

# UNITED STATES INTERNATIONAL TRADE COMMISSION

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In the Matter of

Investigation No.

COMPONENTS FOR CERTAIN

337-TA-1349

ENVIRONMENTALLY PROTECTED LCD

DIGITAL DISPLAYS AND PRODUCTS

-----X

## OPEN SESSIONS

Pages: 1113 through 1398 (with excerpts)

Place: Washington, D.C.

Date: October 11, 2023

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## HERITAGE REPORTING CORPORATION

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1 UNITED STATES INTERNATIONAL TRADE COMMISSION

2 Washington, D.C.

3 Before the Honorable MaryJoan McNamara

4 Administrative Law Judge

5

6 -----X

7 In the Matter of Investigation No.

8

9 COMPONENTS FOR CERTAIN 337-TA-1349

10 ENVIRONMENTALLY PROTECTED LCD

11 DIGITAL DISPLAYS AND PRODUCTS

12 -----X

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14 International Trade Commission

15 500 E Street, SW

16 Washington, D.C.

17

18 Evidentiary Hearing

19 Wednesday, October 11, 2023

20 Volume V

21

22 The parties met pursuant to notice of the

23 Administrative Law Judge at 9:37 a.m. Eastern.

24

25 Reported by: Linda S. Kinkade RDR CRR RMR RPR CSR

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Petitioner Manufacturing Resources International, Inc.  
Exhibit 1014 - Page 2 of 158

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25 \*\*\* Index appears at end of transcript \*\*\*

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Petitioner Manufacturing Resources International, Inc.  
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1 P R O C E E D I N G S

2 (In session at 9:37 a.m.)

3 JUDGE MCNAMARA: Good morning, everyone. Please  
4 be seated.

5 So I did receive your email about time, and I do  
6 recognize, based on the comments that I made yesterday, that  
7 we will probably use the full hearing day. I was  
8 anticipating that you would make closing remarks, that you  
9 all let me know that before the hearing. So this, by the  
10 way, will be only the second time in eight years that the  
11 parties have chosen to make closings. And, of course, I was  
12 routinely used to doing that when I was in practice.

13 So I am looking forward to it. So we have the  
14 whole day.

15 All right. Mr. Flasck, are you ready to go?

16 THE WITNESS: Yes.

17 RICHARD FLASCK,

18 having been previously duly sworn or affirmed  
19 on his oath, was thereafter examined and testified further  
20 as follows:

21 JUDGE MCNAMARA: Mr. Reddy?

22 MR. REDDY: Your Honor, I just want to check if  
23 there are some preliminary matters we need to address this  
24 morning.

25 JUDGE MCNAMARA: Sure.

1 MR. SERATI: Good morning, Your Honor. David  
2 Serati on behalf of Complainants. We conferred with other  
3 counsel this morning. What we're going to try to do is get  
4 both yesterday's and today's exhibits in right before  
5 closing statements, to consolidate things.

6 JUDGE MCNAMARA: Okay. That makes sense. That  
7 is nice and efficient.

8 MR. SERATI: All right. Thank you, Your Honor.

9 JUDGE MCNAMARA: Thank you, Mr. Serati.

10 MR. REDDY: Your Honor, again, good morning.

11 JUDGE MCNAMARA: Good morning.

12 MR. REDDY: Srikanth Reddy on behalf of the  
13 Complainants. We have one housekeeping matter to raise,  
14 which is we have the physical exhibit, which is one of the  
15 domestic industry products. Would Your Honor like to keep  
16 that?

17 JUDGE MCNAMARA: You should just submit it into  
18 Box.

19 MR. REDDY: Okay. So it's the physical exhibit,  
20 so --

21 JUDGE MCNAMARA: Oh, it's the physical exhibit.

22 MR. REDDY: Yes, so it's the 46-inch display.

23 JUDGE MCNAMARA: Right. What was I thinking?  
24 Why don't you label it, and we'll find out at lunchtime  
25 whether it will go right into Dockets, or whether it will be

1 taken up to my office.

2 MR. REDDY: Okay.

3 JUDGE MCNAMARA: Let me check, because things  
4 have changed. I know we've been back from the pandemic for  
5 a while, but people aren't offering physical exhibits, which  
6 is interesting.

7 MR. REDDY: If I can offer a suggestion. For the  
8 1331 investigation, we had many more physical exhibits, and  
9 what the parties did was they took five-or-so pictures of  
10 them and submitted those --

11 JUDGE MCNAMARA: Good idea.

12 MR. REDDY: -- and agreed to make them available  
13 here in D.C., if the Court wanted to.

14 JUDGE MCNAMARA: That is a great idea. I will go  
15 along with that one.

16 MR. REDDY: Thank you, Your Honor.

17 CROSS-EXAMINATION (resumed)

18 BY MR. REDDY:

19 Q. Good morning, Mr. Flasck.

20 A. Good morning.

21 Q. If you recall, when we broke yesterday, we were  
22 talking about the Takahashi prior art reference. Do you  
23 remember that?

24 A. I remember that.

25 Q. Mr. Smith, if I could have JX-1, please. In

1 particular, go to JX-1 page 6, please.

2 Mr. Flasck, JX-1, again, is the '117 patent.

3 And, Mr. Flasck --

4 Mr. Smith, if I could have the Background of the  
5 Invention section, which is column 1, lines 18-51, please.

6 Mr. Flasck, you see we've highlighted the  
7 Background of the Invention section?

8 A. It's not highlighted on my screen, but --

9 Q. Sorry. That we have excerpted the Background of  
10 the Invention section from the '117 patent.

11 A. All right.

12 Q. And, in particular, I'd like to direct your  
13 attention to starting at line 32.

14 A. All right.

15 Q. Would you please read lines 32 to 42 to yourself  
16 and tell me when you're finished.

17 A. Silently?

18 Q. Yes.

19 A. Oh. All right.

20 Q. So, Mr. Flasck, you would agree that in lines 32  
21 to 42 the applicants specifically identified Japanese patent  
22 Unexamined Publication No. 2006-162641 as part of the  
23 related art, correct?

24 A. Yes.

25 Q. And lines 32 to 42 include a description of that

1 Japanese prior art reference, correct?

2 A. Yes.

3 Q. Thank you, sir. Let's take a look at JX-4,  
4 please, which is the prosecution history for the '964  
5 patent, which is the predecessor to the '117 reissue.

6 Mr. Flasck, you recall we talked a little bit  
7 about this file history yesterday, correct?

8 A. Yes.

9 Q. If I could have page 49 in JX-4, please.

10 Mr. Flasck, this is an English translation of the  
11 abstract of the Japanese application that was referenced in  
12 the description of the related art, correct?

13 A. Yes.

14 Q. And this patent is called Plasma Display  
15 Apparatus, correct?

16 A. Yes.

17 Q. Do you see there's a section called Problem to Be  
18 Solved?

19 A. Yes.

20 Q. And the problem to be solved that's identified is  
21 efficiently dissipating heat generated in the plasma display  
22 to a rear space formed by a rear case and radiating the heat  
23 to the outside, correct?

24 A. Yes.

25 Q. And you see this application is also assigned to

1 Matsushita, correct?

2 A. I'm sorry?

3 Q. This application -- or this patent identifies the  
4 applicant as Matsushita Electric, correct?

5 A. Yes.

6 Q. And that's just like the Takahashi reference,  
7 correct?

8 A. I believe Takahashi, the applicant was  
9 Matsushita, yes.

10 Q. May I have page 51 in JX-4, please.

11 And, Mr. Flasck, this is the Japanese application  
12 that's referenced in the description of the related art as  
13 well, correct?

14 A. I don't read Japanese, but, yes, it appears to  
15 be.

16 Q. And the figure at the bottom of this page is a  
17 little fuzzy, so let's go to page 63 in JX-4. And,  
18 Mr. Smith, may I have the image on the upper left, on the  
19 left, and then the excerpt of the abstract from JX-4, page  
20 49, side by side.

21 So, Mr. Flasck, what I'm showing you on the  
22 screen is the excerpt from the abstract on page 49 of JX-4,  
23 on the right, and an excerpt of one of the figures from the  
24 Japanese prior art reference from the file history, which is  
25 on page 63 of JX-4. Do you see that?

1 A. I see that.

2 Q. Now in the abstract, under the Solution, it  
3 identifies element 16 as a circuit substrate, correct?

4 A. Yes.

5 Q. And there are air intake holes which are labeled  
6 24 at the bottom of the display, correct?

7 A. Yes.

8 Q. And there are air exhaust holes which are element  
9 28 at the top of the display, correct?

10 A. Yes.

11 Q. And as we see in the figure, air enters through  
12 the intake holes 24, correct?

13 A. Yes.

14 Q. And based on the arrows, some air moves along the  
15 left of the circuit substrate 16, correct?

16 A. Yes.

17 Q. And other air moves along the display panel,  
18 correct?

19 A. Let's see. Well, 10 is the display panel. The  
20 hash-marked area is 6. I don't see air moving along the  
21 display panel.

22 Q. Okay. So I think element 6 is called "rear case"  
23 in the abstract. Do you see that?

24 A. I see that.

25 Q. So you would at least agree that air moves along

1 the rear case to element 10 in this figure, correct?

2 A. Air moves along 6, the -- I had it there a second  
3 ago. It's called a case or something.

4 Q. Right, it's highlighted there.

5 A. Rear case 6, yes. Yes, air moves along rear case  
6 6.

7 Q. Mr. Flasck, does this reference from the file  
8 history disclose two separate cooling fluid paths?

9 A. Well, not in -- not in the sense of the '117.

10 Q. Okay. Thank you, sir. Let's move on to slide 46  
11 from your presentation, please.

12 Now in slide 46 you discuss the Karppanen '116  
13 reference, correct?

14 A. Yes.

15 Q. And you contend that Karppanen anticipates or  
16 renders obvious the asserted claims of the '117 patent,  
17 correct?

18 A. Yes.

19 Q. And you've identified the case, what you  
20 understand to be the case, in green, correct?

21 A. I identified the electronics -- yeah, the device  
22 case 12 is the rear case.

23 Q. Right. I'm talking -- let me clarify. You've  
24 identified what you consider to be the case that's element  
25 1[a] in green, correct?

1           A.   Well, 1[a], the case, refers to the combination  
2   of the front case, the display case in 10 and the rear case,  
3   device case in 12.

4           Q.   And it's your opinion that the display panel in  
5   Karppanen is mounted in the interior of the case as you have  
6   defined it on slide 46, correct?

7           A.   Yes.

8           Q.   Let's go to slide 47, please.

9                   Now in slide 47 you've identified the first  
10   cooling path in blue, correct?

11          A.   Yes, the first cooling path is in blue.

12          Q.   And as you've shown here, the first cooling path  
13   cools the rear surface of the backlight, correct?

14          A.   It's the rear -- in purple I've shown the rear  
15   surface of the display element, and I've shown in -- well,  
16   it's the black line on the left, the inner surface of the  
17   back wall of the display case in 22.

18          Q.   One type of display element that's disclosed in  
19   Karppanen is an LCD, correct?

20          A.   Yes.

21          Q.   And in a case where display element 26 is an LCD,  
22   what you've identified as the first cooling fluid path flows  
23   along the backlight, correct?

24          A.   Yes.

25          Q.   And so you understand that, in Karppanen, the

1 electronic components which control the display are located  
2 in the device case, correct?

3 A. Yes.

4 Q. And those are the electrical components that are  
5 relevant to your analysis for, say, the circuit board  
6 mounting part limitation in the '117 patent as well,  
7 correct?

8 A. Yes.

9 Q. All right. Thank you.

10 MR. REDDY: Your Honor, with your permission, I'd  
11 like to go onto the Samsung confidential record at this  
12 time.

13 (Whereupon, the hearing proceeded in confidential  
14 session.)

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1 O P E N S E S S I O N

2 BY MR. REDDY:

3 Q. Mr. Smith, you can take this slide down.

4 Mr. Flasck, switching gears, I'd like to now talk  
5 about the '311 patent.

6 If we could have slide 66 from Mr. Flasck's deck,  
7 please.

8 Mr. Flasck, you dispute that Complainants have  
9 proven that the accused products include a flow control  
10 device to impart turbulence to an airflow in the channel,  
11 correct?

12 A. Yes.

13 Q. So I'd like to start with the question of how to  
14 determine whether a turbulent condition is present. If I  
15 could have JX-2, please.

16 JX-2 is the '311 patent, and, in particular,  
17 column 9, lines 3-23.

18 And for the record, column 3 is on JX-2, page 14.

19 So starting at line 10, Mr. Flasck, the patent  
20 describes flow velocity conditions for the first channel to  
21 generate turbulent airflow, correct?

22 A. That's what it says.

23 Q. And the patent also states that it is well-known  
24 that the Reynolds number is an indication index to  
25 distinguish a laminar flow from a turbulent flow in a

1 channel, correct?

2 A. That's what it says.

3 Q. And you disagree with that statement, correct?

4 A. Yes.

5 Q. In fact, your view is that whoever wrote that  
6 didn't know what they were talking about, correct?

7 A. I think I said that in my deposition.

8 Q. And in your view, using a calculated Reynolds  
9 number to declare a flow turbulent or laminar is clearly  
10 inadequate and irresponsible, correct?

11 A. A particular Reynolds number is not sufficient to  
12 determine whether flow is laminar or turbulent.

13 Q. Well, a person skilled in the art reviewing the  
14 '311 patent would use the Reynolds number to determine  
15 whether the airflow is turbulent, correct?

16 A. I don't believe so.

17 Q. Okay. Well, let's take a look at column 9, lines  
18 21-23, which is on page JX-2.17.

19 According to the patent, flows with a Reynolds  
20 number of not more than 2300 are defined as laminar, and if  
21 the Reynolds number exceeds 2300, the flow may be considered  
22 turbulent. Do you see that?

23 A. That's what it says.

24 Q. All right. And you also disagree with this  
25 statement, correct?

1           A.    It's -- they are quoting a crude rule of thumb  
2   that was observed for circular water pipes 120 years ago.  I  
3   don't think that this statement is true or widely  
4   applicable.

5           Q.    All right.  So, Mr. Flasck, you did not do any  
6   experiments on the accused BoldVu« products to determine for  
7   yourself whether the airflow in the channel in the front of  
8   the display is turbulent, did you?

9           A.    I did not.

10          Q.    You didn't run any computer simulations, correct?

11          A.    That's correct.

12          Q.    And the flow simulations that were made by MRI  
13   and relied on by Dr. Gale were made using computational  
14   fluid dynamics software, correct?

15          A.    Yes.

16          Q.    But you haven't used computational fluid dynamics  
17   software for 15 to 20 years, correct?

18          A.    Yes, about that.

19          Q.    And, Mr. Flasck, I need to repeat one of the  
20   questions I already asked, because I understand it may not  
21   be entirely on the record.

22                My question -- do you recall I asked you about  
23   using the Reynolds number to declare a flow turbulent or  
24   laminar?

25          A.    You asked me a few questions regarding that.

1 Q. Right. Mr. Flasck, in your view, using a  
2 calculated Reynolds number to declare a flow turbulent or  
3 laminar is clearly inadequate and irresponsible, correct?

4 A. To use a calculated Reynolds number to declare a  
5 flow either laminar or turbulent, by itself, is completely  
6 inadequate.

7 Q. All right. Can we have slide 80 from  
8 Mr. Flasck's deck, please.

9 So, Mr. Flasck, in your view, Complainants need  
10 to show a Reynolds number of up to 500,000 in order to  
11 establish infringement of the '311 patent, correct?

12 A. No.

13 Q. Well, what is -- what's the requisite Reynolds  
14 number in your view that would satisfy the conditions of the  
15 '117 patent?

16 A. The most straightforward, easiest and clearest  
17 way to demonstrate turbulent flow in the channel is to  
18 actually show turbulent flow in the channel and not try to  
19 calculate some Reynolds number. That can be done easily  
20 enough with a simple experiment, but -- and the burden is on  
21 Samsung.

22 Samsung chose not to do that simple experiment  
23 and to go through an elaborate calculation of Reynolds  
24 numbers, using an inappropriate critical Reynolds number to  
25 declare a flow to be either laminar or turbulent.

1 Q. Well, so, Mr. Flasck, and I understand those are  
2 your opinions.

3 Mr. Smith, if we could remove that excerpt,  
4 please.

5 So in support of your view, you rely on  
6 information disseminated by a company called Cadence,  
7 correct?

8 A. From my own experience, and I rely on the  
9 information from Cadence.

10 Q. Right. And so you've excerpted key takeaways  
11 that appear in this Cadence material on slide 80, correct?

12 A. Yes.

13 Q. And as you highlighted, Cadence wrote, among its  
14 key takeaways, that laminar flow tends to occur in Reynolds  
15 number values below approximately 2300 for enclosed systems,  
16 correct?

17 A. It says that.

18 Q. So may I have RX-47, please.

19 So RX-47 is the blog post that's disseminated by  
20 Cadence that you're relying on, correct?

21 A. I'm sorry. I didn't rely on this picture,  
22 whatever --

23 Q. Well, the document is RX-47, sir. So my question  
24 was simply: You relied on RX-47 to support your opinions  
25 regarding turbulence, correct?

1 A. Can I see the rest of the document?

2 Q. Yes.

3 A. That's part of the document that I -- that I  
4 relied on.

5 Q. That's right, sir. And if you'd like to see the  
6 complete document, it's in the yellow binder. The document  
7 is in the yellow binder in front of you in -- under tab  
8 RX-47, if you'd like to see it.

9 A. Okay. Yes.

10 Q. And so, Mr. Flasck, we saw that you excerpted two  
11 of the key takeaways, and you cut off the third one, so I'd  
12 like to talk more about that one.

13 The third key takeaway says that CFD simulations  
14 can be used as a starting point to determine the critical  
15 Reynolds number that defines a transition to turbulent flow.  
16 Do you see that?

17 A. Yes.

18 Q. And "CFD simulation," again, stands for  
19 computational fluid dynamics simulation, correct?

20 A. Yes.

21 Q. And so Dr. Gale used CFD simulations to determine  
22 the Reynolds number, correct?

23 A. In the -- well, he did the simulation for the DI  
24 products. He used the MRI simulation results for developing  
25 his opinions for infringement.

1 Q. Thank you, sir.

2 And you're right to clarify it that way, but you  
3 would agree that Dr. Gale used the CFD simulations that were  
4 created by MRI or him or someone at his direction in order  
5 to determine the Reynolds number, correct?

6 A. He attempted to determine the Reynolds number by  
7 using those simulations.

8 Q. Right. And do you disagree with this third key  
9 takeaway that's listed by Cadence?

10 A. No, I think it's -- it's basically correct.

11 Q. All right. So, thank you, sir.

12 So there's no date on this document, correct?

13 A. Well, at the bottom there seems to be a footer  
14 with a number, which may be a year. It says 2022, but I'm  
15 not sure that that's the date that -- I'm not sure that's a  
16 date, and I'm not sure that's a date when the document was  
17 created.

18 Q. But our best guess, sitting here today, is that  
19 this document was created in 2022, do you agree?

20 A. If I had to guess.

21 Q. Is the answer yes?

22 A. Oh, yes.

23 Q. All right. Thank you, sir. Let's move on to  
24 slide 85 from your presentation, please.

25 Mr. Flasck, you also dispute that the BoldVu«

1 products include a temperature sensor to measure the  
2 temperature of air discharged from the channel, correct?

3 A. Yes.

4 Q. And you're not a source code expert, right, sir?

5 A. I've written source code. I don't consider  
6 myself a source code expert.

7 Q. Okay. May I have slide 63 from Mr. Flasck's  
8 deck, please.

9 So, Mr. Flasck, on the left is Fig. 2 from the  
10 '311 and '253 patents, correct?

11 A. Yes.

12 Q. And on the right are the asserted claims of -- in  
13 the '311 patent, at least up to claim 6, correct?

14 A. Yes.

15 Q. And you have color coordinated different features  
16 of the patented invention on your slide 63, correct?

17 A. Yes.

18 Q. Mr. Smith, if I could just have the figure on the  
19 left, please.

20 So element 32 is the cooling fan, correct?

21 A. Yes.

22 Q. And in the embodiment that you've illustrated on  
23 slide 63, the cooling fan blows air in a vertical direction  
24 across the front surface of the display panel, correct?

25 A. Looking at it here, it's not clear which

1 direction it's going in, but vertically would be -- would be  
2 a good -- a good speculation.

3 Q. And we'll get to what the patent says in a  
4 moment, Mr. Flasck, but element 52 is the temperature  
5 sensor, correct?

6 A. Yes.

7 Q. And I notice you didn't color that one in. So,  
8 Mr. Smith, can you draw a red circle around the temperature  
9 sensor, please?

10 Now in this figure, Mr. Flasck, the temperature  
11 sensor is located behind the backlight, correct?

12 A. Behind the plane of the backlight, yes.

13 Q. So in this figure the temperature sensor is  
14 measuring the temperature of air that has gone across the  
15 surface of the channel in the front of the display as well  
16 as the area behind the display, correct?

17 A. That temperature sensor, you know, measures a  
18 temperature of a confluence of air, some of which has passed  
19 by the surface of the display.

20 Q. All right. Thank you, sir. Let's take a look at  
21 what the patent says. And if I could have JX-2, page 25,  
22 please. And this is lines 53 through 57.

23 Mr. Flasck, do you see that the patent reads,  
24 "After passing through the first channel 41, the air passes  
25 through the second and third channels 42 and 43 in this

1 order. In particular, the air passing through the third  
2 channel 43 removes heat generated from the backlight unit 22  
3 and the circuit board 23."

4 Do you see that?

5 A. Yes.

6 Q. Now if we could go back for a moment,  
7 Mr. Flasck -- or, I'm sorry -- Mr. Smith, to slide 63,  
8 please.

9 Now the first channel 41 is in the front of the  
10 display, correct?

11 A. Yes.

12 Q. And the second channel 42 is at the top of the  
13 display, correct?

14 A. Yes.

15 Q. And the third channel 43 is behind the backlight,  
16 correct?

17 A. Yes.

18 Q. So, again, according to the patent, the  
19 temperature sensor 52 measures the temperature of air  
20 exiting the first channel even though it has also removed  
21 heat generated from the backlight, correct?

22 A. I believe it's clear from the patent that when it  
23 says "measure the temperature of the air discharged from the  
24 panel," it means measuring the temperature of the air as it  
25 is discharged from the panel, which would be up toward the

1 top of this figure.

2 After the air leaves the -- leaves the channel,  
3 that first channel, then there are parts -- that the  
4 molecules of the air hit different parts of the system:  
5 Sometimes the back, which would cool the air; sometimes the  
6 backlight, which may heat the air; sometimes the  
7 electronics, which may further heat the air.

8 The temperature of the air that is measured by 52  
9 is not the temperature of the air discharged from the  
10 channel.

11 Q. I appreciate your desire to restate your opinion  
12 for purposes of noninfringement, sir, but my question was  
13 just about the figure, what is the figure teaching us.

14 And so my question was: According to this figure  
15 and the disclosure in the patent that we just talked about,  
16 the temperature sensor 52 is measuring the temperature of  
17 air that has gone through the first channel 41, the second  
18 channel 42, and the third channel 43, correct?

19 A. It's measuring a confluence of air in the plenum.

20 JUDGE MCNAMARA: Mr. Flasck, I think that's a  
21 yes-or-no question.

22 A. Oh, okay. Sorry. Please, again?

23 Q. Once again, Mr. Flasck, my question was:  
24 According to Fig. 2 in the patent as well as the statement  
25 in the specification that we just discussed, temperature

1 sensor 52 is measuring the temperature of air that has  
2 passed through channel 41, which is in the front of the  
3 display, channel 42, which is at the top of the display, and  
4 channel 43, that is along the backlight.

5 A. Yes.

6 Q. Thank you. Mr. Flasck, let's move on to slide  
7 116 from your presentation.

8 Now your opinions regarding invalidity as to the  
9 '311 patent are on this slide, correct?

10 A. Yes.

11 Q. You've identified a total of five references,  
12 correct?

13 A. Yes.

14 Q. And I'd like to begin by discussing the Gromatzky  
15 reference. May I please have RX-52.2, please.

16 I'm sorry. RX-54.2. Sorry, Mr. Smith.

17 RX-54.2 is Fig. 1 from the Gromatzky patent,  
18 right, Mr. Flasck?

19 A. Yes.

20 Q. And element 26 is the LCD module?

21 A. I don't know if they call it a module or the --  
22 or the panel. This shows the panel and the backlight.

23 Q. Okay. And element 24 is the heatsink, correct?

24 A. I believe 24 is a fin.

25 Q. But it's referred to as a heatsink in the patent,

1 correct?

2 A. Yes, 24 is a heatsink. It looks like a fin to  
3 me, but yes.

4 Q. And element 32 is a fan, correct?

5 A. Yes.

6 Q. So in Gromatzky the fan circulates air in a  
7 closed loop and then transfers heat to a heatsink 24,  
8 correct?

9 A. Yes.

10 Q. May I have JX-6, please.

11 JX-6, Mr. Flasck, is the file history for the  
12 '311 patent. You reviewed this document, of course,  
13 correct?

14 A. Yes.

15 Q. May I have page 128 from JX-6, please.

16 So page 128 is European application 1 253 459,  
17 correct?

18 A. Yes.

19 Q. And this is one of the references that was  
20 disclosed by the applicants during prosecution, correct?

21 A. I believe it appears on the first page of the  
22 patent.

23 Q. Right. So that tells us that it was disclosed by  
24 the applicants during prosecution, correct?

25 A. I don't remember whether it was -- whether it was

1 found by the Patent Examiner or disclosed by the inventor,  
2 but it was -- it did appear on the face of the patent.

3 Q. Okay. Well, so, Mr. Flasck, the first listed  
4 inventor here is Gromatzky, correct?

5 A. Pardon me?

6 Q. The first listed inventor on this page is  
7 Gromatzky, correct?

8 A. Yes.

9 Q. And you see there is priority information that's  
10 listed here?

11 A. Yes.

12 Q. And the priority date listed is April 23rd, 2001,  
13 correct?

14 A. Yes.

15 Q. And the priority document is U.S. 840338,  
16 correct?

17 A. Yes.

18 Q. So that's the application number and the filing  
19 date for the patent which is RX-54 that you contend  
20 invalidates the '311 patent, correct?

21 A. The U.S. patent -- the U.S. Gromatzky patent  
22 invalidates the '117.

23 Q. Right, sir.

24 A. I'm sorry. The '311.

25 Q. Yes, sir. So my question was: The priority

1 information that's listed in the European patent reference  
2 that's part of the file history has the same priority  
3 information as the Gromatzky patent that you're relying on,  
4 correct?

5 A. I don't know. I didn't check that.

6 Q. Okay. Why don't we do that quickly.

7 Mr. Smith, if I can have RX- -- keep this on the  
8 screen -- and then have RX-54, page 1, on the right. I just  
9 need the --

10 Do you see in the patent, which is RX-54, the  
11 application number that's listed is the same as the priority  
12 information on the European patent, correct?

13 A. Yes.

14 Q. Thank you, sir.

15 Mr. Smith, if we can go back to page 128 from  
16 JX-6.

17 And you see Fig. 1 in the European application is  
18 the same figure that you've discussed and relied on in your  
19 analysis, correct?

20 A. It appears to be.

21 Q. Thank you. Mr. Smith, can I have RX-54, page 7.

22 Mr. Flasck, now I'd like to talk about some of  
23 your opinions regarding turbulence, the turbulent flow  
24 limitation, as it relates to Gromatzky.

25 May I have column 4, line 64, to column 5, line

1 20, which is on pages RX-54.7 to page 8.

2 So column 4, line 64, through column 5, line 20.

3 Do you see that at lines 6-9 on page RX-54.8 it  
4 states that laminar airflow is more efficient than turbulent  
5 airflow for moving air and transferring heat from the LCD  
6 module 26? Do you see that?

7 A. Yes.

8 Q. So you'd agree that Gromatzky is teaching that  
9 laminar airflow is preferred to turbulent airflow, correct?

10 A. I believe he is saying that in some respects  
11 laminar airflow is better than turbulent airflow. He  
12 doesn't -- I don't believe he says that it's, in general,  
13 preferred, but he does point out some advantages.

14 Q. One of the advantages is that he -- that he  
15 points out is that laminar airflow is more efficient than  
16 turbulent airflow for moving air and transferring heat from  
17 the front of the LCD module, correct?

18 A. That's what it says.

19 Q. Thank you, sir. Now every asserted claim in the  
20 '311 patent requires a temperature sensor to measure the  
21 temperature of air discharged from a channel, correct?

22 A. I'd have to look at it, but I believe that's  
23 correct, yes.

24 Q. Let's see slide 126 from your presentation,  
25 please.

1           On slide 126 from your presentation, you identify  
2 two references that you contend disclose the temperature  
3 sensor limitation, correct?

4           A.    Yes.

5           Q.    I'd like to talk briefly about the Karppanen  
6 reference.

7           May I have RX-86, page 10, please. And, in  
8 particular, let's see column 9, lines 9-18.

9           So, again, your slide 126 had an excerpt, and you  
10 cut off certain portions of the paragraph, and I want to  
11 talk about those.

12           So starting in line 9, you see it says, quote,  
13 "In an information board, according to the invention, a  
14 circulating airflow running through the device and display  
15 casing is generated with the help on which the temperature  
16 of the cases is maintained within desired limits.

17           Do you see that?

18           A.    Yes.

19           Q.    So that sentence is discussing the importance of  
20 maintaining the temperature of the casings, correct?

21           A.    It goes on to talk about the circulating airflow,  
22 and I believe that would also be consistent with an  
23 understanding that the temperature sensors are measuring air  
24 in the -- in the casing.

25           Q.    Well, the portion that we just looked at,

1 Mr. Flasck, that's talking about measuring the temperature  
2 of the casings, not of air inside the casings, correct?

3 A. That's what it says.

4 Q. All right. So starting at line 14, this is the  
5 portion that you did include in your slides. It says, "In  
6 the device and display casing are placed transducers (not  
7 shown in the figures) that measure the temperature and are  
8 connected to the control unit in the device casing of the  
9 information board."

10 Do you see that?

11 A. Yes.

12 Q. And that's the portion from Karppanen that you  
13 cited in your slides to demonstrate the temperature sensor  
14 limitation, correct?

15 A. Yes. It says, "In the device and display casings  
16 are placed transducers."

17 Q. Right. And when it says that those transducers  
18 measure the temperature, it's your opinion that that's  
19 referring to measuring the temperature of air, correct?

20 A. Yes, that would be one understanding, yes.

21 Q. Okay. Thank you, sir.

22 I'd like to move on to the '253 patent. And  
23 let's start by looking at JX-3, which is the '253 patent  
24 itself. May I have page 2, please.

25 Mr. Flasck, you were asked some questions on

1 direct about the title of this patent. Do you recall that?

2 A. I recall that.

3 Q. Specifically, that the title of this patent has  
4 the word "air conditioner" in it, correct?

5 A. It does.

6 Q. Can I have page 19 from JX-3, please. And if we  
7 could zoom in on the claims, please, Mr. Smith.

8 So claim 12 is the claim that's asserted in this  
9 case, right?

10 A. Yes.

11 Q. Claim 13 requires an air conditioner, correct?

12 A. Yes.

13 Q. Claim 13 is not asserted in the case, right?

14 A. That's correct.

15 Q. All right. Thank you, sir. Let's take a look at  
16 slide 94 from your presentation, please.

17 Now you also dispute that the accused products  
18 include a control device to control the fan to maintain a  
19 temperature of the housing, correct?

20 A. Yes.

21 Q. Now you would agree that the components inside a  
22 display can get so hot that they increase the temperature of  
23 the housing, correct?

24 A. Yes, a component inside a housing can get hot  
25 enough to heat the housing, assuming that -- assuming that

1 the cooling system doesn't prevent that.

2 Q. How about the other way around, sir? Could heat  
3 of the housing be transferred internally in an outdoor  
4 display?

5 A. The heat of the housing can be transferred?

6 Q. Inside a display that's located outside.

7 A. Again, that would depend on the configuration of  
8 the cooling system.

9 Q. Right, but it's possible that an outdoor display  
10 placed in 110-degree sun would have heat transferred from  
11 the external surface of the housing into the display,  
12 correct?

13 A. Into the display? Again, it depends on the -- on  
14 the mechanical design of the device and the cooling system.

15 Q. All right. Thank you, sir. Let's take a look at  
16 slide 151 from your deck, please.

17 Now your opinions regarding the validity of the  
18 '253 patent are set forth on this slide, correct?

19 A. Yes.

20 Q. And you've listed four references here, correct?

21 A. Well, I think three total, but four different  
22 grounds, if you will.

23 Q. Right. Thank you, sir. Thank you for that  
24 clarification. Let's take a look at slide 153.

25 Slide 153 is Fig. 9 from the Nagayama reference,

1 correct?

2 A. Yes.

3 Q. And the temperature sensor TS you've highlighted  
4 in red is what you contend discloses the claimed temperature  
5 sensor in the '253 patent, correct?

6 A. That temperature sensor could be configured to  
7 measure the air in the housing.

8 Q. So you would agree that, as depicted in this  
9 picture, it is not configured to measure the temperature  
10 inside the housing, correct?

11 A. I believe it could be in that location configured  
12 to measure the temperature of the air in the housing.

13 Q. So, sir, I'm not asking if it could be or if it  
14 could be modified to. I'm just asking whether, as depicted  
15 in this image on your slide, which is Fig. 9, is the  
16 temperature sensor measuring a temperature of air in the  
17 housing?

18 JUDGE MCNAMARA: And that's a yes or no again,  
19 Mr. Flasck.

20 THE WITNESS: Pardon me?

21 JUDGE MCNAMARA: That's a yes-or-no question.

22 A. Ask the question again?

23 Q. Is the temperature sensor on Fig. 9 in Nagayama  
24 measuring a temperature of air in the housing?

25 A. Yes.

1 Q. But the temperature sensor is attached to the  
2 display panel, correct?

3 A. No, not in the figure.

4 Q. Let's take a look at Nagayama.

5 Can I have RX-84, please, page 31. And, in  
6 particular, may I have paragraph 74, please.

7 Mr. Flasck, paragraph 74 is called Temperature  
8 Control Operation, correct?

9 A. Yes.

10 Q. And according to this section, temperature sensor  
11 TS is attached to the back of the liquid crystal display in  
12 the housing 11, correct?

13 A. It says is attached to the back surface of the  
14 liquid crystal panel.

15 Q. Right. I'm sorry. The temperature sensor TS is  
16 attached to the back surface of the liquid crystal panel 13,  
17 correct?

18 A. Yes.

19 Q. And this paragraph also cross-references Figs. 11  
20 through 13 for additional information about the temperature  
21 control operation, correct?

22 A. Yes.

23 Q. May I have --

24 JUDGE MCNAMARA: Mr. Reddy, pardon me, just to  
25 let you know, RX-84 is not in my binder.

1 MR. REDDY: Oh.

2 JUDGE MCNAMARA: It may be in another binder as  
3 an RX, but it is not --

4 MR. REDDY: Apologies, Your Honor. We'll make  
5 sure --

6 JUDGE MCNAMARA: I'm sorry. May be in another  
7 binder as a JX, but it is not in this one.

8 MR. REDDY: And that's the yellow binder, the  
9 lemon binder? Thank you, Your Honor.

10 JUDGE MCNAMARA: It is not in there.

11 MR. REDDY: Sorry, Your Honor. We'll make sure  
12 we fix that.

13 JUDGE MCNAMARA: Thank you.

14 Q. Now if we could go to pages 38 -- page 38 on  
15 RX-84, please.

16 Now Figs. 11 and 12 plot the panel temperature,  
17 correct?

18 A. Yes.

19 Q. And this panel temperature data is collected by  
20 the temperature sensor TS, correct?

21 A. I don't have that, the words, in front of me,  
22 but, yes, I assume that those graphs come from the  
23 temperature sensor.

24 Q. May I have RX-84, page 31, please.

25 So, Mr. Flasck, paragraph 78 through 81 describe

1     how the temperature sensor and the fan control work in  
2     Nagayama, correct?

3             A.    Yes.

4             Q.    Mr. Smith, can I have the annotated Fig. 9 from  
5     slide 156 on the same page here, please.

6                    Sorry.  It's annotated Fig. 9 from slide 153.

7                    And just while we're getting that together,  
8     Your Honor, I understand RX-84 is in volume 3 of the direct  
9     examination binder for the Court, but we'll, nonetheless,  
10    supplement RX later on.

11                   So, Mr. Flasck, do you see we have the annotated  
12    figure, Fig. 9, from Nagayama on the -- in front of you?

13             A.    Yes.

14             Q.    And so fan 71 turns on when the panel exceeds a  
15    certain temperature, correct?

16             A.    Yes.

17             Q.    And, again, when it says "panel," that's  
18    referring to liquid crystal panel 13, correct?

19             A.    Yes.

20             Q.    The temperature sensor is not measuring the  
21    temperature of air inside the device box 2, correct?

22             A.    According to this, that's correct.

23             Q.    Thank you, Mr. Flasck.

24                   We can take that down, Mr. Smith.

25                   If we can go to slide 190 from your presentation,

1 please.

2 Slide 190 from Mr. Flasck's presentation, please.

3 Thank you.

4 So, Mr. Flasck, you contend that the Outdoor  
5 Promotions 70-inch wedge was material to the patentability  
6 of certain claims in the '311 and the '253 patents, correct?

7 A. Yes.

8 Q. Now the evidence that you contend is material are  
9 the CAD images that are shown on your slides 190 and 191,  
10 correct?

11 A. Yes.

12 Q. Now you didn't give any opinions that the Outdoor  
13 Promotions product controls a velocity of air inside the  
14 unit, correct?

15 A. I didn't provide any opinions as to whether the  
16 70-inch bus shelter product had a controller or had a  
17 particular air velocity, that's correct.

18 Q. Now, Mr. Flasck, you understand that this CAD  
19 drawing corresponds to a prototype that was shown at the  
20 Digital Signage Exposition in Las Vegas in February 2008,  
21 correct?

22 A. Yes, that's my understanding.

23 Q. And you would agree, sir, that if I just walked  
24 by the Outdoor Promotions 70-inch wedge, I wouldn't be able  
25 to tell precisely how far the distance was between the cover

1 glass and the LCD panel, correct?

2 A. Simply walking by it, no, you wouldn't be able to  
3 tell.

4 Q. Now were you provided the native CAD image that  
5 is cited on your slide, sir?

6 A. This is the CAD image.

7 Q. Correct. Were you provided the native file from  
8 which the CAD image was generated?

9 A. I don't recall.

10 Q. Do you recall finding out any author information  
11 associated with this CAD -- with the native CAD file that  
12 generated this image?

13 A. I remember seeing a lot of CAD files and a lot of  
14 technical documents during this case, and I just -- I don't  
15 recall whether I saw all the CAD files for the wedge  
16 product.

17 Q. Did you understand, sir, that as part of your  
18 work on this case that MRI gave you all the information they  
19 had about the design of the wedge display that was shown at  
20 the 2008 DSE show?

21 A. That's my understanding.

22 Q. And you also -- was it also your understanding  
23 that MRI gave you all the information it had about the  
24 features and functionality of the wedge display that was  
25 shown in 2008?

1 A. Yes.

2 Q. Did MRI provide you the testimony given in this  
3 court about three months ago in the public session, at the  
4 hearing in the 1331 investigation, about the design of this  
5 wedge display product?

6 A. I don't recall that specifically.

7 Q. Do you recall being provided any testimony from  
8 the 1331 investigation?

9 A. I don't believe I was.

10 Q. You heard Mr. Dunn testify about a company called  
11 Vertigo Digital Displays. Do you remember that?

12 A. Yes.

13 Q. Were you provided any information about Vertigo's  
14 role in the design of this wedge display product?

15 A. I don't recall getting any information on that.

16 Q. Thank you, Mr. Flasck.

17 MR. REDDY: I'll pass the witness.

18 JUDGE MCNAMARA: Thank you very much.  
19 Mr. Goldstucker?

20 MR. GOLDSTUCKER: A few questions, Your Honor.  
21 May I proceed?

22 JUDGE MCNAMARA: Yes, please.

23 REDIRECT EXAMINATION

24 BY MR. GOLDSTUCKER:

25 Q. Good morning, Mr. Flasck.

1 A. Good morning.

2 Q. Ms. Gray, can you go ahead and pull up EDIS 28.

3 Do you recall, Mr. Flasck, yesterday Mr. Reddy  
4 asked you about whether you reviewed the Court's Claim  
5 Construction for the circuit board mounting part term?

6 A. Yes.

7 Q. And were you informed that the Court issued a  
8 Markman Claim Construction Order on the first day of the  
9 hearing?

10 A. On what?

11 Q. At the beginning of the hearing, that the Court  
12 issued a Markman order?

13 A. Oh, yes. Yes.

14 Q. Have you seen the Claim Construction Order right  
15 here?

16 A. Yes.

17 Q. Ms. Gray, can you jump to slide -- or page 25 at  
18 PDF 28.

19 And you're aware of the Court's Claim  
20 Construction Order, the adopted construction, for the  
21 circuit board mounting part term?

22 A. Yes.

23 Q. And do you see that the Court's Claim  
24 Construction Order states that the circuit board mounting  
25 part does not require construction and should be interpreted

1 according to its plain and ordinary meaning?

2 A. Yes.

3 Q. Did your analysis for the circuit board mounting  
4 part term take into account this claim construction by the  
5 Court?

6 A. Yes.

7 Q. And I know we spoke about this yesterday, but did  
8 you apply the constructions of the Judge's Markman Claim  
9 Construction Order to your entire analysis in this case?

10 A. Yes.

11 MR. GOLDSTUCKER: Your Honor, we need to go on  
12 the -- or, with your permission, can we go on the MRI ITC  
13 confidential record?

14 (Whereupon, the hearing proceeded in confidential  
15 session.)

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1 O P E N S E S S I O N

2 (In session at 11:10 a.m.)

3 MR. KORN: Thank you, Your Honor. Just as  
4 housekeeping, I think we can go on the public record.

5 JUDGE MCNAMARA: Sure.

6 MR. KORN: And, Your Honor, MRI calls Mr. Ryan  
7 Herrington.

8 JUDGE MCNAMARA: Good morning, Mr. Herrington.

9 THE WITNESS: Good morning.

10 RYAN HERRINGTON,

11 having been first duly sworn or affirmed on  
12 their oath, was thereafter examined and testified as  
13 follows:

14 JUDGE MCNAMARA: Please state your full name.

15 THE WITNESS: Ryan N. Herrington.

16 MR. KORN: Your Honor, if my colleague,  
17 Mr. Nelson, could pass out some binders, please.

18 JUDGE MCNAMARA: Sure.

19 DIRECT EXAMINATION

20 BY MR. KORN:

21 Q. Good morning.

22 A. Good morning.

23 Q. Will you please state your full name for the  
24 record?

25 A. Yes. It's Ryan N. Herrington.

1 Q. Mr. Herrington, how is it that you've come to be  
2 involved in this investigation?

3 A. I was retained by the Respondent, MRI.

4 Q. And what was the scope of your assignment here?

5 A. So I was asked to assess the economic prong of  
6 the domestic industry requirement, specifically to respond  
7 to Ms. Rowe's analyses and opinions as she put forward in  
8 her expert report. I was also asked to assess Samsung's  
9 contentions as they relate to commercial success.

10 Q. And did you come to some conclusions?

11 A. I did.

12 Q. At a high level, what were those conclusions?

13 A. Related to domestic industry, my opinion is  
14 Samsung, by way of Ms. Rowe, has failed to demonstrate  
15 significant investment in the domestic industry products,  
16 specifically those products that are alleged to practice the  
17 patents in this case.

18 Q. And, sir, is it correct that I understand that  
19 you prepared some demonstratives to help with your findings  
20 and opinions today?

21 A. I did.

22 Q. And if you could turn to RDX-8 in your binder, is  
23 that a copy of the demonstratives that you prepared?

24 A. Yes, they appear to be.

25 Q. All right. So you mentioned the domestic

1 industry requirement. What is your understanding of the  
2 domestic industry requirement with respect to this  
3 investigation?

4 A. So at a high level, I understand that the  
5 domestic industry requirement requires two prongs. There's  
6 a technical prong and an economic prong.

7 I'm not here to offer any opinions on the  
8 technical prong. As to the economic prong, it's my  
9 understanding that the Complainant must show significant  
10 investments in the products alleged to practice the asserted  
11 patents.

12 Q. All right. Well, let's talk a little bit about  
13 your background.

14 Ms. Gray, if you could go to slide 2, please.

15 And, Mr. Herrington, please tell us about your  
16 experiences.

17 A. Sure. So I'm a senior managing director at FTI  
18 Consulting. My education, I received my BBA, magna cum  
19 laude, from Texas A&M University. That was in finance. I  
20 subsequently went on to receive my MBA from the University  
21 of Texas at Dallas.

22 I hold three certifications. I'm a certified  
23 licensing professional, I'm a certified valuation analyst,  
24 and I'm a certified fraud examiner. I have over 20 years of  
25 experience, and I think at this point I've participated in

1 over 50 Section 337 investigations.

2 Q. And in those investigations have you testified  
3 before the ITC?

4 A. I have. And I think the last time I testified in  
5 front of Your Honor was in the 1263 investigation.

6 Q. Now, sir, has your opinion on the economic prong  
7 of domestic industry ever been excluded or struck on the  
8 basis of lack of qualifications or, frankly, for any other  
9 reason?

10 A. No.

11 Q. And did you review materials in preparation for  
12 your opinion?

13 A. I did. I looked at the documents that were  
14 produced by both parties. I reviewed deposition  
15 transcripts. I reviewed interrogatory responses, the  
16 contentions. And then certainly I looked at Ms. Rowe's  
17 expert report.

18 MR. KORN: Your Honor, I respectfully tender  
19 Mr. Herrington as an expert in the field of economic  
20 analysis, economic analysis pertaining to domestic industry.

21 MR. MCCARTHY: Your Honor, PJ McCarthy. No  
22 objection.

23 JUDGE MCNAMARA: All right. Then Mr. Herrington  
24 is accepted as an expert for the topics upon which he has  
25 been called to testify.

1                   MR. KORN: Your Honor, at this time if we may, I  
2 think we need to go on the Samsung confidential record.

3                   (Whereupon, the hearing proceeded in confidential  
4 session.)

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

3 (In session at 1:35 p.m.)

4 JUDGE MCNAMARA: Thank you. Please be seated.

5 Where are we on time, Mr. Lee?

6 MR. LEE: I believe the parties have conferred, I  
7 guess, for formal record, Mr. Herrington was MRI's last  
8 witness in its case-in-chief. So MRI's case-in-chief is  
9 closed and the parties have moved on to their rebuttal case,  
10 which Complainants will lead.

11 JUDGE MCNAMARA: Right, but there are three and a  
12 half hours and closings.

13 MR. MCCARTHY: Your Honor, we talked about this  
14 at the break, and Mr. Lee, maybe members of your team can  
15 confirm, but we split up the three and a half hours, which  
16 we understand to be probably even a little bit longer than  
17 we actually have, and we have formally agreed that  
18 Complainants have 110 minutes left and Respondents have 100  
19 minutes left.

20 JUDGE MCNAMARA: Okay.

21 MR. MCCARTHY: We can split up that time as we  
22 deem fit between the two witnesses and closing.

23 JUDGE MCNAMARA: That's fine, whatever. You've  
24 got until 5:30. Just wanted to make sure the math worked.  
25 Thank you.

1 MR. KLINE: Lawyers doing math, Your Honor.

2 JUDGE MCNAMARA: Well, it's either time or math.  
3 Take your pick.

4 MR. KLINE: Time math is harder than regular  
5 math.

6 The Complainants call Dr. Smith.

7 JUDGE MCNAMARA: Thank you. Mr. Kline, are we  
8 starting on the public record?

9 MR. KLINE: Yes, we are, Your Honor, please.

10 BRUCE SMITH,

11 having been previously duly sworn or affirmed  
12 on his oath, was thereafter examined and testified further  
13 as follows:

14 DIRECT EXAMINATION

15 BY MR. KLINE:

16 Q. Welcome back, Dr. Smith.

17 A. Thank you, Mr. Kline.

18 Q. Just briefly remind us, introduce yourself.

19 A. Sure. My name is Bruce Smith. I'm a professor  
20 at the Rochester Institute of Technology.

21 Q. I understand that you have conducted an analysis  
22 concerning the validity of the asserted claims of the  
23 patents-in-suit; is that right?

24 A. That's right, I have.

25 Q. Have you reached any conclusions from that

1 analysis that you conducted?

2 A. Yes, I have.

3 Q. What conclusions have you reached?

4 A. I've concluded that the Samsung patents have not  
5 been made invalid by the asserted prior art that has been  
6 asserted by MRI and described by Mr. Flasck.

7 Q. I understand you've prepared some slides to go  
8 along with your presentation; is that right?

9 A. That's right.

10 Q. Do you recognize what's on the screen?

11 A. That's the front page of my slides.

12 Q. Turning to slide 2 of CDX-0009, what materials  
13 did you rely on to conduct your validity analysis?

14 A. Well, I relied on several and some is similar to  
15 what I relied on earlier in the week.

16 My experience in the field of electronic  
17 displays, both as a professor and a student, the asserted  
18 patents in the case, their file histories and also prior art  
19 references, as well as claim constructions, testimony, and  
20 MRI expert reports.

21 Q. Turning to slide 3, remind us, you testified on  
22 direct during the case-in-chief that you're a person of  
23 ordinary skill in the art in this investigation.

24 A. Yes, I did.

25 Q. And slide 3, is this the definition of a person

1 of ordinary skill that you used?

2 A. Yes, that's the one that I've used.

3 Q. Were you such a person in 2007?

4 A. Yes, at least that.

5 Q. Now in the course of your reviewing the prior art  
6 that you're going to be testifying about and the claims of  
7 the asserted patents, did you conduct your analysis from the  
8 perspective of such a person of ordinary skill in the art?

9 A. Yes, that as well.

10 Q. And turning to slide 4, did you apply these claim  
11 constructions in connection with the analysis that you  
12 conducted?

13 A. Yes, I did.

14 Q. And turning to slide 5, we have the Court's  
15 rulings concerning claim constructions and Samsung's  
16 proposals where we don't have a court ruling. Did you apply  
17 these constructions in the course of your validity analysis?

18 A. That's right, I did.

19 Q. Dr. Smith, I'd like to start with the analysis  
20 you conducted concerning the '117 patent. And turning to  
21 slide 7, what are we looking at here?

22 A. This is, as I understand it, MRI's prior art,  
23 against the '117 patent and the attempt to invalidate it.  
24 And Takahashi and Karppanen, we'll talk about these as they  
25 pertain to claims 1 and 2 of the '117 patent.

1 Q. Were you present when Mr. Flasck testified about  
2 his positions concerning the impact of these references on  
3 the asserted claims?

4 A. Yes, I was.

5 Q. Have you formed any conclusions in the context of  
6 MRI and Mr. Flasck's positions?

7 A. Yes, I have.

8 Q. What conclusions have you reached?

9 A. I don't believe they invalidate these claims of  
10 the '117 patent.

11 Q. So let's turn to slide 8, and starting with MRI's  
12 arguments concerning the Takahashi reference, what is the  
13 basis for your conclusion that Takahashi does not invalidate  
14 claims 1 and 2 of the asserted '117 patent?

15 A. Well, I show here on this slide some of the  
16 highlighted elements of claim 1. Claim 2, of course,  
17 depends on claim 1. The Takahashi reference does not meet  
18 claim elements 1[e] and 1[f], and then as a second cooling  
19 path, and that second cooling path being separated from  
20 another cooling path. Also since claim 2 depends on claim  
21 1, Takahashi doesn't anticipate or render obvious claim 2  
22 either.

23 Q. So let's take a look at the Takahashi reference,  
24 which is shown at slide 9. Just at a high level, Dr. Smith,  
25 what does Takahashi disclose?

1           A.   Well, Takahashi is called a wall embedded liquid  
2 crystal panel. I've highlighted it here on this slide. It  
3 uses two vent openings 52. These are on the bottom of the  
4 display unit or the liquid crystal display panel unit.

5           Air enters through the bottom. It travels  
6 upwards through the elements within the display unit and  
7 exits out of a single exhaust opening or vent opening 52, as  
8 described here in these excerpts from the Takahashi patent.

9           Q.   You mentioned the vent openings. What about the  
10 airflows? How many airflow paths does Takahashi disclose?

11          A.   Well, there is a single airflow path that enters  
12 through vent opening 52 on the bottom and then is exhausted  
13 through vent openings 52 on the top, just a single one.

14          Q.   Turning to slide 10, then, and the '117 patent,  
15 what does the '117 patent specification say about the first  
16 and second cooling paths that are described in claims 1 and  
17 2 of the '117 patent?

18          A.   Well, it describes these as separate. We've seen  
19 Fig. 1 now several times, and I think I've used a very  
20 similar annotation a few days ago.

21                There two cooling paths. I've labeled these, the  
22 first cooling path in pink, that's 60, that enters through  
23 opening 61 and exits through opening 62. And there's a  
24 second cooling path that is labeled 70 that enters and exits  
25 through opening 71 and 72. There's no mixing between these.

1 These are separate paths.

2 Q. You say there's no mixing, that they are  
3 separate. How are the first and second cooling paths  
4 separated as described in this portion of the specification  
5 of the '117 patent that we're looking at on slide 10?

6 A. Just in that way, there is no mixing of the air  
7 that travels through the first cooling path with the air  
8 that travels through the second cooling path.

9 Q. Does the '117 patent disclose any embodiment in  
10 which the claimed first and second cooling fluid paths mix  
11 inside the case?

12 A. It does not.

13 Q. Let's turn, then, back to the Takahashi  
14 disclosure and slide 11 of your presentation.

15 Does Takahashi disclose first and second fluid  
16 cooling paths that are separated from one another?

17 A. No. Again, there's just a single cooling path  
18 that enters through the bottom and exits through the top,  
19 and the elements inside of the wall mounted display are  
20 cooled with it, with the single cooling path.

21 Q. Did you hear Mr. Flasck testify that a person of  
22 skill, ordinary skill in the art, would have been motivated  
23 to separate the airflow in the Takahashi into two separate  
24 paths?

25 A. I heard something to that extent.

1 Q. Did you agree with him?

2 A. No, I don't.

3 Q. Why not?

4 A. Well, there's nothing in Takahashi that would  
5 motivate one to do that. It appears from the description of  
6 the patent that everything that the patent set out to do is  
7 accomplished through the structure displayed with a single  
8 path and single openings on the top and bottom.

9 Q. So then turning to slide 12 of your presentation  
10 and moving on to MRI's arguments regarding the Karppanen  
11 '116 reference, what is the basis for your conclusion that  
12 you've already have testified to that Karppanen '116 alone  
13 or in combination with Takahashi does not invalidate claims  
14 1 and 2 of the '117 patent?

15 A. Well, I don't believe Karppanen '116 either alone  
16 or in combination with Takahashi shows a case. I've  
17 highlighted this in element 1[g]. That case provided on --  
18 that case so that the circuit board mounting part is  
19 provided on the rear surface of the case, and then every  
20 part of element 1[g] that follows.

21 Also, claim 2 that depends on claim 1, claim 2,  
22 recall, is the case of claim 1 comprising front and rear  
23 cases with a circuit board mounting part provided on the  
24 outer surface of the rear case. Neither Karppanen '116  
25 alone or in combination with Takahashi disclose this.

1 Q. So let's look at that in a little more detail.  
2 Turning to slide 13, can you walk us through Fig. 1 of the  
3 Karppanen '116 reference as you've interpreted it?

4 A. Sure. Fig. 1, as we see here, this excerpt at --  
5 I don't remember if it's paragraph or column 16 -- I think  
6 it's paragraph 6, I'm sorry, paragraph 6 -- Karppanen '116  
7 is called an Electronic Information Board, and that  
8 Electronic Information Board shown in Fig. 1 has two cases.  
9 These are called closed display casing 10, and that houses  
10 the display panel.

11 And there's also a closed device casing 12 on the  
12 other side, so I've highlighted the display casing in green,  
13 the closed -- I'm sorry, the closed device casing on the  
14 other side, on the left-hand side, element 12, that is the  
15 section of the information board where the electronic  
16 equipment is placed. So there are two cases in Karppanen  
17 '116, a display case 10 and the device casing 12.

18 Q. Turning to slide 14, does this Fig. 1 of the  
19 Karppanen '116 reference depict the two -- how the two cases  
20 are oriented relative to one another in normal use?

21 A. Yeah. It's important to point out that what this  
22 shows in Fig. 1 is these two cases opened. In normal use  
23 they are closed together. And in this closed position they  
24 are separated by a common cooling space, as Karppanen  
25 describes it, between the two. There are also some elements

1 that separate the display casing 10 and the device casing  
2 12, and I've labeled those there. They are 32 -- 32, I'm  
3 sorry, the cooling elements.

4 Q. So if you could, again, I think you made a  
5 gesture with your hands, how might -- how were these cases  
6 manipulated for normal use?

7 A. Well, there's a hinge, and that, I believe, is  
8 element 14, although I haven't labeled it. There are a pair  
9 of hinges.

10 So this is an open view we're seeing in Fig. 1 on  
11 the display casing, again, on the right, the device casing  
12 on the left, and they are closed on those hinges, and then  
13 there is a locking element that's labeled 18 on both cases,  
14 that's what latches them together. So in normal operation  
15 they are closed, one is closed onto the other.

16 Q. If I were looking at it as you're looking at it,  
17 like I hold my hands here, depicted like this and they close  
18 like this; is that right?

19 A. Sure, palms together, cases are closed.

20 Q. Thank you. Now in normal use, when the units are  
21 closed together like my palms, are there any intervening  
22 components between the two cases described in Karppanen?

23 A. Sure. As I mentioned, there's a cooling space  
24 that's 20 between the two, so there is space between the  
25 two. There are also these cooling elements, these physical

1 elements that are labeled as 32, that are on the back wall  
2 of the display casing, that's 22, and also the back cover of  
3 the device casing 28. And so it holds these apart or that  
4 would hold these apart.

5 Q. Turning, then, to slide 15, element 1[g], of  
6 claim 1 of the '117 patent, did you hear Mr. Flasck testify  
7 that the claimed case element of claim 1 of the '117 patent  
8 is met by two cases in Karppanen '116 as described as the  
9 display casing 10 and the device casing 12?

10 A. Yes, I heard him say that.

11 Q. Do you agree with Mr. Flasck in that regard?

12 A. No, I don't.

13 Q. Why not?

14 A. Well, this is clearly two cases. In order for  
15 them to be one case, they would have to be at least in this  
16 open form.

17 Q. And did you hear Mr. Flasck testify that the  
18 component in Karppanen '116 described as the back cover 28  
19 is, quote, "circuit board mounting part provided on the rear  
20 surface of the case," quote, as recited in claim 1 of the  
21 '117 patent?

22 A. Yes, I recall it.

23 Q. Do you agree with him in that regard?

24 A. No, I don't. In order for the back cover -- and  
25 Mr. Flasck called this the rear cover -- of the device

1 casing to be a circuit board mounting part, it would have to  
2 be mounted onto the back wall, which is 22, of the display  
3 case, and it's not.

4 Q. And how do you conclude that the back cover --  
5 strike that.

6 Why isn't the back cover 28 in your view provided  
7 on a rear surface of the case, as that term is used in the  
8 claims of the '117 patent?

9 A. Well, as I said before, even in the closed  
10 position, that back cover isn't on the rear surface of the  
11 case, it's separated by the rear surface of the case at  
12 least by the shared common cooling path and the cooling  
13 elements 32.

14 Q. Now if I were to ask you to assume for sake of  
15 argument that the display casing 10 and the device casing 12  
16 in this Fig. 1 of Karppanen together form a case, is a back  
17 cover 28 provided on a rear surface of the case?

18 A. So now, as you've asked me to assume, we're  
19 putting these two cases together and considering that the  
20 case.

21 Q. Right.

22 A. Well, what 28 is called in the patent is the back  
23 cover of the device casing. It's called the back cover.  
24 And Mr. Flasck calls it the rear cover. It's not called the  
25 rear cover; it's the back cover.

1           In the closed position, this back cover of the  
2 device casing is not on the rear surface of his case.  
3 Instead, the rear surface of the case in that case, in that  
4 situation, where you want to take the case to be comprised  
5 of display casing and device casing, wouldn't be 28, it  
6 would have to be something on the outside of the device  
7 casing, something like panel 24.

8           Q.   Let's turn, then, to slide 16. How did you reach  
9 your conclusion that Karppanen does not invalidate claim 2  
10 of the '117 patent?

11          A.   Well, for similar reasons. Now if we consider  
12 the claimed case in claim 1, which is -- which we've talked  
13 about, to be made up of a rear case and a front case, again,  
14 for the same reasons, as that's closed, the rear case, which  
15 is the device casing, has a rear surface to it, which would  
16 have to be on the very outside, which would be something  
17 like panel 24. It would not be a back cover device casing  
18 28.

19          Q.   Turning to slide 17, did you hear Mr. Flasck  
20 testify in the alternative that the combination of Karppanen  
21 '116 and Takahashi renders claim element 1[g] in claim 2  
22 obvious to a person of ordinary skill in the art?

23          A.   I heard him say that, yes.

24          Q.   And do you agree that a person of ordinary skill  
25 in the art would have been motivated to add a circuit board

1 mounting part to Karppanen '116 based on the disclosure of  
2 the Takahashi reference?

3 A. No, I don't think so, for a couple of reasons.

4 Q. Why is that?

5 A. One is, if we look at what these -- what these  
6 inventions are, what these patents describe, the Karppanen  
7 '116 display assemblies, an information board, it is  
8 freestanding. There are two parts to it, as we talked  
9 about, a display part and a device part that are hinged  
10 together.

11 Takahashi, on the other hand, is a wall embedded  
12 display. This is inserted into a wall. I think it's  
13 labeled as A on the left side of Takahashi. It's shaded in  
14 gray. It's the wall itself. So a combination of these  
15 things, I don't think one would look to one for the other.

16 In addition to that, you asked me about the  
17 circuit board mounting part that's described in Takahashi.  
18 Takahashi describes a circuit board mounting part. The  
19 circuit board is labeled in Takahashi as elements 3.

20 This is mounted on the rear, basically, the rear  
21 surface of the display, the display case, the rear surface  
22 of the display or display case for Karppanen '116 is that  
23 cover 22.

24 One would know that the circuit board mounting  
25 part for the circuit boards mounted into it couldn't be

1 mounted onto 22, the back wall of the display casing,  
2 because if you did this, the two cases wouldn't be able to  
3 be closed together.

4 Q. By the way, does Karppanen '116 tell us anything  
5 about where its circuit boards are located?

6 A. Yeah, that's a good point. Karppanen '116 merely  
7 says there are electronic components, electronic boxes with  
8 electronic components. It doesn't say anything about where  
9 they are mounted, where they are within the device casing,  
10 other than they are placed within the device casing.

11 Q. Turning, then, to slide 18, please summarize the  
12 conclusions that you reached following your analysis  
13 concerning validity of claims 1 and 2 of the '117 patent.

14 A. Sure. I don't believe Takahashi or Takahashi --  
15 Takahashi or Karppanen '116 alone or together render obvious  
16 or anticipate claims 1 or 2 of the '117 patent.

17 Q. Let's turn to your analysis of the '311 patent  
18 and the arguments that MRI and Mr. Flasck have made  
19 concerning its validity.

20 Turning to slide 20, what does the table here  
21 show?

22 A. So this shows the references that MRI and  
23 Dr. Flasck have used to invalidate the '311 patent, in  
24 particular, claims 6, 13, and 4. He has used a Gromatzky  
25 patent, a Burstein patent, a different Karppanen, Karppanen

1 '125, and a Utsunomiya patent.

2 Q. And were you present when Mr. Flasck testified  
3 about the invalidity positions that he and MRI are taking?

4 A. Yes, I was.

5 Q. Have you formed any conclusions regarding those  
6 opinions?

7 A. I don't believe these prior references or their  
8 combinations invalidate claims 6, 13, or 4 of the '311  
9 patent.

10 Q. Turning to slide 21, let's start with claim 6 of  
11 the '311 patent.

12 Do you agree with Mr. Flasck that claim 6 would  
13 have been obvious over Gromatzky in view of the Burstein or  
14 Karppanen '125 disclosures?

15 A. I do not.

16 Q. Why not?

17 A. Well, several reasons. As we see here on this  
18 slide, I show how 6 is dependent on claim 1, and also claim  
19 1 elements 1[d], which is a temperature sensor to measure  
20 the temperature of turbulent air inside discharged from the  
21 channel, that's not met, nor is claim 1 element [e], a flow  
22 rate controller to control the airflow according to the  
23 measured temperature.

24 Claim 6 refers to the channel width between --  
25 being between 5 and 25 millimeters, and that isn't shown

1 either.

2 Q. Let's take a closer look at Gromatzky itself  
3 shown at slide 22. What does Gromatzky describe?

4 A. Well, I've got an excerpt here from Gromatzky at  
5 the top where I've highlighted some areas.

6 Gromatzky is a thermal management system for  
7 thin-depth LCD display enclosure. This is an  
8 environmentally sealed disclosure. We can see Fig. 1 on the  
9 right showing some of the components. There is the  
10 enclosure, that's 32. There is a display element 26. There  
11 is a front cover, I think Gromatzky calls this a lens,  
12 that's 14. And there's an air path between them.

13 Gromatzky describes this second highlighted  
14 excerpt I've got in order to dissipate heat in the ambient  
15 air in the enclosure 12, a fan 32 is placed in the airflow  
16 path, and I've shown that fan 32 highlighted in red.

17 It says down at the bottom where I've  
18 highlighted, during operation, that fan rotates, and that  
19 circulates the air in the airflow path.

20 Q. In which direction does the air flow, clockwise,  
21 counterclockwise, or otherwise?

22 A. Well, it says counterclockwise. We can see that  
23 with the arrows in Fig. 1, the counterclockwise rotation.

24 Q. Turning to slide 23, does Gromatzky disclose  
25 limitations [d] and [e] of claim 1 of the '311 patent?

1 A. It does not.

2 Q. To your understanding, does MRI agree that  
3 Gromatzky does not disclose these limitations?

4 A. I believe that's what they agreed to.

5 Q. Turning, then, to slide 24, let's take a look at  
6 the Burstein reference.

7 Now, first, does Burstein concern liquid crystal  
8 displays?

9 A. No, it doesn't.

10 Q. What does Burstein relate to?

11 A. Well, this deserves some explanation. Burstein,  
12 as I've highlighted here, is an embodiment of a computer  
13 system. The computer system that Burstein talks about and  
14 discloses is a standalone computer, like a desktop or a  
15 tower computer, with all the components required for  
16 computing. There is no display. There is no display  
17 element. There is no CRT. There is no liquid crystal  
18 display. It's just the computer.

19 It also discloses cooling zones. So this  
20 computer, Burstein has processors, microprocessors, computer  
21 chips that generate heat. Burstein calls these processors  
22 20.

23 Burstein defines cooling zones, and each cooling  
24 zone includes a processor. In these cooling zones Burstein  
25 describes there is a temperature sensor 45 that may be

1 present in each cooling zone, and that temperature sensor 45  
2 adjusts the speed of the fan to cool processors based on a  
3 fan controller unit labeled here as 40.

4 Q. Does Burstein have anything to say about the  
5 location of the temperature sensors?

6 A. No, it doesn't. It just says a temperature  
7 sensor, this is 45, may be present in each cooling zone.

8 Q. Turning to slide 25, does Burstein disclose a  
9 temperature sensor to measure the temperature of air  
10 discharged from a channel as recited in claim element 1[d]  
11 of the '311 patent?

12 A. No, there is nothing like a channel in Burstein.  
13 There's no display. There is no front cover. There's  
14 nothing that Gromatzky has got in Burstein to disclose the  
15 temperature sensor of air discharged from a channel.

16 Q. What about element [e] of claim 1 of the '311  
17 patent, the flow rate controller shown on slide 25, does  
18 Burstein disclose that element?

19 A. It doesn't. There's nothing that controls the  
20 airflow through the channel because there is no channel in  
21 Burstein.

22 Q. Now based on your 35 years of experience and the  
23 analysis that you've conducted in this matter, in your view  
24 would a person of ordinary skill in the art have been  
25 motivated by the Burstein reference to use a temperature

1 sensor to measure the temperature of air discharged from a  
2 channel in Gromatzky's LCD device?

3 A. No, I don't think so.

4 Q. How do you reach that conclusion?

5 A. Well, the little that Burstein discloses  
6 regarding the temperature sensor, there is no indication of  
7 where to place that, whether it's -- where to place it  
8 within the Burstein reference itself or where to place it in  
9 a LCD enclosure like Gromatzky.

10 Q. Let's turn, then, to slide 26 where you've got an  
11 excerpt of the Karppanen '125 reference.

12 Does Karppanen '125 disclosure disclose a  
13 temperature sensor to measure the temperature of air  
14 discharged from a channel, as those elements are recited in  
15 claim element [d] of claim 1 of the '311 patent?

16 A. No, I don't believe it does.

17 Q. How do you reach that conclusion?

18 A. Well, I've highlighted, if you look at the three  
19 sections that I've highlighted in yellow here, if I can go  
20 to the middle one first, Karppanen describes transducers not  
21 shown in -- those are temperature sensors indeed -- if I can  
22 hop up to the top highlighted area, what Karppanen is  
23 addressing is the temperature of the casings so that they  
24 are maintained within desired limits.

25 So the temperature that is being measured by the

1 transducers described in that second excerpt, those are the  
2 temperatures or the temperature of the casings.  
3 Furthermore, on the bottom highlighted area I see the  
4 temperature of the inner parts of the display casing and the  
5 device casing can't be standardized.

6           So Karppanen '125 deals with the measurement of  
7 physical parts. In this case those physical parts are the  
8 casings.

9           Q. Did you hear Mr. Flasck testify that it would  
10 have been obvious to a person of ordinary skill in the art  
11 to place the temperature sensors disclosed by Karppanen into  
12 Gromatzky's LCD display to measure the temperature of air  
13 discharged from a channel?

14          A. I heard him say that.

15          Q. Do you agree with him?

16          A. I don't.

17          Q. Why not?

18          A. Well, if anything, Karppanen '125 suggests that  
19 transducers, like temperature sensors, should be placed to  
20 measure temperatures of casings, parts of the enclosure. So  
21 the places that one might position temperature sensors in  
22 Gromatzky would be on the case or in the casings.

23          Q. So I want to -- so let's assume, then, for sake  
24 of argument that a person of ordinary skill might have been  
25 motivated to add a temperature sensor to Gromatzky in view

1 of Karppanen 125's disclosure, where would that person have  
2 been likely to place the temperature sensor?

3 A. Again, somewhere to measure the temperatures --  
4 temperature of the casings would place those on the display  
5 case.

6 Q. And would that sensor measure the temperature of  
7 air discharged from the channel in Gromatzky?

8 A. No. It would measure the temperature of the case  
9 or casing that was -- that it was positioned at.

10 Q. Turning, then, to slide 27, no, turning then to  
11 slide 28, and the limitation of claim 6, that depend from  
12 claim 1?

13 A. That's right.

14 Q. First of all, what does claim 6 additionally  
15 require?

16 A. That's the width of the channel in the range of  
17 20 -- 5 to 25 millimeters, and that channel, of course, is a  
18 channel where turbulent airflow is imparted as described in  
19 claim element 1[c].

20 Q. Turning, then, to slide 29, does Gromatzky  
21 disclose a flow control device to impart turbulence to an  
22 airflow in the channel having a width of 5 to 25  
23 millimeters, as those elements are recited in claim 6 of the  
24 '311 patent?

25 A. Well, I've got excerpts here of what Gromatzky

1 does disclose related to those elements.

2           What I've highlighted here, Gromatzky describes  
3 laminar airflow and says laminar airflow is more efficient  
4 than turbulent airflow. So that is the preferred approach  
5 to the airflow in Gromatzky.

6           Here is a reason here that I've highlighted.  
7 Gromatzky says that this contributes to a smaller fan size  
8 and, in turn, contributes to a thinner depth disclosure.  
9 That's one of the goals of Gromatzky, a thin disclosure.

10           Gromatzky does disclose in column 4 that the  
11 front of the LCD module 26 is placed approximately 9.4  
12 millimeters from the lens. The lens is that front panel.  
13 Of course, the LCD module is the LCD. So it does disclose a  
14 9.4 millimeter spacing between those.

15           But this is described with regard to the laminar  
16 airflow, there is no -- there is no disclosure in Gromatzky  
17 of any separation for any turbulent airflow.

18           Q. Let's, then, look at slide 30 and claim 13. What  
19 is the basis for your conclusion that Gromatzky in view of  
20 either Burstein or the Karppanen '125 reference do not  
21 render obvious claim 13 of the '311 patent?

22           A. Well, for the very similar reasons that they  
23 don't render obvious claim 1 of the '311 patent. Claim 13  
24 of the '311 patent includes a temperature sensor to measure  
25 the temperature of air discharged from the channel. That's

1 the same temperature sensor that I've talked about and we've  
2 discussed regarding claim element 1[d], temperature sensor  
3 to measure the temperature of air discharged from the  
4 channel.

5 Also 1[e], the measured temperature for the flow  
6 rate controller, I'm sorry, 1[e], I'm sorry, claim 13, the  
7 flow rate controller controlling the fan according to the  
8 measured temperature is the same as the flow rate controller  
9 of claim 1[e].

10 Q. At slide 31, focusing on claim 4 of the '311  
11 patent, did you hear Mr. Flasck testify that any of  
12 Gromatzky, Burstein, or Karppanen '125 disclose this element  
13 shown in claim 4 of the '311 patent?

14 A. I believe he said they didn't. I think he used a  
15 different reference to show this.

16 Q. So looking at claim 32 -- at slide 32, what  
17 reference did Mr. Flasck rely upon to find this limitation  
18 from claim 4?

19 A. He used a reference referred to as the Utsunomiya  
20 reference.

21 Q. Now what is the subject of the Utsunomiya  
22 reference?

23 A. Well, this is a liquid crystal projector  
24 apparatus, and I've got, on the bottom right here, Fig. 2  
25 from the patent, from the Utsunomiya patent, which shows

1 this liquid crystal projector.

2 This liquid crystal projector is very different  
3 from the LCD panels that we've been talking about before.  
4 This is similar to the projector we see up on the wall on  
5 the opposite side of the courtroom. This is for displaying  
6 images onto a screen. So these are used in movie theaters,  
7 to project in maybe office situations, things where you're  
8 not looking at an individual LCD display.

9 It's very different in a few ways. What I've  
10 pointed to here is, and I've labeled part number 2 in  
11 Utsunomiya Fig. 2, this is a liquid crystal unit, and this  
12 is actually made up of three very small liquid crystal  
13 displays. There's one for red, one for green, and there's  
14 one for blue. And those colors are combined and projected  
15 using a lens 11 onto a display.

16 They are illuminated, not in the way that you  
17 would illuminate an LCD display, but instead they are  
18 illuminated with a very high-intensity lamp. The  
19 high-intensity lamp is labeled as 5 in this figure.

20 So light from that high-intensity lamp is  
21 directed using optics onto those small liquid crystal units.  
22 Those are combined. And then a lens assembly, like 11, is  
23 used to project it onto the screen.

24 Q. Dr. Smith, with respect to Utsunomiya, I think  
25 you mentioned in your testimony that the LCD component is

1 very small. What do you mean by "very small"?

2 A. Less than one inch on the diagonal. As we'll see  
3 as we get a little deeper into this, it's .8 inches on the  
4 diagonal, which is maybe about half inch, so it's quite  
5 small.

6 Q. Let's turn, then, to slide 33.

7 How does the cooling system described for  
8 Utsunomiya's LCD projector compare to the cooling system  
9 described for Gromatzky's LCD display?

10 A. Well, not only the application in the workings of  
11 the LCD display are very different from the LCD projector of  
12 Utsunomiya, the method for cooling is also very different.

13 As we've seen for Gromatzky, this is a display  
14 using what Gromatzky calls an environmentally sealed  
15 enclosure. So this is a closed loop cooling system. The  
16 fan circulates air in the counterclockwise direction in the  
17 airflow path we see in Gromatzky Fig. 1.

18 For Utsunomiya, the cooling from the lamp that's  
19 projected onto the small liquid crystal displays use instead  
20 open loop like cooling. What I'm showing here is Fig. 3B  
21 from Utsunomiya showing, I've highlighted here cooling fan,  
22 I've highlighted that in red, and that takes air from the  
23 outside and blows that across the LCD panels to keep them  
24 cool.

25 And if you look at the display panel there in the

1 courtroom, there are various vents on the sides. So air is  
2 coming in and going out through use of this fan.

3 Q. Thank you, Dr. Smith.

4 With your indulgence, I'm going to try to go a  
5 little more quickly given some time limitations that we  
6 have.

7 Turning to slide 34, did you hear Mr. Flasck  
8 testify that a person of ordinary skill in the art would  
9 have been motivated to modify Gromatzky's airflow velocity  
10 in view of Utsunomiya?

11 A. I heard him say that.

12 Q. Do you agree with him?

13 A. I do not.

14 Q. Why not?

15 A. First of all, Utsunomiya talks about laminar flow  
16 region in this paragraph, the paragraph out of page 5. And  
17 then it shows a graph that Mr. Flasck has used to correlate  
18 air velocity for Utsunomiya to something like Gromatzky.

19 Well, this isn't appropriate because -- let me  
20 first describe a little bit what this plot is.

21 On the y-axis is liquid crystal temperature. On  
22 the x-axis is -- this is air velocity. There's a  
23 relationship shown here between the two. But this is for  
24 this very small .8 inch SXG, a high-resolution liquid  
25 crystal display used for projectors with a 5000 lumen lamp.

1 This is a very high-intensity lamp. So one wouldn't be able  
2 to use this plot for laminar flow in the Utsunomiya  
3 projection display for anything like Gromatzky.

4 Q. Now looking at all of the prior art combinations  
5 shown at slide 35 that MRI and Mr. Flasck have argued  
6 invalidate the asserted claims of the '311 patent, remind  
7 us, what conclusions have you reached?

8 A. I don't believe any of these references alone or  
9 in the combinations shown here invalidate the '311 patent,  
10 these claims of the '311 patent.

11 Q. Let's turn, then, to the '253 patent and your  
12 analysis of its validity there.

13 Turning to slide 37, what does this table  
14 disclose?

15 A. These are the references that MRI and Mr. Flasck  
16 have used, the Nagayama reference in the Karppanen or  
17 Karppanen '116 reference, either alone or with Burstein or  
18 Gromatzky, to invalidate claim 12 of the '253 patent.

19 Q. Were you here when Mr. Flasck testified about the  
20 positions he is taking concerning these, the effect of these  
21 references and these combinations on the validity of the  
22 claims of the '253 patent?

23 A. Yes, I was.

24 Q. Have you formed any conclusions?

25 A. Yes, I have.

1 Q. What conclusions have you formed?

2 A. I don't believe they do.

3 Q. So at slide 38, let's start with the Nagayama  
4 reference.

5 What is the basis for your conclusion that  
6 Nagayama does not render claim 12 of the '253 patent  
7 obvious?

8 A. Well, claim 12 depend on claim 11. So since  
9 Nagayama alone or in combination with Burstein doesn't show  
10 a sensor to measure a temperature of an air housing, these  
11 references don't disclose what's required for claim 12  
12 either.

13 Q. How did you reach the conclusion that Nagayama  
14 does not disclose a sensor to measure the temperature of air  
15 in the housing?

16 A. Well, I considered the only embodiment and figure  
17 in Nagayama that shows a temperature sensor. So I'll just  
18 go through some of the elements quickly.

19 There is a liquid crystal panel that's light  
20 blue. The transparent plate, which is the front, that's 23,  
21 in green. There is a front air passage, which is a little  
22 bit darker blue that's traveling through the transparent  
23 plate and liquid crystal display. There is a fan F-71  
24 towards the bottom, and that draws air through that front  
25 air passageway. And then there's a temperature sensor TS,

1 and Nagayama describes TS in paragraph 74, the section of  
2 the specification called Temperature Control Operation.

3 Nagayama says the temperature of the liquid  
4 crystal panel 13 measured using temperature sensor TS, so it  
5 explicitly says that temperature sensor TS measures the  
6 liquid crystal panel 13. And it does so, it says, because  
7 it is attached to the back surface of the liquid crystal  
8 panel.

9 Q. So I failed to mention it. What slide were you  
10 referring to?

11 A. I'm sorry. It's slide 39.

12 Q. No, that was on me.

13 So if we turn to slide 40, you may have said some  
14 of this, but how does Nagayama's temperature sensor operate?

15 A. So what's shown here in Fig. 11 from Nagayama is  
16 a plot of temperature on the y-axis and time on the x-axis.  
17 And then it says off on/off on, and that's what fan F-71 is  
18 doing.

19 If we can quickly go to slide 39 just to reorient  
20 again.

21 So fan 71 is turning on and off to draw air  
22 through that front passage.

23 Okay. We can go to 70 again.

24 Initially we see the fan is off. This plot says  
25 panel temperature. So Nagayama is measuring the panel

1 temperature with that temperature sensor TS. As that  
2 temperature -- as that panel temperature rises to a critical  
3 point, this is labeled T-1, the fan kicks on. When that fan  
4 kicks on, the panel temperature decreases until it reaches  
5 another critical point. And then it will turn off,  
6 temperatures will rise, it will turn on and turn off. So  
7 the panel temperature itself is what's being measured.

8 Q. Would a person of ordinary skill in the art have  
9 been motivated to modify Nagayama's temperature sensor to  
10 measure the temperature of air in the housing?

11 A. No, because it wouldn't work that way.

12 Q. Why not?

13 A. If someone measured the temperature of the air in  
14 the housing, that would be -- not be an indication of the  
15 panel temperature, especially in the situations when the fan  
16 was off. There would be no air circulating.

17 So in the off state, the panel temperature may be  
18 rising, but if the temperature sensor is measuring something  
19 other than the panel temperature, you're not going to be  
20 able to get an indication of how it's rising.

21 Q. Let's take a look at slide 41, then.

22 Turning to Burstein, does Burstein resolve the  
23 failure of Nagayama to disclose a temperature sensor for  
24 measuring the temperature of air in the housing?

25 A. For a few reasons, it doesn't. First, as I

1 talked about, it is a temperature sensor for a computer  
2 system. And also Burstein has no indication of where to put  
3 a temperature sensor. And, also, if the temperature sensor  
4 was put in a location that measured air, again, Nagayama  
5 wouldn't work.

6 Q. So would a person of ordinary skill in the art  
7 have been motivated by Burstein to measure the temperature  
8 of air in the housing of Nagayama?

9 A. No, I don't believe so, and I don't think  
10 Nagayama would work that way.

11 Q. Why not?

12 A. Nagayama requires that the panel temperature is  
13 measured.

14 Q. Turning, then, to slide 42, let's move on to  
15 Karppanen '116 alone or in combination with Gromatzky.

16 What is the basis for the conclusion that you  
17 reached that Karppanen '116 alone or in combination with  
18 Gromatzky does not render claim 12 obvious?

19 A. Well, similarly but for different reasons, either  
20 alone or in combination with Gromatzky, Karppanen '116  
21 doesn't show a sensor to measure the temperature of air in  
22 the housing.

23 Q. Turning to slide 43, does Karppanen '116 disclose  
24 a sensor to measure the temperature of air in the housing?

25 A. No, it doesn't. Karppanen '116 has temperature

1 sensors, and this is shown in this excerpt, temperature  
2 sensors is not shown, but these temperature sensors measure  
3 the temperature of the display casing and not the air.

4 Q. Turning to slide 44, you heard Mr. Flasck testify  
5 and do you agree with him that, nevertheless, a person of  
6 ordinary skill in the art would have been motivated to  
7 modify the temperature sensors of Karppanen '116 to measure  
8 the temperature of air in the housing?

9 A. I heard him say that.

10 Q. Do you agree with him?

11 A. No, because, again, as we see here, Karppanen  
12 '116 says there are often situations in which heat is  
13 cumulated in certain parts of the device when components are  
14 warming up. So Karppanen is concerned with the temperature  
15 of certain parts that are warming up inside the case.

16 Q. Does the Gromatzky reference address this  
17 deficiency in Karppanen '116?

18 A. No, it doesn't.

19 Q. Why not?

20 A. There is no indication of temperature sensor in  
21 Gromatzky.

22 Q. Turning, then, to slide 45, looking at all the  
23 prior art combinations that MRI and Mr. Flasck have argued  
24 invalidate claim 12 of the '253 patent, what conclusion have  
25 you reached?

1           A.    I've concluded that these references either alone  
2   or in combination do not invalidate claim 12 of the '253  
3   patent.

4           Q.    Just shifting gears a bit, were you present  
5   yesterday when Mr. Flasck testified concerning a product  
6   that has been called in this hearing the Outdoor Promotions  
7   product from the 2008 time frame and how that product  
8   compares, if at all, to claim 12 of the '311 patent and  
9   claim 1 of the '253 patent?

10          A.    I recall that.

11          Q.    And have you considered whether that Outdoor  
12   Promotions product would have been material to patentability  
13   to these claims?

14          A.    I've looked at that and considered that, yes.

15          Q.    And what conclusions did you reach?

16          A.    I don't think it would have been.

17          Q.    And if we turn to slide 47, why not?

18          A.    Well, everything that it appears the Outdoor  
19   Promotions bus shelter wedge product discloses that  
20   Mr. Flasck claims would be relevant to the prosecution of  
21   the '311 and '253 patent, I believe is shown in the European  
22   Gromatzky Patent Application, which is EP 1253459A2.  And,  
23   as I understand it, and we can see on the face of the  
24   specifications for the '311 and '253 patents, this was  
25   disclosed to the Patent Examiner.

1 Q. Thank you, Dr. Smith.

2 MR. KLINE: I pass the witness, Your Honor.

3 JUDGE MCNAMARA: Thank you, Mr. Kline.

4 CROSS-EXAMINATION

5 MR. LEE: Josh Lee for Respondents. May we  
6 approach with binders, Your Honor? I hope we don't need  
7 these, but out of an abundance of caution.

8 Q. Good afternoon again, Dr. Smith.

9 A. Good afternoon, Mr. Lee.

10 Q. We can stay on the public record.

11 Dr. Smith, I want to talk about the '117 patent  
12 briefly.

13 A. Okay.

14 Q. Now, in your own words, the '117 patent is  
15 related to a display device with a particular configuration  
16 of components that allows for thermal management of the  
17 device, correct?

18 A. I believe I said something like that, yes.

19 Q. If we could pull up RX-158.1, and if we could  
20 focus on Dr. Smith's professional experience on his CV here.

21 Now, Dr. Smith, last week we walked through your  
22 professional experience.

23 A. I remember.

24 Q. And you confirmed that none of your work at Gould  
25 AMI, Digital Equipment Corp., Rutherton Appleton Labs,

1 International SEMATECH, IMC, or Lithographic Technology  
2 Corp., none of that work was directed to thermal management  
3 of electronic displays, correct?

4 A. Thermal management, you're right, of displays.

5 Q. And prior to 2008 you were not personally  
6 involved in any laboratory experiments or other experiences  
7 at RIT concerning thermal management of electronic displays,  
8 correct?

9 A. Regarding thermal management of the displays  
10 themselves, you're correct.

11 Q. And, in fact, last week you agreed that you  
12 personally have no hands-on experience with thermal  
13 management of electronic displays, correct?

14 A. Of the displays themselves, correct.

15 Q. So I just want to make -- so it's your opinion  
16 that other people that are skilled with respect to thermal  
17 management of electronic displays, it's your opinion they  
18 would not find the claims of the '117 patent invalid in view  
19 of the prior art identified by Mr. Flasck.

20 A. Well, what I described in terms of my experience  
21 and background is my experience and background in thermal  
22 management issues involved in the components that make up  
23 the display like LCD displays.

24 To answer your question, I don't really  
25 understand it. Could you ask it again?

1 Q. You don't have any personal hands-on experience  
2 with thermal management of electronic devices -- displays,  
3 excuse me -- correct?

4 A. Is the display as manufactured, completely  
5 manufactured? I do not.

6 Q. All right. I want to turn to the Takahashi  
7 reference. You've got a copy of it in your binder, but I'd  
8 like to just pull up your own demonstratives about that  
9 exhibit.

10 Ms. Gray, can we go to CDX-9.8.

11 Dr. Smith, you agree that Takahashi discloses  
12 each of claim elements 1[pre], 1[a], 1[b], 1[c], 1[d], and  
13 1[g] of claim 1 of the '117 patent, correct?

14 A. I do --

15 (Clarification requested by the court reporter.)

16 A. I do in that the first cooling path is the only  
17 cooling path.

18 Q. And you agree that Takahashi also discloses the  
19 additional limitation of dependent claim 2, correct, that  
20 begins "wherein the case"?

21 A. Can you repeat that question?

22 Q. You agree that Takahashi discloses the additional  
23 limitation of dependent claim 2 of the '117 patent that  
24 begins "wherein the case"?

25 A. Well, let me think about this. Wherein the case

1 is the display panel device as claimed in claim 1, and all  
2 of what's claimed in claim 1 is not met, 1[e] and 1[f].

3 So wherein the case makes -- makes no difference.  
4 There is not the display device that's claimed in claim 1 to  
5 meet -- that claim 2 can meet the limitation of.

6 Q. Dr. Smith, in your demonstrative CDX-9.8 you  
7 highlighted in red text the limitations of the elements that  
8 you believe are not disclosed by Takahashi, correct?

9 A. That's right.

10 Q. And in dependent claim 2, the additional clause  
11 that begins "wherein the case includes," is not highlighted  
12 in red, correct?

13 A. Fair enough.

14 Q. So it's your opinion that Takahashi does not  
15 disclose the elements you highlighted in red, 1[e] and 1[f],  
16 because, in your opinion, Takahashi discloses only a single  
17 fluid cooling path, correct?

18 A. That's right.

19 Q. Ms. Gray, can we go forward one slide to  
20 Dr. Smith's demonstrative, CDX-9.9.

21 Dr. Smith, I see an image of what you say is the  
22 Takahashi reference at Fig. 4 on the left side of the  
23 screen. Do you see that?

24 A. That's right.

25 Q. Now I see a gigantic red arrow. Now that red

1 arrow, that's something that you, someone with no hands-on  
2 experience with thermal management in electronic displays,  
3 you added that arrow, correct?

4 A. I don't think it requires somebody with thermal  
5 management of electronic displays. That's the way air would  
6 enter, and, as it's heated, it would exit out what Takahashi  
7 describes and I've highlighted here. As a result, the heat  
8 generated inside the unit is ventilated and radiated only in  
9 the vertical direction.

10 I think that red, fat red arrow, I think you  
11 called it, large, or whatever you called it, shows exactly  
12 what that excerpt says. It's ventilated and radiated only  
13 in the vertical direction.

14 Q. Now Takahashi Fig. 4, when it published as prior  
15 art, it didn't include this gigantic red arrow, correct?

16 A. No, and I've said below it's annotated.

17 Q. You added this gigantic red arrow to Fig. 4 of  
18 Takahashi.

19 A. And I also highlighted vent openings 52, yes.

20 Q. Now let's look at Takahashi Fig. 4 without your  
21 gigantic red arrow.

22 So, Ms. Gray, can we pull up RX-82 and go to  
23 RX-82.13, please, and blow up Fig. 4 when you get there,  
24 please.

25 Now, Dr. Smith, you agree that Takahashi

1 discloses a liquid crystal panel 21, correct?

2 A. Yes.

3 Q. And you agree that Takahashi Fig. 4 discloses a  
4 circuit board 3, correct?

5 A. That's right.

6 Q. And you agree that Fig. 4 of Takahashi as it  
7 published, it actually has multiple arrows depicting  
8 airflow, not just a single red arrow, correct?

9 A. There are a lot of arrows there.

10 Q. And you agree that Fig. 4 of Takahashi, if we  
11 look at the liquid crystal panel 21, you agree that  
12 Takahashi Fig. 4 illustrates vertical arrows passing along  
13 liquid crystal panel 21, correct?

14 A. There are arrows there, yes.

15 Q. And you agree that Takahashi Fig. 4 illustrates  
16 different arrows passing along circuit board 3, correct?

17 A. There are arrows that pass along in the region of  
18 circuit board 3, yes.

19 Q. And that's on the left side of the figure for the  
20 record and for Your Honor, that's on the left side of  
21 Fig. 4, correct?

22 A. Yes.

23 Q. All right. So you agree that the arrows, the  
24 airflow that passes over liquid crystal panel 1 -- those  
25 arrows that pass over liquid crystal panel 21, they do not

1 pass over circuit board 3, correct?

2 A. There are separate arrows that pass over 21 and  
3 -- 21 liquid crystal panel and circuit board 3, yes, there  
4 are separate arrows.

5 Q. So the airflow that passes over liquid crystal 21  
6 does not pass over circuit board 3, correct?

7 A. The physical arrows we're talking about, the  
8 drawn arrows, right, as they are drawn they are -- they are  
9 where they are. They are in the vicinity of liquid crystal  
10 panel for the ones on the right, in the vicinity of the  
11 circuit boards 3 for the ones on the left.

12 Q. I just want a clear record on this. I think  
13 we're in agreement. The arrows that pass over -- the arrows  
14 on the right side of the figure that pass over liquid  
15 crystal panel 21, those arrows do not pass over circuit  
16 board 3, correct?

17 A. We're talking about, it looks like, one, two,  
18 three -- there might be five arrows that pass over the  
19 liquid crystal panel. They appear to be thinner on the  
20 bottom and thicker at the top. There are five of them.

21 For the circuit, circuit board, it looks like  
22 there are one, two, three, four that may pass over the  
23 circuit board that appear to go from thinner to thicker.

24 Q. And those are different arrows. It's different  
25 arrows that pass over the liquid crystal panel and it's

1 different arrows that pass over the circuit board 3,  
2 correct?

3 A. The arrows themselves are drawn different.

4 Q. Despite that these arrows are drawn differently,  
5 it's your opinion that these arrows are not separated as  
6 required by the claims of the '117 because they all share  
7 one entry and one exit, correct?

8 A. Well, they all come together before they -- after  
9 they enter, they are all together. So they enter 52, that  
10 air is all together. And it's also, as it's exhausted out  
11 of the single opening 52 at the top, they are also all  
12 together.

13 Q. And your opinion as to why these arrows do not  
14 meet the claim limitations of claim 1 is based upon Fig. 1  
15 of the '117 patent, correct?

16 A. No, also support provided in the specification,  
17 the description of same, along the lines of same path.  
18 Takahashi describes -- uses those words himself.

19 Q. All right. Well, let's actually take a look at  
20 your demonstratives from 20 minutes ago.

21 Ms. Gray, let's pull up CDX-9.10.

22 And here at CDX-9.10 you say the patent claims  
23 separate cooling fluid paths, and you have excerpted Fig. 1  
24 and annotated to identify a first cooling path and a second  
25 cooling fluid path, correct?

1           A.    Was your last question related to '117 or  
2   Takahashi?

3           Q.    We can answer this question.  So here in your  
4   CDX-9.10, you state, the '117 patent claims separate cooling  
5   fluid paths, correct?

6           A.    I see that, yes.

7           Q.    And on this slide you have reproduced Fig. 1 from  
8   the '117 patent and annotated it to identify a first cooling  
9   path, a first cooling fluid path, and a second cooling fluid  
10  path, correct?

11          A.    They don't mix, correct.

12          Q.    And you also identify air inlet 61 for the first  
13  cooling path and air outlet 62 for the first cooling path,  
14  correct?

15          A.    That's right.

16          Q.    And you also identify air inlet 71 for the second  
17  cooling path, cooling fluid path, and air outlet 27 for the  
18  second cooling fluid path, correct?

19          A.    I've done that, right.

20          Q.    You agree that claim 1 of the '117 patent does  
21  not refer to any air inlet or air outlet, correct?

22          A.    It does not, you're correct.

23          Q.    Dr. Smith, I'd like to turn to the Karppanen '116  
24  prior art reference, still talking about the '117 patent.

25          A.    Okay.

1 Q. And I'd like to return to your demonstratives.

2 Ms. Gray, if we could move forward to CDX-9.12  
3 of -- 9.12 -- of Dr. Smith's demonstratives.

4 Dr. Smith, once again, in this demonstrative,  
5 you've highlighted in red the claim elements that you  
6 believe are not met -- are not disclosed by Karppanen '116,  
7 correct?

8 A. That's right.

9 Q. So you agree that the Karppanen '116 discloses  
10 each of 1[pre], 1[a], 1[b], 1[c], 1[d], 1[e], and element  
11 1[f] of the claim 1 of the '117 patent, correct?

12 A. I have not disputed that.

13 Q. So with respect to claim 1, the only element that  
14 you disclose in Karppanen '116 is element 1[g], correct?

15 A. Right, that's circuit board mounting part  
16 element, things associated with it.

17 Q. All right. Ms. Gray, I'm going to leverage you  
18 here. Can we split the screen and keep CDX-9.12 up and also  
19 pull up Dr. Smith's demonstrative at CDX-9.8?

20 Dr. Smith, you concede that the Takahashi  
21 reference -- this is with respect to your slide at  
22 CDX-9.8 -- you concede that the Takahashi reference  
23 discloses element 1[g] of the '117 patent, correct?

24 A. I have, yes, in the configuration of Takahashi.

25 Q. And you also agree that Takahashi discloses the

1 additional limitation of dependent claim 2 of the '117  
2 patent, correct?

3 A. It discloses those parts in the Takahashi  
4 configuration.

5 Q. So you would agree that the combination of  
6 Karppanen '116 -- excuse me. Strike that.

7 You would agree that a combination of Karppanen  
8 '116 and Takahashi discloses each and every element of  
9 claims 1 and 2 of the '117 patent, correct?

10 A. No, I wouldn't.

11 Q. You don't agree.

12 A. What was your question again?

13 Q. You don't agree that a combination of Karppanen  
14 '116 and Takahashi discloses each and every limitation of  
15 claims 1 and claims 2 of the '117 patent?

16 A. No, I don't.

17 Q. Which limitation are they missing? Am I  
18 misreading your red type here?

19 A. I think you're misinterpreting what these slides  
20 say.

21 In the case of what we're looking at on the right  
22 from CDX-0009 page 8 is the case of Takahashi. It's a panel  
23 display device of Takahashi, in the case of Takahashi, and  
24 the case which includes a circuit board mounting part of  
25 Takahashi.

1           For Karppanen '116, on the left, which is page  
2 12, this is the panel display device of Karppanen '116, its  
3 case and the lack of a circuit board mounting part for that  
4 case.

5           Q.   And that's your opinion having no hands-on  
6 experience with thermal management of electronic displays?

7           A.   That's my opinion, I believe, as one would read  
8 and understand these references.

9           Q.   All right. Let's switch gears to the '311 and  
10 the '253 patent.

11           I want to talk about the Gromatzky reference,  
12 which you have in your binder at RX-54. Once again, I want  
13 to return to your demonstratives, Dr. Smith.

14           Ms. Gray, if you would be kind enough to pull up  
15 CDX-9.23.

16           Dr. Smith, I want to understand, it's your  
17 opinion that Gromatzky does not invalidate the claims of the  
18 '311 patent because Gromatzky fails to disclose a  
19 temperature sensor, correct?

20           A.   Yes.

21           Q.   And in your opinion a person of skill in the art  
22 would not have been motivated to modify the invention of  
23 Gromatzky to include a temperature sensor as claimed by the  
24 '311 patent, correct?

25           A.   Yes, and it's a temperature sensor to measure the

1 temperature of air discharged from the channel, correct.

2 Q. Now, Dr. Smith, you personally have never  
3 designed or developed a temperature sensor for use in an LCD  
4 device, correct?

5 A. You're right.

6 Q. In fact, you've never even selected a temperature  
7 sensor to use in an LCD display device, correct?

8 A. I've selected temperature sensors, but I've not  
9 selected a temperature sensor for use in an LCD display.

10 Q. Now I understand you've taught courses involving  
11 sensors, correct?

12 A. Some, yes.

13 Q. And one of those courses was entitled Detectors,  
14 Sensors, and Displays, correct?

15 A. That's right.

16 Q. But because that was an imaging science course,  
17 there were no temperature sensors covered in that course,  
18 correct?

19 A. Other than IR detectors, you're correct.

20 Q. "IR" being infrared?

21 A. Infrared detectors.

22 Q. And, relatedly, in your own personal coursework,  
23 obtaining your degrees in imaging science, you did not have  
24 any coursework on temperature sensors other than infrared  
25 detectors, correct?

1 A. For 3D displays?

2 Q. Any coursework on temperature sensors.

3 A. Could you repeat that question?

4 Q. Yeah. And I'm happy to take your deposition  
5 testimony, if we need to.

6 But my question is, in your own coursework  
7 relating to your degrees in imaging science, you did not  
8 have any coursework on temperature sensors aside from  
9 infrared detectors.

10 A. Other than possibly some electrical engineering  
11 courses that may have included circuitry that could be used  
12 in a temperature sensor, but specifically I can't think of  
13 any.

14 Q. I want to turn to the Nagayama reference, a copy  
15 of which is at RX-08 -- 008.4 in your binder, but, once  
16 again, I want to return to your demonstratives.

17 Ms. Gray, if we could go to CDX-9.38.

18 Ms. Gray, CDX-9.38, please.

19 Dr. Smith, you concede that Nagayama discloses  
20 each claim element, 11[pre], 11[a], 11[b], 11[d], 11[e],  
21 11[f] of claim 11 of the '253 patent, correct?

22 A. I don't dispute that.

23 Q. And you agree that Nagayama also discloses the  
24 additional limitation of dependent claim 12, correct?

25 A. Those parts, I don't dispute that either.

1 Q. It's your opinion, however, that Nagayama does  
2 not disclose element 11[c], a sensor to measure temperature  
3 of air in the housing, correct?

4 A. That's right.

5 Q. Ms. Gray, let's move forward one slide to  
6 Dr. Smith's CDX-9.39.

7 Now, Dr. Smith, you agree that Nagayama discloses  
8 a temperature sensor TS, correct?

9 A. It's called TS attached to the back of the liquid  
10 crystal panel.

11 JUDGE MCNAMARA: I'm sorry, doctor, again, either  
12 your mic is off --

13 A. Thank you. It discloses a temperature sensor TS  
14 attached to the back of the liquid crystal panel 13.

15 Q. And we see that temperature sensor TS in Fig. 9  
16 of the Nagayama reference, which you have reproduced on  
17 CDX-9.39, correct?

18 A. Colored in red, correct.

19 Q. And for Your Honor and for the record here, it's  
20 located, to your point, attached to liquid crystal panel 19  
21 and it's attached at the bottom of that panel near the  
22 bottom of the front air passage AC-1, correct?

23 A. I think you described it well.

24 Q. And it's your opinion, your understanding of  
25 Nagayama, that this temperature sensor at that location

1 measures the temperature of the liquid crystal panel,  
2 correct?

3 A. That's what Nagayama says, and I think that's how  
4 one would understand it reading Nagayama.

5 Q. And it's your opinion that a skilled artisan,  
6 knowledgeable about thermal management in electronic  
7 displays, would never in a million years be motivated to  
8 modify that temperature sensor to measure air as opposed to  
9 the liquid crystal panel, correct?

10 A. I believe, based on what I've described a little  
11 bit earlier Nagayama, as it's described, and I've referred  
12 to Fig. 11 for support of that description, Nagayama works  
13 because the temperature sensor is measuring the liquid  
14 crystal panel itself, not air.

15 Q. So, in your opinion, a skilled artisan that works  
16 with thermal management of electronic displays, it's your  
17 opinion that skilled artisan would never be motivated to  
18 modify that temperature sensor to measure air as opposed to  
19 the panel itself. That's your opinion.

20 A. I don't think one reading Nagayama understanding  
21 it would be motivated to do that.

22 Q. All right. Let's turn to Karppanen '116.

23 You've got a copy of that at RX-83 in your  
24 binder, but, once again, I want to return to your  
25 demonstratives.

1           Ms. Gray, let's navigate ahead to CDX-9.42.

2           Dr. Smith, as reflected on CDX-9.42, you'll agree  
3 that Karppanen '116 discloses each of elements 11[pre],  
4 11[a], 11[b], 11[d], 11[e], and 11[f] of claim 11 of the  
5 '253 patent, correct?

6           A.    I don't dispute that.

7           Q.    And you also agree that Karppanen '116 discloses  
8 the additional limitation of dependent claim 12 of the '253,  
9 correct?

10          A.    As I've described and highlighted it here,  
11 highlighted in the red.

12          Q.    It's your opinion that Karppanen, however, does  
13 not disclose element 11[c], a sensor to measure a  
14 temperature of air in the housing, correct?

15          A.    In claim 12 because of that, correct.

16          Q.    Ms. Gray, let's move one slide ahead to CDX-9.43  
17 of Dr. Smith's demonstratives.

18                Once again, Dr. Smith, you agree that Karppanen  
19 '116 discloses temperature sensors, correct?

20          A.    It says temperature sensors, correct.

21          Q.    Now, in your opinion, Karppanen '116 discloses  
22 that those temperature sensors measure the temperature of  
23 the display casing, correct?

24          A.    That's what it says.

25          Q.    And it's your opinion that those temperature

1 sensors fail to measure the temperature of air in the  
2 casing, correct?

3 A. Well, they don't measure air. They measure those  
4 parts of the display casing or the display casing.

5 Q. Let me make sure I understand that. So it's your  
6 testimony that the temperature of the display casing  
7 measured by these temperature sensors in Karppanen '116 is  
8 not the temperature of air in the display casing in  
9 Karppanen '116?

10 A. That's not what it says. It says the temperature  
11 of the display casing.

12 Q. So that's not the temperature of air in the  
13 display casing?

14 A. That's right.

15 Q. All right. Lastly, I want to touch on the  
16 Outdoor Promotions product. And if we could, let's go ahead  
17 and navigate to your CDX-9.47.

18 And you heard, as I believe your counsel  
19 questioned you, you heard Mr. Flasck's opinions that the  
20 70-inch Outdoor Promotions unit was material to the  
21 patentability of at least claim 12 of the '311 patent and at  
22 least claim 1 of the '253 patent, correct?

23 A. I heard him say that, yes.

24 Q. In fact, you were in the courtroom and you saw  
25 Mr. Flasck demonstrate how the Outdoor Promotions 70-inch

1 bus shelter wedge product satisfied each and every  
2 limitation of claim 12 of the '311 patent, correct?

3 A. I believe I saw that, yes.

4 Q. And you, likewise, were in the courtroom and you  
5 saw Mr. Flasck demonstrate that the Outdoor Promotions  
6 70-inch bus shelter wedge product satisfied each and every  
7 limitation of claim 1 of the '253 patent, correct?

8 A. I remember him doing that.

9 Q. Now, Dr. Smith, you have not offered any opinions  
10 doing a claim-by-claim or element-by-element analysis with  
11 respect to the Outdoor Promotions 70-inch bus shelter wedge  
12 product with respect to either the '311 or the '253 patent,  
13 correct?

14 A. That's right.

15 Q. You, nonetheless, disagree with Mr. Flasck's  
16 conclusions that the Outdoor Promotions 70-inch product is  
17 material to the patentability of those claims, correct?

18 A. Yes, that's what I've said.

19 Q. And it's your opinion that the Outdoor Promotions  
20 70-inch product is not material because it has many of the  
21 same features of other prior art references that were  
22 identified during the prosecution of the '311 and the '253  
23 patent, correct?

24 A. I think that's what I said.

25 Q. And you've included one of those references here,

1 CX-1933 on this slide?

2 A. That's right.

3 Q. You understand, Dr. Smith, that the Outdoor  
4 Promotions 70-inch bus shelter wedge product included an  
5 air-conditioning unit, correct?

6 A. I recall that.

7 Q. And you have not offered any opinion as to  
8 whether CX-1933 includes an air-conditioning unit, correct?

9 A. No, but that includes a fan 32.

10 Q. But you have not offered any opinion that CX-1933  
11 includes an air-conditioning unit.

12 A. I don't believe CX-1933 includes an air  
13 conditioner.

14 Q. And, in fact, those other prior art references  
15 that you said disclose the same or very similar elements to  
16 the Outdoor Promotions product, you don't offer an opinion  
17 as to whether any of those included an air-conditioning  
18 unit, correct?

19 A. As relative to the '311, claim 12, and the '253  
20 claim 1, I didn't feel it necessary.

21 Q. So you didn't offer any opinion as to whether any  
22 of those prior art references considered during prosecution  
23 included an air-conditioning unit like the Outdoor  
24 Promotions 70-inch bus shelter wedge product.

25 A. I only considered things like the fan that's

1 disclosed in the European Gromatzky patent that was  
2 disclosed to the Patent Office.

3 Q. I think this is a yes or no. We're running short  
4 on time.

5 With respect to the prior art references that you  
6 contend disclose the same or very similar elements to the  
7 Outdoor Promotions product that were identified during  
8 prosecution of the '311 and the '253 patent, you did not  
9 offer any opinion as to whether any of those references  
10 discloses an air-conditioning unit as in the Outdoor  
11 Promotions 70-inch bus shelter wedge product.

12 A. That's correct.

13 MR. LEE: I pass the witness.

14 MR. KLINE: Nothing further, Your Honor.

15 JUDGE MCNAMARA: Thank you very much. Dr. Smith,  
16 you may step down.

17 THE WITNESS: Thank you, Your Honor.

18 MS. DABBIERE: Good afternoon, Your Honor.

19 Courtney Dabbieri for MRI. So we will be calling our  
20 rebuttal witness, Mr. Richard Flasck.

21 Can we just have five minutes?

22 JUDGE MCNAMARA: Sure.

23 MS. DABBIERE: Thank you.

24 (Brief interruption.)

25

1 JUDGE MCNAMARA: Please be seated.

2 RICHARD FLASCK,

3 having been previously duly sworn or affirmed  
4 on his oath, was thereafter examined and testified further  
5 as follows:

6 MS. DABBIERE: Your Honor, may we pass out a few  
7 binders?

8 JUDGE MCNAMARA: Yes, please.

9 MS. DABBIERE: Thank you.

10 DIRECT EXAMINATION

11 BY MS. DABBIERE:

12 Q. Good afternoon, Mr. Flasck. Welcome back.

13 A. Good afternoon.

14 Q. You were here for Dr. Smith's testimony  
15 addressing your invalidity opinions, right?

16 A. Yes.

17 Q. Before we get to those, will you remind us how  
18 many years you have worked with liquid crystal displays?

19 A. About 45.

20 Q. And how many years have you worked on thermal  
21 management of display devices?

22 A. About 45.

23 Q. Does your experience with thermal management  
24 systems include hands-on experience with temperature  
25 sensors?

1 A. Yes, a lot of that was benchwork by myself.

2 Q. And does your experience include hands-on  
3 experience using fans in display devices for thermal  
4 management?

5 A. Oh, yes.

6 Q. We've heard a lot about heat problems in display  
7 devices this week. Do other electronic devices have similar  
8 heat problems to display devices?

9 A. Absolutely. It's a fairly common problem.

10 Q. And in your experience, are the thermal  
11 management principles applicable across electronic devices?

12 A. Very similar, yes.

13 Q. So, for example, with the thermal management  
14 system used in a computer be applicable to the thermal  
15 management system in a display device?

16 A. In general, yes.

17 Q. And a thermal management system used in a  
18 projector would be applicable to display devices?

19 A. Yes. Well, that is a display device, but, yes.

20 Q. Are the components used in the thermal management  
21 systems of computers and projectors used in thermal  
22 management systems have LCD display devices?

23 A. I'm sorry. Ask it again.

24 Q. Are the components that are used in thermal  
25 management systems for computers and projectors also used in

1 the thermal management systems of display devices?

2 A. Yes.

3 Q. And can you give us some examples of components  
4 that are used across electronic devices?

5 A. Well, you generally have fans, you have  
6 temperature sensors, you have controllers, you know, various  
7 wiring to support that, and logic.

8 Q. Let's talk some about temperature sensors.

9 Ms. Gray, will you please pull up RDX-5C.107.

10 And let's zoom in on the excerpt from Hannemann,  
11 which is RX-88.

12 Mr. Flasck, what does Hannemann say about the  
13 number, type, and location of temperature sensors in display  
14 devices?

15 A. He says that they can vary. He says the internal  
16 temperature is monitored by at least one temperature sensor  
17 that is advantageously arranged in the upper region of the  
18 display unit. The number of the display sensors and their  
19 physical location within the display unit can vary without  
20 modifying the spirit of the invention. Said sensors can  
21 also be used to regulate cooling and heating.

22 Q. Thank you. Ms. Gray, you can take that down.

23 In the prior art were there temperature sensors  
24 that were used for measuring the temperature of components  
25 in a display device?

1 A. Yes.

2 Q. And were those different from temperature sensors  
3 that were used for measuring the temperature of air in  
4 display devices?

5 A. In general, yes.

6 Q. Have you used different types of temperature  
7 sensors in display devices?

8 A. Yes, I have.

9 Q. Have you used the same type of temperature sensor  
10 in different locations in a display device?

11 A. Well, you can change locations simply by  
12 detaching the sensor and removing it and reattaching it  
13 somewhere else.

14 Q. And setting aside the Asserted Patents for a  
15 second, what are the components in a display device that a  
16 person of skill in the art was concerned about overheating  
17 in 2007 and 2008?

18 A. Well, the most sensitive, heat-sensitive  
19 component, is the actual display itself, but the display may  
20 not generate a lot of heat by itself. That might come from  
21 the power supplies and the electronics.

22 But, yeah, you have to worry about the display's  
23 cell itself, the LC cell, the backlight, and the electronic  
24 componentry.

25 Q. And on your direct, I believe you discussed that

1 the prior art sought to dissipate heat to those components  
2 by measuring temperatures in the device and controlling a  
3 fan accordingly; is that right?

4 A. Yes.

5 Q. And you identified prior art references that  
6 disclose systems that control a fan based on measured  
7 temperatures as well?

8 A. Yes, several, yes.

9 Q. Now focusing on preventing overheating of one of  
10 the heat-generating components you mentioned, the display  
11 panel, what temperature would a person of skill in the art  
12 want to measure when trying to manage overheating of a  
13 display panel?

14 A. Well, generally, one wants to take a measurement  
15 that gives some information about the general health or the  
16 general heating environment around the display panel.

17 Q. And would a person of skill in the art ever want  
18 to measure the temperature of the display panel itself?

19 A. That could be done. You could attach a sensor, a  
20 heat sensor, to the panel itself, or I think what might be  
21 better, what would be better, is putting a heat and air  
22 sensor by the exit of the discharge channel.

23 Q. Why would placing the temperature sensor on the  
24 liquid crystal cell itself be worse than putting it in the  
25 channel?

1           A.   Well, there are a couple of aspects.  When you --  
2   when you attach the sensor to the LC cell itself, you have  
3   the possibility of fatigue and failure because of the  
4   temperature excursions that the cell goes through, and you  
5   have a thermal expansion mismatch between the glass of the  
6   cell and the temperature sensor material, whether it's metal  
7   or ceramic, that over time can cause failure.

8           The other problem is that, when you attach a  
9   sensor to a point on the liquid crystal cell itself, you're  
10   measuring one point.  You're not measuring the general  
11   health of the cell.  You're only measuring it at one point,  
12   which gives you much more limited visibility in terms of the  
13   risks.

14          Q.   And so where did you suggest would be a better  
15   place to position the temperature sensor?

16          A.   For measuring the general heat health of the  
17   equipment, one would want to place the sensor, an air  
18   sensor, at the exit of the channel.

19          Q.   And why would the exit of the channel be the best  
20   place to put it?

21          A.   Well, at the beginning of the channel, at the  
22   inlet to the channel, you have cool air, so a sensor there  
23   would not provide any information about the heat environment  
24   of the actual cell.

25          You wouldn't want to place it in the middle of

1 the channel for a couple of reasons. One, it might block  
2 the view from somebody watching it. The other is that the  
3 heat as it's traversing the channel, the heat of the air,  
4 the temperature of the air increases. So if you place it in  
5 the middle, you would get an intermediate temperature, but  
6 -- reading, but you wouldn't know what the worst case was as  
7 the -- as the air continued down or toward the exit of the  
8 channel.

9           You'd get the most information by placing the air  
10 temperature sensor at the exit of the channel, and that  
11 would give you a good idea of the heat environment and the  
12 health of the whole device, because that's measuring the  
13 maximum temperature of the air in that channel.

14       Q. And, in your opinion, for a person of skill in  
15 the art reviewing references related to management of the  
16 heat inside display devices, would a person of skill in the  
17 art have had a reasonable expectation of success in placing  
18 a temperature sensor near the outlet of the channel between  
19 the display panel and front protective glass if the  
20 reference didn't specify where the temperature sensor was  
21 supposed to be located?

22       A. Yes, that would be a fairly simple modification  
23 done in a predictable way with predictable expected results.

24       Q. I want to turn to your opinions on the '253  
25 patent and start with Nagayama.

1 Ms. Gray, will you please pull up RDX-5C.1417?

2 And we're looking at slide 147 of your  
3 demonstratives. And looking at this slide, it was your  
4 opinion that Nagayama either alone or in combination with  
5 Burstein renders obvious claims 11 and 12 of the '253  
6 patent; is that right?

7 A. Yes.

8 Q. Now you heard Dr. Smith earlier, and you agree  
9 that Nagayama doesn't specify whether the temperature sensor  
10 TS measures the temperature of air, right?

11 A. Yes.

12 Q. And Samsung and Dr. Smith assert that the  
13 disclosed temperature sensor in Nagayama does not measure  
14 the temperature of air, correct?

15 A. Correct.

16 Q. Would a person of skill in the art have been  
17 motivated to use a temperature sensor to measure the  
18 temperature of air in Nagayama's device?

19 A. I believe so.

20 Q. Why?

21 A. Well, as we discussed previously, measuring the  
22 temperature of a display cell, an LC cell, at one point  
23 gives you very limited information, number one, and, number  
24 two, the LC cell is delicate and it might crack or break  
25 with thermal expansion based on the thermal -- the

1 differential thermal expansion of the materials.

2 But, in addition, measuring the -- a POSITA would  
3 understand that measuring the temperature of the air at  
4 the -- that's discharged from the panel, at the exit of the  
5 panel, gives you the most accurate and general signal as to  
6 the -- as to the health of the panel.

7 Q. And we discussed different types of temperature  
8 sensors earlier. What type of temperature sensor would a  
9 person of skill in the art have used in Nagayama's device if  
10 he or she wanted to measure the temperature of air?

11 A. Well, there are a few different types of  
12 temperature sensors, but you'd want to use a temperature  
13 sensor for air, an air temperature sensor.

14 Q. And would a person of skill in the art have had a  
15 reasonable expectation of success in using an air  
16 temperature sensor in Nagayama's device?

17 A. Absolutely.

18 Q. How would a person of skill in the art modify  
19 Nagayama's device to include an air temperature sensor?

20 A. That would be fairly straightforward. A POSITA  
21 could disconnect and remove the temperature sensor in  
22 Nagayama that's attached to the back of the panel and simply  
23 replace it with an air temperature sensor located at the  
24 exit of the channel.

25 Q. Moving along, it was also your opinion that

1 Karppanen '116 alone or in combination with Gromatzky  
2 renders obvious claims 11 and 12 of the '253 patent, right?

3 A. Yes.

4 Q. And, again, you agree that Karppanen '116 doesn't  
5 specify whether its temperature sensor measures the  
6 temperature of air?

7 A. I think it's ambiguous, yes.

8 Q. And Samsung and Dr. Smith, you heard, assert the  
9 disclosed temperature sensor in Karppanen '116 does not  
10 measure the temperature of air.

11 A. I heard that.

12 Q. Would a person of ordinary skill have been  
13 motivated to use a temperature sensor to measure the  
14 temperature of air in Karppanen '116?

15 A. Yes.

16 Q. Why?

17 A. Again, for similar reasons. You want to -- you  
18 want to get the best measurement of the thermal health of  
19 the system, and to do that you would want to measure the  
20 temperature of the air that's being discharged from the  
21 channel.

22 Q. And as we discussed with Nagayama, would a person  
23 of skill in the art want to use an air temperature sensor  
24 with Karppanen '116's device if he or she wanted to measure  
25 the temperature of air?

1 A. Yes.

2 Q. And would a person of skill have had a reasonable  
3 expectation of success using an air temperature sensor in  
4 Karppanen '116's device?

5 A. Yes, there's no -- there's no impairment to that.

6 Q. And in Karppanen '116's device, how would a  
7 person of skill in the art modify it to include an air  
8 temperature sensor?

9 A. Again, you would replace the existing temperature  
10 sensor, if it was attached to the housing, would simply  
11 remove that one and put a temperature sensor for air  
12 attached so that the -- that the actual sensor element was  
13 sticking out into the air inside the case.

14 Q. Ms. Gray, you can take this down.

15 I want to turn now to your combination of  
16 Gromatzky and Utsunomiya for the '311 patent.

17 Mr. Flasck, did you hear Dr. Smith testify that  
18 the air velocities disclosed in Utsunomiya are in a laminar  
19 flow region?

20 A. I heard that.

21 Q. Does Utsunomiya limit its disclosed flow  
22 velocities to laminar flow regions?

23 A. I'm sorry. Ask it again.

24 Q. Does Utsunomiya limit its disclosed flow  
25 velocities to laminar flow regions?

1 A. No, Utsunomiya doesn't limit it to that.

2 Q. Would a person of skill in the art reading  
3 Utsunomiya understand that its disclosure of velocity ranges  
4 in a laminar flow region could also apply to a turbulent  
5 flow region?

6 A. Yes, absolutely.

7 Q. And does Utsunomiya disclose a turbulent flow  
8 region?

9 A. Yes, in column 15, I believe.

10 Q. Let's take a look at Utsunomiya. Ms. Gray, will  
11 you please pull up RX-87. And let's go to page 30, so  
12 RX-87.30. And can we zoom in on lines 18-21.

13 MR. REDDY: Objection, Your Honor.

14 JUDGE MCNAMARA: Mr. Reddy? Why are you  
15 objecting?

16 MR. REDDY: We don't believe that -- Srikanth  
17 Reddy for the Complainants.

18 The objection is that we don't believe there is  
19 any testimony concerning this portion of Karppanen disclosed  
20 in Mr. Flasck's report.

21 MS. DABBIERE: We're looking at Utsunomiya.

22 MR. REDDY: I'm sorry. The discussion -- that  
23 this discussion concerning Utsunomiya is in Mr. Flasck's  
24 report.

25 JUDGE MCNAMARA: So you're withdrawing your

1 objection?

2 MR. REDDY: No, we maintain the objection, that  
3 this particular discussion was not disclosed in Mr. Flasck's  
4 report.

5 JUDGE MCNAMARA: Was he deposed on this?

6 MR. REDDY: This reference was certainly  
7 disclosed.

8 JUDGE MCNAMARA: Was there any discussion of the  
9 substance that we're talking about now, on whether or not  
10 Utsunomiya discloses turbulence as well as the laminar flow?

11 MR. REDDY: There --

12 JUDGE MCNAMARA: Isn't that a matter of fact by  
13 just looking at Utsunomiya?

14 MR. REDDY: That's certainly possible,  
15 Your Honor. I would just -- this specific reference was not  
16 discussed in his deposition at all.

17 JUDGE MCNAMARA: Okay. File a motion to strike,  
18 Mr. Reddy, and you can file that tomorrow night. And it  
19 should be responded to the next night.

20 We're going to be reading and have read the  
21 entire patents. We're going to be re-reading them. If  
22 something is a matter of fact and it's not subject to  
23 opinion, where are you going?

24 MR. REDDY: Thank you, Your Honor. With that  
25 guidance, we'll withdraw our objection.

1 JUDGE MCNAMARA: Well, you're welcome to maintain  
2 it, but if the patent itself discloses that there is  
3 turbulence and you're objecting because an opinion hasn't  
4 been offered on whether or not the patent discloses  
5 turbulence in addition to laminar flow, what are we doing?

6 MR. REDDY: Your Honor, with that guidance, I  
7 think we'll withdraw our objection and we can proceed.

8 MS. DABBIERE: Thank you, Your Honor.

9 Q. Mr. Flasck, looking at RX-87.30, lines 18-21,  
10 what is this paragraph in Utsunomiya describing?

11 A. The paragraph here is describing turbulent flow  
12 in the -- well, in the channel.

13 Q. Ms. Gray, you can take this one down.

14 And so, Mr. Flasck, in your opinion, would a  
15 person of skill in the art recognize from Utsunomiya that  
16 its disclosed ranges of velocity for a laminar flow region  
17 could also apply to a turbulent flow region?

18 JUDGE MCNAMARA: Is it a matter of fact or -- is  
19 it a matter of fact or opinion? Is it in the patent or is  
20 it not? Is it a matter of interpretation that requires  
21 opinion?

22 MS. DABBIERE: That last question was an opinion  
23 question, Your Honor.

24 JUDGE MCNAMARA: Well, the question is, is it in  
25 the patent and disclosed in the patent as a matter of fact,

1 which requires interpretation, or is it there simply as a  
2 matter of fact and does not require interpretation?

3 MS. DABBIERE: Your Honor, we just showed the  
4 point in Utsunomiya where it is disclosed as a matter of  
5 fact that there is a turbulent region, and that's what  
6 Mr. Flasck --

7 JUDGE MCNAMARA: So why do you need an opinion on  
8 that?

9 MS. DABBIERE: Okay. I'll withdraw the question,  
10 Your Honor.

11 Q. Mr. Flasck, turning to your opinion on the '117,  
12 I want to talk about Takahashi briefly.

13 Ms. Gray, will you please pull up RDX-5C.34.

14 Mr. Flasck, looking at Fig. 4 of Takahashi, are  
15 rear liquid crystal panel cover and front liquid crystal  
16 panel cover 22 in Takahashi attached to each other at the  
17 sides?

18 A. Yes, 22 and 23 are attached to each other.

19 Q. And do rear liquid crystal panel cover 23 and  
20 front liquid crystal panel cover 22 encase the liquid  
21 crystal panel in Takahashi?

22 A. Yes, they encase the liquid crystal panel 21.

23 Q. Ms. Gray, you can take this down. Thank you.

24 Mr. Flasck, did you hear Dr. Smith's opinion that  
25 a person of skill in the art would not have been motivated

1 to combine Karppanen '116 and Takahashi because Takahashi is  
2 directed to a wall embedded device?

3 A. I heard that.

4 Q. Do you agree with that?

5 A. No, I don't.

6 Q. Before we address his opinion, do Karppanen '116  
7 and Takahashi both describe independent cooling of  
8 heat-producing display panels and circuit boards?

9 A. Yes.

10 Q. On direct I believe you testified that Karppanen  
11 '116 discloses a circuit board and a device case 12, was  
12 that right?

13 A. Yes.

14 Q. And you testified that a person of skill in the  
15 art would have been motivated to mount Karppanen '116's  
16 circuit board on rear surface 28 of the device case based on  
17 the cooling element 32.

18 A. Yes.

19 Q. But you agree with Dr. Smith that Karppanen '116  
20 does not disclose how the circuit board is mounted, right?

21 A. That's right.

22 Q. So, in your opinion, would a person of skill in  
23 the art look to other art that discloses separating  
24 heat-producing components and providing independent cooling  
25 for those components to see available options for mounting a

1 circuit board?

2 A. That would be natural, yes.

3 Q. References like Takahashi?

4 A. Like Takahashi.

5 Q. Now, how would a person of ordinary skill in the  
6 art incorporate Takahashi's circuit board mounting part into  
7 Karppanen '116?

8 A. Well, if you look at Takahashi, you can see that  
9 the -- that the rear case 23 has a particular printed  
10 circuit board mounting part where the circuit board fits in,  
11 and that would be advantageous from a couple of  
12 perspectives, and that would induce a person of ordinary  
13 skill in the art to use that type of contoured and  
14 structured piece in Karppanen.

15 Q. You mentioned "advantages." What are those  
16 advantages?

17 A. Pardon me?

18 Q. You mentioned advantages. What are those  
19 advantages?

20 A. Well, it would make assembly -- it would  
21 facilitate assembly. It would make assembly easier, because  
22 the part would fit in -- the circuit board would fit into a  
23 part. There wouldn't be any ambiguity about where it goes.  
24 And, also, it would enhance cooling with the -- with that  
25 contour.

1 Q. Would it matter in combining these references  
2 that Takahashi describes its devices as wall embedded?

3 A. No. Whether it's embedded in the wall partially  
4 or hung on a wall or freestanding, there's still liquid  
5 crystal devices and boxes that need cooling.

6 MS. DABBIERE: Pass the witness.

7 JUDGE MCNAMARA: And I would like to know also if  
8 there is a mechanical difference between a temperature  
9 sensor that would be -- that you would use across various  
10 types of technology as opposed to an air sensor.

11 THE WITNESS: I do apologize. My hearing isn't  
12 the best today.

13 JUDGE MCNAMARA: Mr. Reddy will ask you. It's  
14 now on the record, Mr. Flasck. You have never defined what  
15 an air temperature sensor is as a part -- apart from any  
16 other type of sensor, have you?

17 THE WITNESS: I do apologize.

18 JUDGE MCNAMARA: Okay. Have you ever defined  
19 what an air temperature sensor is mechanically as opposed to  
20 any other kind of sensor that's mentioned in a --

21 THE WITNESS: Sure. I've used air temperature  
22 sensors. I've used component temperature sensors.

23 JUDGE MCNAMARA: What's the difference in an air  
24 temperature sensor that you are saying that a person of  
25 ordinary skill would know to use across different kinds of

1 technologies as described in some of the prior art, and how  
2 is that mechanically different than any other type of sensor  
3 that is used, for example, in '117 or in '311 or '253?

4 THE WITNESS: Okay. There are several types of  
5 temperature sensors. The common air temperature sensor is  
6 -- it's like a -- it's like a pen top. It's a cylinder, a  
7 couple inches long, and you can -- you can -- there are  
8 holders or attachment points, and you can attach it to a  
9 surface and have the sensor tip hang out in air.

10 JUDGE MCNAMARA: The point being it's the same  
11 kind of device that measures heat?

12 THE WITNESS: Yes.

13 JUDGE MCNAMARA: The same kind of device that  
14 measures, again, as part of any thermal management system or  
15 could be?

16 THE WITNESS: Yes.

17 JUDGE MCNAMARA: Okay.

18 Go ahead, Mr. Reddy.

19 RECROSS-EXAMINATION

20 BY MR. REDDY:

21 Q. I'd like to start by asking you questions about  
22 the Takahashi reference.

23 May I have RX-82, please?

24 Now you testified on direct this time around,  
25 Mr. Flasck, that elements 22 and 23 encase the LCD. Do you

1 recall giving that testimony?

2 A. 22 and 23 form the -- form the case of relevance  
3 here, yes.

4 Q. Right. And you just testified that those two  
5 elements encase the LCD. That was the term you used?

6 A. They form the case, yes.

7 Q. Okay. Let's take a look at RX-82, page 10,  
8 please, and, in particular, paragraph 17.

9 Now, element 22 is the front liquid crystal panel  
10 cover, correct?

11 A. Yes.

12 Q. And you would agree, in looking at the first  
13 sentence, it states, quote, "the front liquid crystal panel  
14 cover 22 is for fixing the liquid crystal panel body 21 to  
15 the body of the wall embedded type liquid crystal panel unit  
16 1, and includes a frame 221 exposing the liquid crystal body  
17 21 on the front side."

18 Do you see that?

19 A. Yes.

20 Q. So you would agree that a portion of the liquid  
21 crystal panel is exposed in Takahashi, correct?

22 A. Yes.

23 Q. And if we can go to RX-82, page 13, please, and,  
24 in particular, Fig. 3.

25 Now element 23 is the rear liquid crystal cover

1 that we've been discussing, correct?

2 A. Yes.

3 Q. And element 22 is the front liquid crystal panel  
4 cover, correct?

5 A. Yes.

6 Q. And so, as we can see, there's a very large space  
7 in the middle of element 22, correct?

8 A. Yes.

9 Q. And it's your testimony that those two elements,  
10 22 and 23, are the case for purposes of the '117 patent,  
11 correct?

12 A. Yes.

13 Q. And element 21, just to wrap things up, is the  
14 liquid crystal body, correct?

15 A. Yes.

16 Q. Thank you. Moving on, Mr. Flasck, do you recall  
17 you were also asked some questions about the Utsunomiya  
18 reference? Do you recall that?

19 A. Yes.

20 Q. And, in particular, you were asked whether  
21 persons skilled in the art would be motivated or interested  
22 in measuring the temperature of a display panel. Do you  
23 recall that?

24 A. Yes.

25 Q. Let's take a look at RX-84, page 24, please, and,

1 in particular, paragraph 9.

2 Mr. Flasck, in paragraph 9, Nagayama discloses  
3 that, quote, "the present invention is made to resolve such  
4 problems, and is intended to provide a display device  
5 capable of efficiently dissipating heat generated from a  
6 flat panel display device," end quote.

7 Do you see that?

8 A. Yes.

9 Q. And so the purpose of Nagayama as disclosed is to  
10 provide heat dissipation to the display device, correct?

11 A. Yes.

12 Q. If we could now go to page 38 in RX-84, please.  
13 If I could have Fig. 9, please.

14 As we've been discussing, Mr. Flasck, the  
15 temperature sensor TS is attached to the front display  
16 panel, correct?

17 A. Yes.

18 Q. And element 11 is the housing, it's called  
19 housing within Nagayama, correct?

20 A. I believe that is called the housing.

21 Q. And that housing is sealed, right, sir?

22 A. Pardon me?

23 Q. The housing is sealed?

24 A. I believe -- well, yes, I believe so.

25 Q. Now you were also asked whether a person skilled

1 in the art would be motivated to measure the temperature of  
2 air in the channel. Do you recall being asked that?

3 A. Yes.

4 Q. And I believe you've identified four references  
5 that at least mention temperature sensors. Does that sound  
6 right?

7 A. Yes.

8 Q. One of them is Karppanen '116 and a second is  
9 Karppanen '125, correct?

10 A. Yes.

11 Q. And both of those references do not explicitly  
12 disclose measuring the temperature of air, correct?

13 A. Yes.

14 Q. And the other, the third reference you disclosed,  
15 or you discussed, with respect to temperature sensors, is  
16 Nagayama, correct?

17 A. Yes.

18 Q. And, of course, Nagayama is not measuring the  
19 temperature of air either, correct?

20 A. Yes.

21 Q. And, of course, the Burstein reference, as we  
22 discussed, is measuring the temperature inside of a  
23 computer, correct?

24 A. Well, it uses computers as examples, but yes.

25 Q. Thank you, sir.

1                   Finally, do you recall you were asked some  
2       questions about turbulent airflow in the context of the  
3       Utsunomiya reference?

4           A.    Yes.

5           Q.    Do you recall at your deposition, sir, you  
6       testified that Gromatzky is the only reference that you  
7       studied that explicitly talks about turbulent airflow?

8           A.    I don't specifically recall that, but that could  
9       be true.

10          Q.    Well, let's take a look at -- do you still have  
11       your red binder in front of you from this morning, sir?

12          A.    I'm sorry. What did you want me to look at?

13          Q.    The red binder that you were given this morning  
14       with your deposition transcript.

15                   For the record, Mr. Smith, could we have CX-1888,  
16       which is the deposition transcript, page 77, please.

17                   Mr. Flasck, if it's easier, we can just take a  
18       look at it on the screen.

19          A.    Yes. I don't seem to have a red binder here.

20          Q.    In that case, let's take a look at lines 21-25.  
21       Again, this is CX-1888.

22                   Mr. Flasck, were you asked:

23                   That Gromatzky is the only reference you have  
24       listed here that explicitly talks about turbulent airflow.  
25       Is that fair?

1 Did I read that correctly?

2 A. Yes, that's correct.

3 Q. Did you answer "yes"?

4 A. I did.

5 Q. Thank you, Mr. Flasck.

6 MR. REDDY: I'll pass the witness.

7 JUDGE MCNAMARA: Anything further?

8 MS. DABBIERE: No further questions.

9 JUDGE MCNAMARA: Thank you. Mr. Flasck, you may  
10 step down. Thank you.

11 MS. DABBIERE: Your Honor, could we have five  
12 minutes for Mr. Flasck to step down and rearrange seating?

13 JUDGE MCNAMARA: Sure.

14 (Brief recess.)

15 JUDGE MCNAMARA: Okay. Thank you, everybody. At  
16 this time are you heading into closings?

17 MR. KLINE: Samsung is, Your Honor.

18 MR. KORN: We are, Your Honor.

19 MR. KLINE: We're going to start out on the  
20 public record, Your Honor. Rather quickly, I would ask and  
21 I will obviously speak up about moving onto the MRI public  
22 record when I talk about infringement. From there I will  
23 ask if we can move onto the Samsung public record when I  
24 talk about domestic industry. And then, Your Honor, I'd  
25 like to reserve -- I expect -- we had allotted maybe 30

1 minutes for these, and I was going to reserve five minutes  
2 or so to respond. So I was not going to address validity or  
3 the inequitable conduct defense during this first time that  
4 I'm up and was going to reserve five minutes or so for that.

5 JUDGE MCNAMARA: That's fine. However you want  
6 to do it.

7 MR. KLINE: Thank you very much. Your Honor, I  
8 have a set of hard slides, if you'd like them.

9 JUDGE MCNAMARA: Yes, please.

10 MR. KLINE: Thank you, Your Honor. May I  
11 proceed?

12 JUDGE MCNAMARA: Yes, Mr. Kline.

13 MR. KLINE: I always try to start with "thank  
14 you." Your Honor, to give you a little insight into how we  
15 work, I send an email every morning to the team what the  
16 day's theme is, and people who have been through this with  
17 me before, they know that the theme on the last day is  
18 always the same, and that theme is always gratitude, because  
19 we're so thankful for the Court's time and the attention  
20 that you've given us. The thoughtful questions that you've  
21 asked have been encouraging to all of us to know that you're  
22 thinking hard about these issues, and we're grateful for  
23 that.

24 I, of course, thank my team. I'd say they are  
25 patient with one another, and they are, they are really

1 patient with me, Your Honor, and I'm grateful for that. And  
2 I don't say this all the time, Your Honor, but I would say  
3 thank you as well to the MRI team. We certainly have  
4 disagreed and we will continue to disagree with one another  
5 throughout this, I'm sure, but I think we've managed by and  
6 large to do so in a manner that wasn't disagreeable. And  
7 we've tried to get to court every morning with as many  
8 issues resolved as we could so that we could proceed in an  
9 orderly fashion.

10 JUDGE MCNAMARA: Let me comment on that. First  
11 of all, the gratitude, that's lovely, and I think that's  
12 something that is somehow a theme for all of us every day.

13 Secondly, it's been pretty apparent that both  
14 sides have worked together really well, and I'm grateful for  
15 that. It's also a measure of your professionalism. So  
16 kudos to all of you for working so well together and  
17 resolving issues that are very, very difficult.

18 MR. KLINE: Thank you, Your Honor. Thanks very  
19 much.

20 So now maybe on to some disagreements. We've  
21 heard a lot of evidence over the course of the week, and we  
22 see this as a bridge. I'm a little bit honored to hear this  
23 is only the second set of closing arguments you've heard in  
24 one of these matters. And I've sought advice from  
25 colleagues who have been before the court many times and

1 asked about closing for an ITC, and I've gotten the same  
2 answer every time. "I've never done a closing in the ITC."  
3 So we're all sort of figuring this out as we go along.

4 I'll tell Your Honor that we're trying to view  
5 this as a bridge from the hearing to the post-hearing  
6 briefs. It is not my intention late on the fifth day of  
7 trial to rehash all the evidence and to try to capture all  
8 the sites, but I am hopeful, while the experience is fresh  
9 in all of our minds, to talk about some of the themes that  
10 we have discerned, the issues that the Court is going to  
11 need to decide following the post-hearing brief and some of  
12 the evidence that we think relates and will be helpful to  
13 the Court in resolving some of those issues.

14 As for themes, Your Honor, I would start off  
15 with, we heard right from the jump from MRI, first or second  
16 sentence of the opening, this is not a normal ITC  
17 proceeding. This is a countersuit.

18 We would say two things about that, Your Honor.  
19 It's not my experience that that's not normal, and I'd say  
20 it doesn't matter anyway.

21 Samsung filed a complaint because MRI was  
22 infringing its patents. The ITC considered that complaint,  
23 found it well-grounded, instituted an investigation. We've  
24 gone through months of fact discovery. We've now had five  
25 days of oral hearing. The question is, does MRI infringe

1 Samsung's patents. The evidence has shown that it does.  
2 That's the inquiry for the Court.

3 We heard from MRI's opening about Samsung  
4 purchased an older product on eBay and tore it down, and  
5 that was the basis of the charts in the complaint.

6 Well, of course, we got testimony over the course  
7 of the hearing that we couldn't buy a product from MRI  
8 anyway. They wouldn't have sold us one. We, of course, had  
9 a lot of information concerning how MRI's products work from  
10 a variety of sources, including the 1331 investigation, but,  
11 nevertheless, wouldn't rely on that for filing a complaint.

12 And as far as the products at issue here today,  
13 it would have made no sense for us to try to prove  
14 infringement by an old MRI product that's no longer sold.  
15 What good use would that be putting the Court's time to,  
16 what remedy would we seek.

17 So we moved on to the products that actually MRI  
18 sells, the accused products in the case. We also heard  
19 right from the opening that Samsung dropped claims and  
20 patents along the way in the investigation. We know the  
21 Court's ground rules encourage that. From the very first  
22 management conference we had here, Your Honor, you asked,  
23 reasonably, we took it to heart, the parties should try to  
24 winnow the case as it moves forward.

25 You expressly asked us to consider whether our

1 case really benefits from having so many patents in it. We  
2 recognized that it didn't. It would not be a good use of  
3 this Court's time. We decided to go forward at this hearing  
4 with the patents that we went forward with, because it was  
5 the right thing to do, Your Honor.

6 With respect to MRI's noninfringement themes,  
7 there is a common theme throughout them. They try to import  
8 negative limitations into the claims, they argue about  
9 disavowals that are irrelevant to the claims we're asserting  
10 and that the court has rejected in its claim construction  
11 ruling, in any event.

12 I'll talk more about validity when I stand up in  
13 a few moments, Your Honor.

14 So, if I could, I'll try to cover four general  
15 areas in the time I have: the ITC's jurisdiction in this  
16 matter, and the question of importation; MRI's infringement  
17 of the asserted patents; Samsung's domestic industry in  
18 products embodying the asserted patents; and, as I  
19 mentioned, I will wait for validity until a moment from now.

20 Now with respect to ITC jurisdiction, we'll stay  
21 on the public record just for one more moment and let me say  
22 this. There is no dispute that the LCD cell in the accused  
23 MRI products is a critical component. Without it, they  
24 don't have a product. It's a limitation of all the claims.  
25 There is no dispute that that LCD cell is made outside of

1 the United States. It is imported into the United States.

2 The only dispute is whether MRI is importing the  
3 LCD products that form a critical component of the accused  
4 BoldVu« displays.

5 At that moment, Your Honor, I'd ask if we could  
6 go onto the MRI confidential record.

7 (Whereupon, the hearing proceeded in confidential  
8 session.)

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11 JX-0400C  
12 JX-0401C  
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21 JX-0410C  
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23 JX-0412C  
24 JX-0413C  
25 JX-0414C

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1 JX-0415C  
2 JX-0416C  
3 JX-0417C  
4 JX-0418C  
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21 JX-0435C  
22 JX-0436C  
23 JX-0437C  
24 JX-0438C  
25 JX-0439C

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1 JX-0440C  
2 JX-0441C  
3 JX-0442C  
4 JX-0443C  
5 JX-0444C  
6 JX-0445C  
7 JX-0446C  
8 JX-0447C  
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20 JX-0459C  
21 JX-0460C  
22 JX-0461C  
23 JX-0462C  
24 JX-0463C  
25 JX-0464C

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1 JX-0465C  
2 JX-0466C  
3 JX-0467C  
4 JX-0468C  
5 JX-0469C  
6 JX-0470C  
7 JX-0471C  
8 JX-0472C  
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21 JX-0485C  
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23 JX-0487C  
24 JX-0488C  
25 JX-0489C

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1 JX-0490C  
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1 JX-0540C  
2 JX-0541C  
3 JX-0542C  
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1 JX-0614C  
2 JX-0615C  
3 JX-0626C  
4 JX-0627C  
5 JX-0616C  
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1 JX-0637C  
2 JX-0638C  
3 JX-0639C  
4 JX-0640C  
5 JX-0641C  
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12 JX-0648C  
13 JX-0649C  
14 JX-0650C  
15 JX-0651C  
16 JX-0652C  
17 JX-0653C  
18 RESPONDENT'S DIRECT EXAMINATION OF JOHN SCHUCH  
19 RPX-0002C  
20 RESPONDENT'S DIRECT EXAMINATION OF RYAN HERRINGTON  
21 RX-0168  
22 CX-0013C  
23 CX-0014C  
24 CX-0016C  
25 CX-0041C

1 CX-0042C  
2 CX-0043C  
3 JX-1514C  
4 JX-1517C  
5 JX-1519C  
6 JX-1551C  
7  
8 Complainants' Cross-Examination of Michael Brown  
9 CX-0259C  
10 CX-0259C-A  
11 JX-0170C  
12 JX-0616C  
13 JX-0618C  
14 JX-0626C  
15 JX-0638C  
16 JX-0897C  
17 JX-0903C  
18 JX-0905C  
19 JX-0909C  
20 JX-0915C  
21 JX-0921C  
22 JX-0923C  
23 Complainants' Cross-Examination of Richard Flasck  
24 CX-0434  
25 CX-0801C

1 CX-1933  
2 RX-0047  
3 Complainants' Cross-Examination of Ryan Herrington  
4 CX-0032  
5 CX-0035  
6 CX-1964  
7 CX-1967  
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## 1 C E R T I F I C A T E

2 TITLE: COMPONENTS FOR CERTAIN ENVIRONMENTALLY PROTECTED

3 LCD DIGITAL DISPLAYS AND PRODUCTS

4 INVESTIGATION NO.: 337-TA-1349

5 HEARING DATE: Wednesday, October 11, 2023

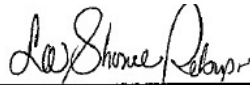
6 LOCATION: Washington, D.C.

7 NATURE OF HEARING: Evidentiary hearing

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above-referenced proceedings of the U.S. International  
Trade Commission.

10 Date: October 11, 2023

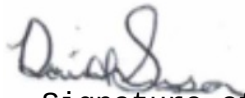
11 SIGNED:

12 Signature of the Contractor of the  
Authorized Contractor's Representative  
13 1220 L Street, N.W., Suite 206  
Washington, D.C. 20005

14

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