents were duly sworn to tell the truth, the whole truth, and nothing but the truth; that the testimony of said deponents was correctly recorded in machine shorthand by me and thereafter transcribed under my supervision with computer-aided transcription; that the transcript is a true and correct record of the testimony given by the witnesses; and that I am neither of counsel nor kin to any party in said action, nor interested in the outcome thereof.

WITNESS by hand and official seal this 8th day of April, 2022.

_____
Notary Public

Job No. 5162169