

UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	Investigation No.
CERTAIN ACTIVE MATRIX ORGANIC	)	337-TA-1351
LIGHT-EMITTING DIODE DISPLAY	)	
PANELS AND MODULES FOR MOBILE	)	
DEVICES, AND COMPONENTS THEREOF	)	



OPEN SESSIONS

Pages: 1 through 228 (with excerpts)
Place: Washington, D.C.
Date: July 8, 2024

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1 UNITED STATES INTERNATIONAL TRADE COMMISSION
2 Washington, D.C.
3 BEFORE THE HONORABLE BRYAN F. MOORE
4 Administrative Law Judge

5 _____
6 In the Matter of:) Investigation No.
7 CERTAIN ACTIVE MATRIX ORGANIC) 337-TA-1351
8 LIGHT-EMITTING DIODE DISPLAY)
9 PANELS AND MODULES FOR MOBILE)
10 DEVICES, AND COMPONENTS THEREOF)
11 _____

12
13 International Trade Commission
14 500 E Street, S.W.
15 Washington, D.C.

16
17 Monday, July 8, 2024

18
19 EVIDENTIARY HEARING - VOLUME I

20
21 The Hearing commenced, pursuant to the notice of the
22 Judge, at 9:42 a.m. Eastern.

23
24

25 Reported by: Karen Brynteson, FAPR, RMR, CRR

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

2 JUDGE MOORE: Do we have our next witness?

3 MR. LERNER: Jeff Lerner, Your Honor, for
4 Complainant.

5 By agreement, because of a scheduling issue, the
6 next witness will be Respondents' expert, Dr. Pattison, who
7 will be taken out of order.

8 JUDGE MOORE: Right. Let's go off the record
9 while we prepare for the next witness.

10 (Discussion off the record.)

11 JUDGE MOORE: All right. When you're ready.

12 MR. MEDINA: Good afternoon, Your Honor. My name
13 is David Medina from Orrick Herrington on behalf of Mianyang
14 BOE. Respondents call as their first witness Dr. Morgan
15 Pattison, who has now taken the stand.

16 Should we swear in the witness?

17 JUDGE MOORE: Yes. Let me get you sworn in.
18 Whereupon--

19 MORGAN PATTISON,
20 having been first duly sworn/affirmed, was examined and
21 testified as follows:

22

23 THE WITNESS: I do.

24 MR. MEDINA: Your Honor, may I approach the
25 witness to give him binders?

1 JUDGE MOORE: Yes.

2 MR. MEDINA: Excuse me, Your Honor, I need to get
3 one more binder. May I approach, Your Honor?

4 JUDGE MOORE: Yes.

5 DIRECT EXAMINATION

6 BY MR. MEDINA:

7 Q. Dr. Pattison, could you please state and spell
8 your name for the record.

9 A. Sure. Paul Morgan Pattison, P-a-u-l,
10 M-o-r-g-a-n, P-a-t-t-i-s-o-n.

11 Q. Dr. Pattison, you're one of Mianyang BOE's
12 technical experts here, correct?

13 A. Correct.

14 Q. And you're here to address the '803 and '578
15 patents, right?

16 A. Yes.

17 Q. Could you briefly describe your educational and
18 work experience.

19 A. Sure. I have a Bachelor's degree in electrical
20 engineering from the University of California at San Diego
21 in 1996 with a focus on electronic devices and materials.

22 After achieving that degree I went to work for
23 Cymer Laser in San Diego between 1996 and 2000. Cymer makes
24 lasers as semiconductor manufacturing tools, specifically
25 for photolithography.

1 In 2000, I went back to school at the University
2 of California, Santa Barbara and achieved a Master's degree
3 in electrical engineering with an emphasis in electronic and
4 photonic devices, in 2003.

5 And then continued on to get a Ph.D. in material
6 science with thesis research on light-emitting diodes. My
7 thesis advisor was Professor Shuji Nakamura. He got the
8 Nobel Prize for inventing the blue laser diode in 2014.

9 At UCSB I worked as part of the solid-state
10 lighting and display center. After 2006, I went to work as
11 a federal employee for the U.S. Department of Energy
12 managing R&D in energy efficient lighting technologies,
13 including LED and OLED technologies.

14 In 2008, I started my own consulting business
15 where I would advise clients on technology investments,
16 technology developments, and, you know, help them develop
17 products or select products. When I did that, the
18 Department of Energy came back and hired me as a consultant
19 to work with them.

20 So since 2008, I have been acting as a technical
21 advisor to the Department of Energy lighting program or
22 solid-state lighting program. Since about 2011, I have been
23 senior technical advisor to the DOE solid-state lighting
24 program.

25 I also advise, like I said, investors and

1 companies with regards to various optoelectronic and
2 lighting technologies.

3 Q. And are you an inventor of any patents, sir?

4 A. Yes. I think I have 11 patents.

5 Q. And have you authored any publications?

6 A. Yeah. I have a lot of technical journal articles
7 and also kind of trade articles.

8 MR. MEDINA: Your Honor, we offer Dr. Pattison as
9 an expert in the field of display technology, including OLED
10 displays and pixel arrangements.

11 JUDGE MOORE: All right. Any objections?

12 MR. LERNER: No objection, Your Honor.

13 MR. MAAS: No objection.

14 JUDGE MOORE: Okay. He is admitted for that
15 purpose.

16 BY MR. MEDINA:

17 Q. Dr. Pattison, what were you asked to review in
18 this litigation?

19 A. The Samsung pixel patents, '578 and the '803
20 patents.

21 Q. And did you render any opinions about claim
22 construction?

23 A. Yes.

24 Q. Did you render any opinions about the validity of
25 the '803 or '578 patents?

1 A. Yes.

2 Q. What were those opinions?

3 A. They are not valid.

4 Q. And did you render any opinions regarding whether
5 any of the Mianyang BOE products infringe the '803 or '578
6 patents?

7 A. Yes.

8 Q. And that, again, at a high level, what were those
9 opinions?

10 A. They don't infringe.

11 Q. And did you render any opinions as to whether the
12 Samsung -- the SDC domestic industry product practiced the
13 '803 or '578 patents?

14 A. Yes.

15 Q. And, again, at a high level, what were those
16 opinions?

17 A. They don't practice the patents.

18 Q. And did you render any opinions regarding the
19 adjudicability of the non-infringing alternatives that were
20 related to the '803 and '578 patents?

21 A. Yes.

22 Q. And, again, at a high level, what were those
23 opinions?

24 A. They are adjudicable.

25 Q. Dr. Pattison, did you submit any witness

1 statements as part of these proceedings?

2 A. Yes.

3 Q. I would like to direct your attention to the
4 first binder with an Exhibit Number RX-004C. Do you
5 recognize that exhibit?

6 A. Yes.

7 Q. And is that exhibit a copy of your direct witness
8 statement?

9 A. Yes.

10 Q. Could you please turn to the last page of that
11 exhibit.

12 A. I'm there.

13 Q. Is your signature -- is that your signature on
14 the last page of the exhibit, sir?

15 A. Yes.

16 Q. I would now like you to open the other folder
17 which has been marked RX-1084C-NCT. Do you have that?

18 A. It is open.

19 Q. And is that a copy of your rebuttal witness
20 statement?

21 A. Yes.

22 Q. Same deal. Could you turn to the last page of
23 that one.

24 A. I'm there.

25 Q. Is that your signature on the last page, sir?

1 A. Yes.

2 MR. MEDINA: Your Honor, we move to admit these,
3 the direct and rebuttal witness statements in these
4 proceedings.

5 JUDGE MOORE: Any objection?

6 MR. LERNER: No objection, Your Honor.

7 MR. MAAS: No objection.

8 JUDGE MOORE: All right. So they both are
9 admitted.

10 MR. MEDINA: That's all I had. I am ready to
11 pass the witness.

12 JUDGE MOORE: All right.

13 When you're ready.

14 MR. LERNER: We're going to get Dr. Pattison some
15 cross binders.

16 JUDGE MOORE: Okay. Let's go off the record
17 briefly.

18 (Discussion off the record.)

19 JUDGE MOORE: All right. Back on the record.

20 When you're ready.

21 MR. LERNER: Thank you, Your Honor, Jeff Lerner
22 on behalf of Complainant.

23 CROSS-EXAMINATION

24 BY MR. LERNER:

25 Q. Good afternoon, Dr. Pattison.

1 A. Good afternoon.

2 Q. I would like to start with what analysis you
3 carried out and didn't carry out in this investigation. You
4 understand that BOE produced samples of most of the BOE
5 accused products?

6 A. I do.

7 Q. And you understand that Samsung Display produced
8 samples of domestic industry products?

9 A. I do.

10 Q. You didn't make any measurements on the BOE
11 accused products, right?

12 A. No.

13 Q. No, you didn't make any measurements?

14 A. No, I didn't make any measurements.

15 Q. And you didn't make any measurements on the
16 Samsung domestic industry products, correct?

17 A. No, I did not.

18 Q. You didn't carry out any teardowns?

19 A. No, I was not asked to carry out any teardowns or
20 do any analysis explicitly on the products.

21 Q. You had access to tear down images created by
22 Samsung Display's experts, correct?

23 A. Correct. I reviewed Samsung Display's experts'
24 evaluation and methodology.

25 Q. And you didn't carry out any measurements of your

1 own on the teardown images, correct?

2 A. No, I did not.

3 Q. And you didn't carry out any calculations of your
4 own on any teardown images, correct?

5 A. No, I did not.

6 Q. You had access to the GDS files for the BOE
7 accused products in the Samsung Display domestic industry
8 products, correct?

9 A. Correct.

10 Q. And you agree that GDS files are the type of file
11 a person of ordinary skill in the art would reasonably rely
12 on to evaluate pixel arrangements?

13 A. I guess I'd refer back to what Professor Kymissis
14 said. That's kind of the ideal, but as he said, you know,
15 the manufactured process -- product is really what matters.
16 So that's the starting point.

17 But I think you really need to take measurements
18 of the actual products themselves and I evaluated Professor
19 Kymissis's and Professor Fontecchio's process there and
20 that's -- that's what I did.

21 Q. Let's pull up your direct witness statement,
22 Dr. Pattison, RX-4C.114. And, Your Honor, we will go on the
23 confidential record for this, please.

24 JUDGE MOORE: Okay.

25 MR. LERNER: This will be BOE confidential

1 information.

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

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1 CERTIFICATE OF REPORTER

2 TITLE: Certain Active Matrix Organic Light-Emitting Diode
3 Display Panels

4 INVESTIGATION NO: 337-TA-1351

5 HEARING DATE: July 8, 2024

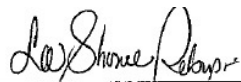
6 LOCATION: Courtroom A

7 NATURE OF HEARING: Evidentiary Hearing

8 I hereby certify that the foregoing/attached
9 transcript is a true, correct and complete record of the
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Trade Commission.

10 Date: July 8, 2024

11 SIGNED:

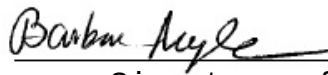


12 Signature of the Contractor of the
Authorized Contractor's Representative
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14

I hereby certify that I am not the Court Reporter
15 and that I have proofread the above-referenced transcript
of the proceedings of the U.S. International Trade
16 Commission, against the aforementioned Court Reporter's
notes and recordings, for accuracy in transcription in the
17 spelling, hyphenation, punctuation and speaker
identification and did not make any changes of a
18 substantive nature. The foregoing/attached transcript is a
true, correct and complete transcription of the
19 proceedings.

20 SIGNED:



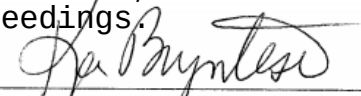
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21

I hereby certify that I reported the above-referenced
22 proceedings of the U.S. International Trade Commission and
caused to be prepared from my tapes and notes of the
23 proceedings a true, correct and complete verbatim recording
of the proceedings.

24

SIGNED:



25 Signature of the Court Reporter

UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	Investigation No.
CERTAIN ACTIVE MATRIX ORGANIC	)	337-TA-1351
LIGHT-EMITTING DIODE DISPLAY	)	
PANELS AND MODULES FOR MOBILE	)	
DEVICES, AND COMPONENTS THEREOF	)	

OPEN SESSIONS

Pages: 229 through 517 (with excerpts)
Place: Washington, D.C.
Date: July 9, 2024

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2 Washington, D.C.
3 BEFORE THE HONORABLE BRYAN F. MOORE
4 Administrative Law Judge

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7 CERTAIN ACTIVE MATRIX ORGANIC) 337-TA-1351
8 LIGHT-EMITTING DIODE DISPLAY)
9 PANELS AND MODULES FOR MOBILE)
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11 _____

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13 International Trade Commission
14 500 E Street, S.W.
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16
17 Tuesday, July 9, 2024

18
19 EVIDENTIARY HEARING - VOLUME II

20
21 The Hearing commenced, pursuant to the notice of the
22 Judge, at 9:42 a.m. Eastern.

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

2 (9:00 a.m.)

3 JUDGE MOORE: Please be seated.

4 All right. On the record, on the public record.
5 Good morning.

6 I see that the exhibits went in this morning, so
7 I think we're covered on that. Are there any housekeeping
8 or objections that we need to deal with before we continue
9 with the witness, starting with the Complainant?

10 MR. LERNER: Your Honor, Jeff Lerner on behalf of
11 Complainants. Do we need to move the exhibits into evidence
12 formally on the record?

13 JUDGE MOORE: No. No. I mean, thank you for the
14 reminder. Just as a formality, I'll make sure that I get it
15 on the record, so why don't we do that right now.

16 The exhibits that were e-mailed to the reporter
17 this morning are admitted into the record.

18 (Exhibits, as submitted by counsel and reflected
19 in the attached index, were received into evidence.)

20 JUDGE MOORE: Thank you for that.

21 MR. LERNER: Thank you, Your Honor. Nothing
22 further from Complainant.

23 JUDGE MOORE: All right. Respondents?

24 MR. de BLANK: Nothing from Respondents, Your
25 Honor. Thank you.

1 JUDGE MOORE: Yes. Somehow it wants to bounce
2 back, you know. I have the same problem. I hit it and then
3 I turn it right back off somehow.

4 MR. MAAS: Nothing from the Staff, Your Honor.

5 JUDGE MOORE: All right. Okay.

6 Do we have our witness? Let's go off the record
7 briefly and bring him up.

8 (Discussion off the record.)

9 Whereupon--

10 MORGAN PATTISON,
11 having been previously duly sworn/affirmed, was examined and
12 testified as follows:

13 JUDGE MOORE: Back on the record.

14 And good morning. And as a reminder, you are
15 still under oath.

16 THE WITNESS: Good morning.

17 JUDGE MOORE: When you're ready.

18 MR. LERNER: Thank you, Your Honor. Jeff Lerner
19 on behalf of Complainant.

20 CROSS-EXAMINATION

21 BY MR. LERNER:

22 Q. Good morning, Dr. Pattison.

23 A. Good morning.

24 Q. Dr. Pattison, yesterday we were discussing the
25 "enclose" limitation of claim 4 of the '803 patent. Do you

1 recall that?

2 A. Yes.

3 Q. And you submitted a declaration to the Patent
4 Trial and Appeal Board in support of a petition for inter
5 partes review by BOE addressing that claim, correct?

6 A. Yes.

7 Q. Let's pull up CX-3611. And if we turn to page
8 122, underneath the oath, that's your signature?

9 A. Yes.

10 Q. Now let's turn to page 57 of CX-3611.

11 For the "enclosed" limitation of claim 4, you
12 provide the same demonstrative that we discussed yesterday
13 as RDX-4.86, correct?

14 A. Yes.

15 Q. And you argued to the PTAB that the arrangement
16 drawn in that figure meets the requirements of the
17 "enclosed" limitation of claim 4, correct?

18 A. Yes.

19 Q. Now, yesterday you testified that personally you
20 don't think this encloses, correct?

21 A. Yes. I mean, my -- I did this, I believe, before
22 this report was put in, prior to my next report. So I'd say
23 my thoughts on this have changed, yes.

24 Q. And you submitted another declaration to the
25 Patent Office in the same IPR proceeding a few weeks ago,

1 correct?

2 A. A few weeks ago? Can you show it to me? I don't
3 -- I don't recall.

4 Q. Let's pull up tab 2 in the cross binder. Tab 4
5 in the cross binder, please.

6 Do you see Reply Declaration of Morgan Pattison,
7 Ph.D.?

8 A. Yes.

9 Q. And this is in a proceeding involving the '803
10 patent?

11 A. Yes.

12 Q. That's the patent we've been discussing?

13 A. Yes.

14 Q. If we go to the last page of this, and that's
15 your signature?

16 A. Yes.

17 Q. And you understand this was submitted several
18 weeks ago?

19 A. I didn't see the date.

20 JUDGE MOORE: Counsel, do we have an exhibit
21 number for this?

22 MR. LERNER: This is not an exhibit, Your Honor.
23 This is for impeachment.

24 JUDGE MOORE: Okay.

25 MR. LERNER: This was -- I'll represent, this was

1 only submitted a few weeks ago, so it wasn't available when
2 the parties created the exhibit lists.

3 JUDGE MOORE: All right. Okay. Continue.

4 BY MR. LERNER:

5 Q. You submitted this declaration, correct?

6 A. Yeah. I don't see the date on it.

7 Q. Okay. We'll have public dates that indicate when
8 it was submitted, but you understand it was relatively
9 recent, correct?

10 A. Yeah, I suppose so.

11 Q. Okay. And you don't offer any clarification or
12 statement to the Patent Office in your supplemental
13 declaration, your reply declaration, that you no longer
14 agree with the theory you presented as to claim 4 in your
15 opening declaration, correct?

16 A. I need to review this again to make sure, but,
17 yeah, I don't think I made that change.

18 Q. Okay. And will you be submitting a declaration
19 to the Patent Office to inform them that the argument you
20 presented in your declaration under oath is not a theory you
21 currently believe in?

22 A. I'm not sure about that.

23 Q. Okay. Let's pull up the '803 patent, which is
24 JX-3.

25

1 JUDGE MOORE: Okay. Counselor, just, of course,
2 for the record, you've used it. There has been no objection
3 to the previous, but we do need to get a number and get that
4 into evidence, so that when we deal with the ID, we'll know
5 how to deal with that.

6 MR. LERNER: Thank you, Your Honor.

7 JUDGE MOORE: So can you make sure that that is
8 done?

9 MR. LERNER: Yes. If acceptable to Your Honor,
10 we'll assign it a exhibit number after this, and then we'll
11 state that for the record clearly.

12 JUDGE MOORE: Certainly.

13 MR. LERNER: Referring to it as the reply
14 declaration of Dr. Pattison in the '803 IPR proceeding.

15 JUDGE MOORE: Okay.

16 MR. LERNER: Thank you, Your Honor.

17 BY MR. LERNER:

18 Q. Can we please pull up, Mr. Fisher, Figure 5 of
19 the '803 patent. And next to Figure 5, can we pull up
20 column 8, starting at line 31 to line 42.

21 Dr. Pattison, do you see that in column 8,
22 line -- about 32 to 42, the specification is discussing
23 Figure 5?

24 A. I see that.

25 Q. And beginning a the line 39, it says, "In

1 addition, by enclosing each of the first pixels by a pair of
2 the second pixels and a pair of the third pixels, the
3 aperture ratio of the first pixels, the second pixels, and
4 the third pixels may be improved."

5 A. I see that.

6 Q. So the specification is describing the drawing
7 shown in Figure 5 as one in which the second and third
8 pixels enclose the first pixel in a virtual square, correct?

9 A. That's what it says, yeah.

10 MR. LERNER: Your Honor, we'll now go on the
11 confidential record for BOE's CBI.

12 JUDGE MOORE: Okay.

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 JUDGE MOORE: On the public record.

3 BY MR. LERNER:

4 Q. Yamada points out that different materials will
5 have different chromaticity coordinate values, right?

6 A. Yeah, basically different colors.

7 Q. And Yamada discloses that different materials
8 will have different emission efficiency values, correct?

9 A. Yeah, and efficiency will also relate to the
10 lifetime, because they have to be driven to balance the
11 white point.

12 Q. And so, according to Yamada, the appropriate
13 ratio of sizes of the emissive regions depends on the
14 specifics of the materials being used for the red, the
15 green, and the blue light emitters, correct?

16 A. Yeah, and the color point you're trying to
17 achieve.

18 Q. And you didn't consider any particular materials
19 in your analysis of the prior art, correct?

20 A. Not any particular materials, just the
21 understanding expressed that blue -- blue OLED emitters are
22 generally much less efficient and have much lower lifetimes
23 than the red and green materials, but, you know, they have
24 -- all of the materials have gotten brighter over time. So
25 -- so that's just generally true. It has been true for a

1 long time that blues are deficient in lifetime and
2 efficiency.

3 Q. I just wanted to be clear --

4 A. Sure.

5 Q. -- in your analysis of the prior art, you didn't
6 consider any particular materials for emitting blue, red,
7 and green light, correct?

8 A. No. That's --

9 Q. Okay. Thank you.

10 A. A person of skill in the art would know that's an
11 easy design choice to adjust the sizes based on those
12 considerations.

13 Q. And according to Yamada, even when the emission
14 efficiency of materials follows the same relationship, for
15 example, if green is more efficient than red is more
16 efficient than blue, the emission areas for red, green, and
17 blue may be ordered differently, correct?

18 A. Yeah. You have to balance multiple factors.

19 Q. Okay. For example, Yamada says that if your
20 green is the most efficient, your red intermediate, and your
21 blue the least efficient, you might have the red and blue
22 emission areas being the same, correct?

23 A. It depends on, yeah, the exact wavelengths also
24 and the chromaticity, like you said, and the chromaticity
25 requirements for the display. There's really just multiple

1 tradeoffs and design considerations that a person of skill
2 in the art would consider, yeah.

3 Q. But one of the options that Yamada says is you'd
4 have red be the same size as green, and those would be
5 smaller than blue, correct?

6 A. Yeah.

7 Q. Or you might have red be the same size as blue,
8 correct?

9 A. Yeah. These would be basic design choices.

10 Q. And those are all -- strike that.

11 But in your opinion, a person of ordinary skill
12 in the art would recognize it would not be a good idea to
13 make blue the same size as red, correct?

14 A. Correct. Just like I said, it's well known in
15 the art, and this is something I've been working on for
16 decades, managing projects to improve blue OLED materials
17 since 2006, projects at UDC and other places that DOE
18 funded. Blue has always been the weak point with -- among
19 OLED emitters.

20 Q. Okay. And you testified in deposition that you
21 struggled to see a reason why a person skilled in the art
22 would want to make green the same size as red, correct?

23 A. Yeah, because not only is green very efficient
24 and typically equally efficient as red, but humans perceive
25 green as brighter for the same efficiency, so they have

1 higher luminance efficacy. So, you know, there's probably
2 situations where a person of skill in the art might want to
3 make them the same size, but generally you'd make green
4 smaller.

5 Q. Okay. But you, yourself, struggle to see a
6 reason why someone would make green the same size as red,
7 which is one of the options that Yamada says might be used?

8 A. Yes.

9 Q. Yamada is concerned with emissive areas of the
10 three different color sub-pixels, the red, green, and blue,
11 correct?

12 A. Yes.

13 Q. And in this RGB, this triple pixel arrangement,
14 the only way to change the relative light-emitting area of
15 red versus blue versus green is to change the pixel areas,
16 correct?

17 A. Can you repeat the question?

18 Q. Sure. In an RGB structure, where you have equal
19 numbers, as we discussed before, of red, green, and blue, to
20 change the emissive areas of those colors, you'd have to
21 change the physical size of the light-emitting area of the
22 pixel, correct?

23 A. Yeah.

24 Q. But there are other arrangements that have
25 different numbers of sub-pixels, correct?

1 A. Yeah, there's the quad pixel arrangement.

2 Q. And in those, you can increase the light-emitting
3 area of a particular color by having an excess of sub-pixels
4 of that color, correct?

5 A. Yeah. It gives you another level of design
6 freedom.

7 Q. And, for example, in a quad pixel structure,
8 someone could have, if they wanted, more light-emitting area
9 for blue, two blue sub-pixels, one green and one red, right?

10 A. They could, yes.

11 Q. Now, Yamada, the reference you rely on, was
12 before the Patent Office in the prosecution of all of the
13 patents at issue here, correct?

14 A. It was -- can you --

15 Q. It was before the Patent Office in the
16 prosecution of the '803 and the '578 patents, right?

17 A. I don't recall that.

18 Q. You don't know one way or another?

19 A. I just don't remember.

20 Q. Okay. But you know that Yamada has been
21 criticized in the prior art, correct?

22 A. Yes.

23 Q. Let's look at an example, CX-3435. This is a
24 reference to Arnold, correct?

25 A. Yeah.

1 Q. And this is assigned to the Eastman Kodak
2 Company?

3 A. Yes.

4 Q. Kodak was well known for their work in OLEDs?

5 A. Yeah, they invented the OLED.

6 Q. And this is a patent that was issued in 2004,
7 correct?

8 A. Yes.

9 Q. And if we turn to Arnold, column 15, lines 58 to
10 61, Arnold has an example 3 where Arnold states, "In this
11 example, the method of Yamada in U.S. Patent Number
12 6,366,025 is used to determine the relative red, green, and
13 blue areas."

14 Do you see that?

15 A. I see it.

16 Q. Okay. And that patent number is the same Yamada
17 that you discuss in your expert witness statement, correct?

18 A. I don't recall the exact number, but I'll take
19 your word for it.

20 Q. Well, why don't we just pull up RX-172 for a
21 clear record and put it side-by-side with this.

22 A. Okay. I see that.

23 Q. So Arnold is discussing the same Yamada patent
24 that you discuss in your expert witness statement, correct?

25 A. Correct.

1 Q. Okay. And if we turn to column 16, lines 15 to
2 21, Arnold concludes from its analysis using Yamada to
3 determine the relative red, green, and blue areas that "the
4 relative areas of the red, green, and blue light-emitting
5 elements is red to green to blue of 2.6 to 1, to 1.6,
6 indicating that the red light-emitting element should be 2.6
7 times the size of the green light-emitting element, and the
8 blue light-emitting element should be 1.6 times the size of
9 the green light-emitting element." Correct?

10 A. I see that.

11 Q. And so when Arnold applied Yamada, it ended up
12 concluding that the relative areas would be red, the
13 largest; blue, intermediate; and green, the smallest,
14 correct?

15 A. Yeah, but I disagree with this analysis. I mean,
16 what Yamada is teaching is adjusting the size of the pixels
17 based on the underlying efficiency. This specific
18 methodology is an embodiment of that teaching of what he's
19 criticizing here, but he's basically corroborating the idea
20 that you can adjust the pixel size based on the efficiency.

21 Q. I just want to be clear, in 2004 when Arnold is
22 applying Yamada's method to actual materials, the conclusion
23 Arnold reaches is that it would yield a result of red bigger
24 than blue, correct?

25 A. Sure.

1 Q. And you haven't analyzed in your analysis any
2 particular materials, have you?

3 A. No. I stuck with my understanding that blue is
4 the least efficient, so according to Yamada, it would be the
5 biggest, and --

6 Q. And do you think the researchers at Kodak didn't
7 know blue was least efficient?

8 A. I think that there's other considerations
9 involved. And this is, you know -- what they're talking
10 about is a critique of a -- of a usage of the basic
11 understanding of the ability to resize pixels based on the
12 efficiency of the underlying organic material.

13 Q. Let's turn to column 2 of Arnold, lines 27 to 41.

14 And here Arnold is again discussing Yamada, the
15 same Yamada reference that you discuss in your witness
16 statement, correct?

17 A. Yes.

18 Q. And beginning at line 35, Arnold says, "However,
19 Yamada fails to discuss other important characteristics of
20 OLED materials that will affect device lifetimes, such as
21 the differences in the inherent luminance stability over
22 time of different materials. Yamada further does not
23 consider important optical characteristics of the target
24 display design, each of which will influence the overall
25 lifetime of OLED materials."

1 Correct?

2 A. I see that, but I don't agree that --

3 Q. Okay. You don't agree with it?

4 A. -- with that analysis. No.

5 Q. But Arnold was criticizing Yamada for not taking
6 into account relevant considerations for OLED displays?

7 A. But it's clear that Yamada did take into account
8 chromaticity, which is the luminance at issue, right? So --
9 and that's a human -- the human eye response. So I would
10 disagree with this and it's --

11 Q. Dr. Pattison --

12 A. -- yeah.

13 Q. -- if you go to the previous sentence from what I
14 just read to you, Arnold notes that Yamada considers the
15 emission efficiency of the material, the chromaticity of
16 each of emissive materials, and the chromaticity of the
17 target display when attempting to determine the aim
18 light-emissive element areas, correct?

19 A. Yeah.

20 Q. And then it goes on to criticize it for failing
21 to consider other important characteristics that affect
22 device lifetime, correct?

23 A. Yeah, but, like I said, I disagree. I think if
24 you're evaluating chromaticity, you're evaluating luminance.

25 Q. Okay. So you disagree with how the Kodak

1 researchers were understanding Yamada?

2 A. Yes. Cok has a similar -- there's another
3 reference from Kodak that I reference, the Cok reference. I
4 don't remember the number. He has a similar -- a similar
5 critique of the exact implementation of Yamada's basic
6 premise that you can resize pixels based on their
7 efficiency. But Yamada shows blue pixels being the largest
8 in his -- in his figures as well.

9 Q. Now, if we could turn to Arnold Figure 5. Arnold
10 describes a quad pixel structure with two blue sub-pixels,
11 one red, and one green, correct?

12 A. Yes.

13 Q. Now, if we could turn to the Kusakabe reference,
14 RX-171, and pull that up.

15 Dr. Pattison, in your expert report, you cited to
16 Kusakabe, Exhibit RX-171, as disclosing OLED displays,
17 correct?

18 A. Yes.

19 Q. This was published in 2006?

20 A. Yes.

21 Q. And if we could turn to Figure 6A, you offered
22 opinions about Figure 6A of Kusakabe, correct?

23 A. Yes.

24 Q. And Figure 6A of Kusakabe shows the
25 light-emitting area of red is larger than the light-emitting

1 area of the blue pixel, correct?

2 A. Yes.

3 Q. And in Figure 6A, the emission area of blue and
4 the emission area of green are the same, correct?

5 A. Yes.

6 Q. Now, if we could turn to the Phan reference,
7 RX-169. I'd like to pull up your demonstrative, RDX-4.56 --
8 please, Mr. Fisher.

9 You provide Figure 5 as showing the display that
10 is an embodiment of Phan, correct?

11 A. It's in Phan. Yeah, I do.

12 Q. And network 20 is described in Phan as preferably
13 an optical fiber network, correct?

14 A. Yes.

15 Q. And Phan describes the display as addressing
16 involving high-frequency repetition, preferably at a rate of
17 a minimum of 100 hertz for passive driving display, correct?

18 A. Yeah. He also talks about some individual dot
19 addressed drive scheme as well. So there's -- it's a little
20 bit of ambiguity as to the exact means that he would be
21 driving these pixels.

22 Q. Let's pull up column 5, beginning at line 20, of
23 Phan, which is RX-169.

24 And this, you understand, is a description of
25 Figure 5?

1 A. Yes.

2 Q. And it says addressing involves high-frequency
3 repetition, preferably at a rate of minimum 100 hertz for
4 passive driving display, correct?

5 A. Correct.

6 Q. And that's a reference to passive-matrix driving,
7 correct?

8 A. Yeah. And like -- but like I said, there's
9 another statement in here that talks about individual dot
10 addressing, so there's, like I said, some -- it's not
11 entirely clear. He does -- he does describe passive driving
12 here, but I think he acknowledges other drive schemes as
13 well, like perhaps a direct drive scheme.

14 Q. Phan has only a single reference to OLED in its
15 -- well, strike that.

16 The only reference to OLED in Phan is in its
17 background section, correct?

18 A. I don't recall for sure that it's the only
19 reference, but it does refer to this patent applying to OLED
20 displays.

21 Q. Dr. Pattison, you've reviewed Phan carefully,
22 correct?

23 A. Yeah.

24 Q. And you understand -- well, you were asked about
25 Phan in your deposition, correct?

1 A. Yes.

2 Q. And you understand that Dr. Kymissis has offered
3 the opinion that Phan's embodiments are not directed to OLED
4 displays, correct?

5 A. Yeah, but I believe that Phan says they're
6 directed to OLED displays.

7 Q. Let's set some background here.

8 A. Yeah.

9 Q. Isn't it correct, sir, the only reference to OLED
10 in Phan is in its background section?

11 A. I'd need to review it again.

12 Q. You're not prepared to say, even though this
13 issue has been joined by the parties?

14 A. No, that it's the only reference. I -- I'll say
15 I'm certain that Phan describes that this patent can be
16 applied to OLED displays.

17 Q. Thank you.

18 MR. MEDINA: Objection, Your Honor. The witness
19 has repeatedly been cut off. We request that he be allowed
20 to finish his statement.

21 JUDGE MOORE: All right. Things have been
22 proceeding. Certainly this is cross. You know, I haven't
23 seen any badgering of the witness, so noted.

24 BY MR. LERNER:

25 Q. Dr. Pattison, since we don't have the time here

1 to let you read through all of Phan, if you haven't prepared
2 yourself to do that now, you would agree that if Phan
3 mentioned OLED after its background, that that would have
4 been something you would have pointed out in your witness
5 statement, correct?

6 A. I would have pointed out that this patent applies
7 to OLED displays, and I did point that out.

8 Q. So you're saying, even though you know that
9 Dr. Kymissis has offered the opinion that Phan's embodiments
10 are not directed to OLED displays, if there was any
11 reference in Phan to OLED after its background, you might
12 not have pointed that out in your witness statement, you
13 might not have cited it?

14 A. I might not have.

15 Q. Okay.

16 A. I'll take the inventor's word at it, though, that
17 if he says this applies to OLED displays, it applies to OLED
18 displays.

19 Q. All right. Well, we can all read Phan and see if
20 it mentions OLED anywhere else. Let's go to the background
21 section, RX-169, 1, 18 to 29. This is a statement by Phan
22 that first -- that lists a long list of display
23 technologies, correct?

24 A. Yes.

25 Q. Okay. And the first two listed technologies are

1 CRT and field emission display, and the last is any light
2 sources known or invented in the future, correct?

3 A. Yeah. And it also includes organic
4 light-emitting diode and polymer light-emitting diode, which
5 are both flavors of organic LED displays.

6 Q. Now, Phan lists a number of alleged display
7 technologies in this paragraph that you haven't heard of or
8 don't know what they are, correct?

9 A. Yeah. There's a couple that I'm unfamiliar with.

10 Q. A couple, okay. For example, several items after
11 OLED, an element is listed as surface emitting display,
12 correct, or SED?

13 A. Yes.

14 Q. And you don't know what a surface emitting
15 display is, correct?

16 A. That's correct.

17 Q. The next item listed is digital light-processing
18 display, and you don't know what that is, correct?

19 A. I believe that's like a projector.

20 Q. Okay. Let's pull up your deposition testimony,
21 sir?

22 A. Yeah. I've -- I've learned this after the --
23 after my deposition. I read this.

24 Q. Okay. Take it step-by-step. Okay?

25 A. Sure.

1 Q. Can we have Dr. Pattison's deposition, CX-4023C,
2 at page 103, 15 to 21.

3 You were asked: "And the next one is digital
4 light processing, DLP. Do you see that?

5 "Answer: I see that.

6 "Question: What is digital light processing
7 display referring to?

8 "Answer: I don't know what he meant by that."

9 Correct?

10 A. Correct.

11 Q. So at the time of your deposition after rendering
12 your opinions, you didn't know what Phan meant by digital
13 light processing display, correct?

14 A. Correct.

15 Q. And after that is listed electromechanics?

16 A. Yes.

17 Q. And you're not sure what Phan means by
18 electromechanics, correct?

19 A. No.

20 Q. No, you're not sure?

21 A. No, I'm not sure what he means by that.

22 Q. And next is phototronics. And outside of Phan,
23 you've never seen the term "phototronics" before, correct?

24 A. Yeah, I have not seen that term before.

25 Q. And next is biotronics, and you don't know what

1 Phan means by biotronics.

2 A. Not exactly. I'm assuming it's some sort of
3 biological based optoelectronic system, but I'm not familiar
4 with that term.

5 Q. And you're not aware of any phototronics or
6 biotronics displays that existed at the time of this patent
7 by Phan?

8 A. Yeah. Like we just said, I don't -- I don't even
9 know what those terms really mean, so, yeah. I wouldn't be
10 aware of any displays.

11 Q. In your opinion -- and you don't know what pixels
12 for phototronics or biotronics would look like, correct?

13 A. No.

14 Q. But it's your opinion that Phan discloses pixel
15 arrangements for phototronics and biotronics displays?

16 A. Yeah, and for OLEDs and polymer light-emitting
17 diodes, which are also OLEDs. Yeah.

18 Q. Okay. Now, just to go back, let's pull up your
19 deposition testimony at page 105, lines 2 to 13. I asked
20 you about this paragraph we've been discussing in your
21 deposition.

22 Do you recall that?

23 A. Yes.

24 Q. Okay. And I said: "Question: Apart from this
25 paragraph, is there any other mention of organic

1 light-emitting diode in the Phan reference?

2 "Answer: I'd have to review it again. I mean,
3 it does reference two -- two types of organic light-emitting
4 diode, you know, polymer, like I said, is also a type there.
5 But I'd have to review the whole document here. Let me try
6 to do that. It's not letting me scroll right and left here.
7 Yeah, I don't see one after this quick -- quick review."

8 Do you see that?

9 A. Yes.

10 Q. Okay. So in your deposition, I asked you if
11 there's any other mention to OLED in Phan besides this
12 introductory paragraph, correct?

13 A. Yeah.

14 Q. And you did what you refer to here as a quick
15 review, and you didn't see one, correct?

16 A. Yeah. Thank you for showing me this again. I
17 didn't recall that.

18 Q. And you're saying under oath that in preparing to
19 testify today you didn't go back to Phan to consider if
20 there's any other reference that you might have missed?

21 A. Can you repeat that question?

22 Q. Isn't it correct, sir, the only reference to OLED
23 in Phan is in that introductory paragraph?

24 A. Yeah, that's -- that's what you're showing me
25 here.

1 Q. Okay. Thank you.

2 Now, in analyzing Phan, you didn't consider
3 whether it would need to have signal lines and other wiring
4 in order to be able to function, correct?

5 A. I would assume that there's signal lines, if it's
6 a display. That's kind of inherent, that there needs to be
7 some sort of signal line to drive the display.

8 Q. Dr. Pattison, let's pull back up your deposition
9 testimony, CX-4023C, at 116, lines 4 to 9.

10 "Question: In analyzing Phan, did you consider
11 where it would need to have signal lines and other wiring in
12 order to be able to function?

13 "Answer: No. It's not a claim limitation of the
14 pixel patents, of the Samsung pixel patents."

15 Correct?

16 A. Yeah. So I didn't consider it because it's just
17 assumed.

18 Q. Okay. And you didn't consider where those lines
19 would need to be, those lines and that wiring, correct?

20 A. Correct.

21 Q. Let's turn to Figure 12 of Phan. You've offered
22 opinions analyzing how Phan describes Figure 12, correct?

23 A. Yes.

24 Q. And there's nothing in the description of Phan's
25 Figure 12 that discusses the relative spacing of the pixels

1 in the display that's being depicted in Figure 12, correct?

2 A. The relative -- can you repeat the question?

3 Q. Yeah. There's nothing in the description --
4 well, strike that.

5 Do you see anything in the description of Figure
6 12 that discusses the relative spacing of the pixels in the
7 display that's being depicted?

8 A. The relative spacing? I'm not sure if it was
9 discussed in Figure 12, but the premise of Phan is that you
10 can improve resolution by generating sub-pixels, which would
11 be kind of controlling the -- or by generating virtual
12 pixels. So each of these quad pixels is a pixel, and Phan
13 describes how you would address two sub-pixels of adjacent
14 pixels, right? And so you would -- under that premise, you
15 would need to have consistent spacing --

16 Q. Dr. Pattison --

17 A. -- within the pixel and between pixels as well.

18 Q. My question was simply, do you see anything in
19 the description of Figure 12? And your answer was "no,"
20 correct?

21 A. Yeah. I'd have to be reminded of that, but if
22 that's what I said, correct.

23 Q. Let's pull up your deposition. CX-4023C at 119,
24 lines 10 to 13.

25 "Question: Do you see anything in the

1 description of Figure 12 that discusses the relative spacing
2 of the pixels in the display that's being depicted?

3 "Answer: No."

4 That was truthful testimony, correct?

5 A. Yes.

6 Q. And you agree that Phan's quad pixels could be
7 laid out in a way according to Phan that would not form a
8 virtual square, correct?

9 A. Yeah, they could be.

10 Q. If we turn to Figures 10 and 11 of Phan -- okay.
11 So while we're pulling that up, so Phan's pixels could be
12 laid out in a way with that would not form a virtual square,
13 correct?

14 A. They could be laid out in a way that would not
15 form a virtual square or that could form a virtual square.

16 Q. In Figures 10 and 11, Phan labels a cross point
17 33, correct?

18 A. Yes.

19 Q. And it has a diagonal line indicated in dashed
20 lines in the figures, correct?

21 A. Correct.

22 Q. And Phan teaches that it resizes pixels by moving
23 that cross point along that dashed diagonal line, correct?

24 A. Correct.

25 Q. And the way that Phan resizes its pixels, as

1 shown in Figures 10A, 10B, 11A, and 11B, in order to make a
2 blue pixel larger than another pixel, and the green pixel,
3 the red pixel must be smaller than the green pixel, correct?

4 A. Correct.

5 Q. And if we look at these figures in each of the
6 quad sub-pixels -- well, strike that.

7 10A, 10B, 11A, 11B, those figures, they're
8 showing a quad pixel unit, correct?

9 A. Yes.

10 Q. And it's the things inside them called sub-pixels
11 that Phan refers to as dots, correct?

12 A. Yes.

13 Q. And Phan is disclosing that these sub-pixels
14 within the quad pixel are separated only by a black mask or
15 barrier ribs, correct?

16 A. Yes.

17 Q. Okay. And in your proposed modifications of
18 Phan, you don't use either 10B -- Figure 10B or 11B where
19 Phan is disclosing blue pixels being larger than other
20 pixels, correct?

21 A. No. I used 11B.

22 Q. You use 11B.

23 A. Yeah.

24 Q. Let's pull up your demonstrative, RDX-4.70. You
25 show on the left what you're modifying, right?

1 A. Oh, yeah. Yeah.

2 Q. And that's not one of the options that Phan has
3 in which blue is bigger than green or red, correct?

4 A. Correct.

5 Q. So you don't take what Phan discloses, an
6 arrangement with the bigger blue; you go to one that Phan
7 says has equal sized blue, green, and red, and you modify
8 that, correct?

9 A. Yeah, I think this is Phan in light of Yamada,
10 this modification, but I could be misremembering. But,
11 yeah, I think it's -- it's both of those together.

12 Q. And your modification keeps blue the same size
13 and makes the green and red smaller, correct?

14 A. Yeah. And these are relative sizings. This is
15 not an engineering diagram, right? So there's --

16 Q. Right.

17 A. -- there's room for adjustment.

18 Q. You haven't made any actual measurements, right?

19 A. No.

20 Q. And it's not drawn to scale?

21 A. No. It's not -- it's designed to show what a
22 POSITA would understand what could be done with the basic
23 teachings.

24 Q. And you're introducing spacing between the dots
25 beyond the black mask and barrier ribs that Yamada -- that

1 Phan teaches, correct?

2 A. Yeah. A POSITA would know that that's just more
3 black mask or spacing between the dots. That's -- that's --
4 it looks just like the pixel diagrams in the '803 and '578
5 patents. It's just that white space is in between space of
6 the pixels. That's not -- not complicated.

7 Q. And the '803 patent and '578, the diamond pixel
8 patents, are specifically about OLEDs, correct?

9 A. Yeah. And this --

10 Q. And Yamada --

11 A. -- this patent is also -- mentions OLEDs as well.

12 Q. It mentions OLEDs in a list of many display
13 technologies, including any display that's invented in the
14 future, correct?

15 A. And Yamada also mentions OLEDs but, yes, correct.

16 Q. Okay. And there's nothing in the description of
17 any figure of Phan that says it's describing or purporting
18 to describe OLED pixel arrangements, correct?

19 A. No.

20 Q. No, there's not, correct?

21 A. No. Correct.

22 Q. If we could turn to the Matthies reference,
23 RX-170. Matthies is directed to a tile display, correct?

24 A. Correct.

25 Q. And if we look at Figure 1 of Matthies, it shows

1 an example with blocks labeled as 122 and 24 representing
2 tiles, and those are pieced together to create a large area
3 display, correct?

4 A. Correct.

5 Q. And as illustrated in Figure 1A and 1B, each tile
6 might show just a portion of the overall image, correct?

7 A. Correct.

8 Q. And if we turn to column 1, line 66, of Matthies,
9 Matthies states that no practical tiled system has yet been
10 developed, correct?

11 A. Yes.

12 Q. And turning to column 2, lines 7 to 10, of
13 Matthies, Matthies states that two barriers to implementing
14 the tiled approach have been, one, eliminating the
15 visibility of the seams between tiles and, two, providing
16 electrical access to the pixels, correct?

17 A. Yeah. I think that's part of what he's trying to
18 invent here.

19 Q. The seams, just so we're clear, refer to the
20 boundaries or the borders between adjacent tiles that make
21 up the large display, correct?

22 A. Any display, any size display that's using the
23 tiles for. But he -- I think he proposes that the display
24 appears seamless.

25 Q. Right. And so he doesn't want to have some

1 optical effect between individual tiles in the display,
2 correct?

3 A. Correct.

4 Q. And that's one of the problems he's saying the
5 barriers to this tiled approach, correct?

6 A. Correct. Yes.

7 Q. And the second is providing electrical access to
8 the pixels, right?

9 A. Yes.

10 Q. And he talks about vias which are punched through
11 tiles to provide electrical contacts?

12 A. Yeah. He talks about providing the electronics
13 behind the -- behind the tiles.

14 Q. And he has to have punched holes or other things
15 drilled into the tiles to provide that access, correct?

16 A. Yeah. I don't think that would be punched. They
17 could be done with typical semiconductor processing
18 techniques.

19 Q. Okay. Matthies has two embodiments disclosed --
20 well, strike that.

21 Matthies has embodiments for monochromatic OLEDs,
22 correct?

23 A. I don't recall, exactly.

24 Q. There are two embodiments disclosed for pixel
25 arrangements for color OLEDs in this tiled approach by

1 Matthies, correct?

2 A. Yeah, he discloses a quad pixel arrangement.

3 Q. There are two, correct? Two different
4 arrangements?

5 A. Yeah. I think he does like a stripe arrangement
6 and a quad pixel arrangement.

7 Q. Let's go to Figure 8A. Figure 8A is showing an
8 RGB stripe arrangement, correct?

9 A. Yes.

10 Q. And Figure 8B is a quad pixel arrangement?

11 A. Yes.

12 Q. Figure 8B -- can we pull up column 17 of
13 Matthies, lines 10 to 12. Matthies says the pixel structure
14 shown in Figure 8B employs two row electrodes, not shown,
15 and two column electrodes, not shown.

16 Can we put up that, next to the Figure 8B?
17 Correct?

18 A. Excuse me?

19 Q. Matthies says that the pixel structure shown in
20 Figure 8B employs two row electrodes, not shown, and two
21 column electrodes, not shown, correct?

22 A. In that embodiment. And he also says in other
23 places that the electronics behind the tiles could be active
24 or passive.

25 Q. Dr. --

1 A. Yeah.

2 Q. -- Pattison, that wasn't my question.

3 A. Okay.

4 Q. Could you please start with my questions?

5 A. Sure.

6 Q. I'm just asking about Figure 8B. And Matthies

7 says the pixel structure shown employs two row electrodes,

8 not shown, and two column electrodes, not shown, correct?

9 A. Correct.

10 Q. And that's describing passive-matrix display for

11 Figure 8B, correct?

12 A. Yes.

13 Q. And the embodiment disclosed in Matthies' Figure

14 8A is also disclosed as a passive-matrix, correct?

15 A. I'd have to review, to see that again.

16 Q. Let's pull up your deposition, CX-4023C, at

17 151:19 to 152:12. You were asked:

18 "Question: Figure 8A -- okay. Figure 8A is also

19 a passive-matrix design, correct?

20 "Answer: I don't see where it says that.

21 "Question: It's discussed in column 16, there's

22 a paragraph that begins at line, around, 37. Begins, the

23 displays described above.

24 "Answer: Okay, yeah, I see that.

25 "Question: And it says the pixels have a single

1 emissive area which is controlled by a single row and column
2 electrode pair. Do you see that?

3 "Answer: Yeah.

4 "Question: That's describing a passive-matrix
5 display, correct?

6 "Answer: "Yeah."

7 Do you see that?

8 A. Yes.

9 Q. That was correct?

10 A. Um-hum. Yes.

11 Q. You agree that Figure 8A discloses a
12 passive-matrix?

13 A. Yes.

14 Q. Now, in -- pulling up Figure 8B, the way that
15 Matthies describes Figure 8B with these column and row
16 electrodes that aren't shown, the top left green and the top
17 right red sub-pixels share a row electrode, correct?

18 A. Correct.

19 Q. In the columns, for example, the top left green
20 and the bottom right blue sub-pixels share a column
21 electrode, correct?

22 A. Bottom right blue?

23 Q. I'm sorry. I might have misspoken.

24 The top left green and the bottom left blue
25 sub-pixels in Figure 8B share a column electrode?

1 A. Yeah. If you're limiting, you're thinking to
2 passive-matrix, yeah.

3 Q. In terms of what Matthies is describing about
4 Figure 8B, correct?

5 A. In this embodiment, yeah.

6 Q. And Matthies explicitly defines the geometry of
7 its quad pixel structure, correct?

8 A. In an embodiment, not as a limitation, I don't
9 believe.

10 Q. Well, let's look at what Matthies says. Can we
11 have column 17, lines 16 to 20?

12 And this is in the passage that's describing
13 Figure 8B, correct?

14 A. I don't have the full context here, but I'll take
15 your word for it.

16 Q. Okay. Matthies says the geometry of the quad
17 sub-pixel structure is defined by the dimensions Dsh, the
18 height -- well, strike that.

19 Okay. We have Figure 8B next to us, right?

20 A. Yes.

21 Q. So in columns 17, lines 16 to 20, Matthies says,
22 "The geometry of the quad sub-pixel structure is defined by
23 the dimensions Dsh, the height of the sub-pixel, Dsw, the
24 width of the sub-pixel, De, the distance from the active
25 sub-pixel areas to the edge of the pixel area, and Dsi, the

1 distance between adjacent sub-pixels." Correct?

2 A. Correct.

3 Q. And those are all values or variables that are
4 shown in Figure 8B, correct?

5 A. Yes.

6 Q. Matthies defines the values Dsw and Dsh as the
7 size of the sides of the pixels in the quad pixel structure,
8 correct?

9 A. Correct.

10 Q. And, for example, in Figure 8B, the red sub-pixel
11 would have a width Dsw and a height Dsh?

12 A. Yeah, they're all -- they're all the same size.

13 Q. And there's no passage or figure in Matthies that
14 states the sub-pixels in the quad pixel structure can have
15 unequal sizes, correct?

16 A. No. That's -- that was arrived at in light of
17 Yamada.

18 Q. No, there's no such disclosure, correct?

19 A. Yeah, that's correct.

20 Q. And Matthies has a value De, which is the space
21 between the edge of the tile and the edge of a sub-pixel,
22 correct?

23 A. Yes.

24 Q. And one thing that Matthies discusses is the
25 importance of having uniform spacing from the edges of its

1 tiles, correct?

2 A. Yes.

3 Q. And Matthies is describing a certain symmetry
4 with pixels of the same size and equal spacing from the
5 edges of the tiles, correct?

6 A. Yeah. He is.

7 Q. And so all of the pixels along the column will
8 have the same distance D_e from the vertical edge of the
9 tile, correct?

10 A. That's what he's talking about in this
11 embodiment, yeah.

12 Q. And there's no -- strike that.

13 And you agree that Matthies explains that its
14 display tiles include tiles constructed with pixel-forming
15 elements evenly spaced up to the edge of the tiles, right?

16 A. Yes.

17 Q. And in Figure 8B, 50 percent of the
18 light-emitting area is green light, right?

19 A. Yes.

20 Q. Matthies says that his use of two green
21 sub-pixels allows for a brighter display, correct?

22 A. Correct.

23 Q. So Matthies has deliberately made the
24 light-emitting area of green much larger than that of blue
25 or of red, correct?

1 A. Yeah, but this would be -- it would be
2 problematic to try to implement this with -- only
3 considering brightness, with an actual display.

4 Q. So your opinion is implementation of Matthies
5 would be considered problematic?

6 A. This embodiment.

7 Q. And Matthies doesn't disclose -- well, strike
8 that.

9 In your opinion, a person of ordinary skill in
10 the art would have believed that the amount of light emitted
11 by blue pixel material would be lower than for red and green
12 pixel material, correct?

13 A. In this embodiment, it would be much lower, yes.

14 Q. And if we look at column 17, lines 6 to 8, of
15 Matthies -- and pull that up, please -- in describing the
16 quad pixel arrangement, Matthies specifically says, teaches
17 that "in some display technologies, the amount of light
18 emitting by the red or blue pixel material may be less than
19 the amount of light emitting by the green pixels." Correct?

20 A. Correct.

21 Q. And Matthies teaches, in the next sentence, that
22 in this instance, making the pixels 830 and 836 both be red
23 or blue pixels would improve the overall brightness of the
24 display, correct?

25 A. Correct.

1 Q. And those are the two pixels that in Figure 8B
2 are shown as the green sub-pixels, correct?

3 A. Yeah. It's not -- it's not perfectly accurate.
4 If they're both being --

5 Q. Sorry. What's not perfectly accurate?

6 A. That making them both red or blue would make the
7 display brighter. If they were both blue, compared to --
8 having a quad pixel with two blues would be much less bright
9 than having a quad pixel with two greens.

10 Q. And just so we're clear, what you're saying is
11 not accurate is what Matthies is teaching, correct?

12 A. That -- in that embodiment, yeah, what he's --
13 what he's describing right here.

14 Q. Now, if we can pull up CDX-75C.50, you understand
15 that this demonstrative shows what Matthies' Figure 8B would
16 look like if implemented with two blue sub-pixels in the way
17 that Matthies teaches in the event that the light emitting
18 of blue is less than of red and green, correct?

19 A. Correct.

20 Q. And this structure depicted on CDX-75C.50 would
21 not meet any claim of the diamond pixel patents, correct?

22 A. I don't believe so.

23 Q. In your proposed modification of Matthies, you
24 don't follow Matthies' teaching of employing two blue
25 sub-pixels, correct?

1 A. No. I don't think employing two blue sub-pixels
2 is a good idea. I don't think a POSITA would think it's a
3 good idea.

4 Q. Instead, you take the structure depicted in
5 Figure 8B, keep the blue sub-pixel the same size, and draw
6 the red and green sub-pixels as being smaller in area,
7 correct?

8 A. Yeah, according to Yamada.

9 Q. And so, in your proposal, the light-outputting
10 area of green will be smaller than that of red and of blue,
11 correct?

12 A. Relatively smaller, yes.

13 MR. LERNER: Your Honor, if you'd like to take
14 the morning break, this might be a natural stopping point.

15 JUDGE MOORE: Sure. A little bit early, but
16 that's fine.

17 Earlier today I let it get beyond me, but you
18 showed a Figure 5 of the '803 patent, which is CX-3456C.
19 And you showed it with a virtual square overlaid.

20 Once again, I assume that would be a
21 demonstrative. The exhibit itself is not shown that way, so
22 we need to get a demonstrative number and some way to get
23 that at least in as a demonstrative so that when we're
24 looking at the transcript, we can see that. So maybe you
25 can do that over the break.

1 So the break will be 15 minutes, and we'll come
2 back at 10:57.

3 (A recess was taken at 10:42 a.m., after which
4 the proceedings resumed at 10:57 a.m.)

5 JUDGE MOORE: Please be seated.

6 All right. When you're ready, back on the public
7 record.

8 MR. LERNER: Thank you, Your Honor. Jeff Lerner
9 on behalf of Complainant. We can stay on the public record
10 for now.

11 JUDGE MOORE: All right.

12 BY MR. LERNER:

13 Q. Dr. Pattison, you testified in your rebuttal
14 witness statement that the patent specification includes
15 just one line relating to FMM, correct?

16 A. I believe so.

17 Q. And you then reiterate that multiple times. If
18 we could just orient you, just pull up RX-1084C.8 at Q/A 29.

19 You write "In fact, the patent specifications
20 include just one line relating to FMM," correct?

21 A. Yeah. And do not provide meaningful detail or
22 limitations on manufacturing, correct.

23 Q. And this is in response to a question asking for
24 your reaction to Dr. Kymissis's testimony regarding the FMM
25 manufacturing process?

1 A. Sure.

2 Q. And if we turn to Q/A 43 shortly after, in the
3 third sentence you write "As I mentioned a moment ago, there
4 is just one reference to FMM in the entire patent," correct?

5 A. Correct.

6 Q. And in Q/A 35, if we go to that, you say again in
7 second sentence, "The specification makes just one express
8 reference to the FMM process," correct?

9 A. Correct.

10 Q. Okay. And you understand the importance of being
11 accurate in your testimony, correct?

12 A. And I think I'm wrong on this.

13 Q. So let's pull up the '803 patent, it has the same
14 specification as the '578, correct?

15 A. Sure, yes.

16 Q. JX-3, column 1, line 38 to 40. And it may help
17 to clear this up because BOE's counsel cross-examined
18 Dr. Kymissis on the same point. I just want to make sure we
19 have a clear record.

20 Column 1, line 38 to 40 discusses OLED displays
21 that may be deposited -- pixel of an OLED display -- strike
22 that.

23 It says an organic emission layer included in the
24 pixel of an OLED display may be deposited and formed by
25 using a mask, such as a fine metal mask, FMM. Correct?

1 A. Correct.

2 Q. And it goes on to discuss tradeoffs between
3 deposition reliability and aperture ratio using FMM,
4 correct?

5 A. I think those statements apply to any patterning
6 method.

7 Q. Okay. And if we turn to column 5, line 9 to 28,
8 there is another discussion of the pixel arrangements and
9 FMM. If we pull that up and highlight line 17.

10 After discussing the gaps in the lines between
11 pixels, beginning at line 16, it says "This results in
12 improved deposition reliability when using a fine metal mask
13 to form the green, blue, and red organic emission layers
14 respectively," correct?

15 A. Correct.

16 Q. And if we go to column 5, lines 35 to 42, there's
17 another reference to FMM manufacturing, correct?

18 A. Which -- which --

19 Q. Accordingly to improve the deposition reliability
20 of the organic emission layer in the deposition process
21 using the fine metal mask and to the improve the aperture
22 ratio of the first pixels, the second pixels, and the third
23 pixels, and it goes on to discuss the virtual square?

24 A. Yeah, I see that.

25 Q. So that's just another reference to --

1 A. Yes.

2 Q. -- use of FMM to manufacture the preferred
3 embodiments of the claimed inventions?

4 A. I don't know if it says preferred anywhere.

5 Q. This is discussing Figure 1, correct?

6 Do you see beginning at line 26 as described
7 above in the pixel arrangement structure of the OLED Figure
8 1, this is describing a figure of the patent, correct?

9 A. Of Figure 1, yeah. Does it say preferred
10 anywhere?

11 Q. Is it your position that the figures of the
12 patent aren't preferred embodiments?

13 A. I didn't know if Figure 1 is a preferred
14 embodiment.

15 Q. Do you understand the figures of the patent to be
16 preferred embodiments?

17 A. They're embodiments. They're not really limited.
18 They talk about different sizes and different spacings and
19 different shapes, so --

20 Q. And if we go to column 6, lines 31 to 35.

21 Again, in describing the pixel arrangement
22 structure, the patent explains "this results in improved
23 deposition reliability in the deposition process using the
24 fine metal mask," and it goes on, correct?

25 A. Correct.

1 Q. And if we go to column 7, lines 12 to 16.

2 Again in describing Figure 3 now and the pixel
3 arrangements, it says "this results in improved deposition
4 reliability in the deposition process using the fine metal
5 mask," correct?

6 A. Yes.

7 Q. And if we go to column 7, lines 58 to 64.

8 This is describing Figure 4 now, correct?

9 A. Yes.

10 Q. And it's discussing, for example, the
11 quadrilateral shape of the first pixels 100, correct?

12 A. Yes.

13 Q. And in the sentence beginning on line 61 it
14 explains, the specification, that is, explains "this results
15 in improved deposition reliability in the deposition process
16 using the fine metal mask to form the green, blue, and the
17 red organic emission layers," correct?

18 A. Yes, I see that statement.

19 Q. If we go to column 8, lines 31 to 38, this is
20 discussing Figure 5 now, correct?

21 A. Yes.

22 Q. And beginning at line 34 in describing the
23 arrangement, including the octagonal shapes, it explains
24 "this results in improved deposition reliability in the
25 deposition process using the fine metal mask to form the

1 green, blue, and red organic emission layers," correct?

2 A. Correct.

3 Q. Okay. So when you wrote multiple times in your
4 direct -- in your witness statement that there's only one
5 reference to FMM to criticize Dr. Kymissis, that was, in
6 fact, incorrect?

7 A. Yeah. That was incorrect. It was probably
8 unartful in -- and it is incorrect. Really, they are all
9 saying the same thing, right, which is very little, just
10 makes the statement that's not backed up by actual analysis
11 or evidence that you have improved deposition reliability
12 but that's not apparent. The actual reasoning behind that
13 is not clear and that benefit is not clear.

14 Q. So your original testimony was there's only one
15 reference, and your new testimony is well, that's wrong, but
16 what I really meant was it doesn't discuss it enough to
17 explain how it's working? Correct?

18 A. Yeah -- no. Okay. No. Let's leave it there,
19 that's fine.

20 Q. Now, Dr. Pattison, in the references that we
21 discussed, we just saw references to quadrilateral and
22 octagonal shapes of pixels, correct?

23 A. Correct.

24 Q. Let's turn in your direct witness statement,
25 RX-4C to Q/A 231.

1 You write, "the patent also does not attribute
2 any importance whatsoever to the use of this particular
3 pixel shape. Instead the '578 patent explains that all of
4 its depicted pixel shapes, including those in Figure 5, are
5 quote/unquote, arbitrarily given, correct?

6 A. Correct.

7 Q. You don't provide a citation, do you?

8 A. I believe I got that from the specification.

9 Q. Okay. But in your witness statement, you don't
10 provide a citation to what you're talking about, correct?

11 A. Correct.

12 Q. Okay. And if we, in fact, look in the patent for
13 the words you quote, arbitrarily given, it doesn't refer to
14 shape at all, does it?

15 A. I don't recall.

16 Q. Okay. Let's pull it up. Let's pull up JX-4 --
17 I'm sorry, JX-3, which is the '803 patent, lines 14 to 17.

18 And it's the same specification across the two
19 patents, correct?

20 A. Yes.

21 Q. So let's look at JX-3 -- I'm sorry. We will do
22 it with JX-5 to stay with the '578 patent, to stick with
23 your direct statement.

24 JX-5, column 4, lines 4 to 17.

25 And here it's describing Figure 1 having

1 quadrilateral shapes for certain pixels among the polygon
2 shapes, correct?

3 A. Yes.

4 Q. Okay. And for this arbitrarily given language
5 that you quote, let's pull up column 3, lines 42 to 46.

6 The patent says "further, since sizes and
7 thicknesses of constituent members shown in the accompanying
8 drawings are arbitrarily given for better understanding and
9 ease of description, the present invention is not limited to
10 the illustrated sizes and thicknesses." Correct?

11 A. Correct.

12 Q. That's referring to sizes and thicknesses of the
13 pixels, not to their shape, correct?

14 A. Well, if you change the thickness, you might turn
15 a square into a rectangle.

16 Q. That's your testimony?

17 A. Well, it's --

18 Q. So you're testifying that when the patent is
19 discussing polygons and octagons -- I'm sorry. When the
20 patent is discussing quadrilaterals and octagons, those are
21 shapes, correct?

22 A. Yeah.

23 Q. And it refers specifically to different shapes in
24 describing different embodiments, correct?

25 A. Yeah.

1 Q. And you're saying that when it says sizes and
2 thicknesses of constituent members shown in the drawings are
3 arbitrarily given for better understanding and ease of
4 description, that that means that the pixel shapes are
5 arbitrarily given?

6 A. The thickness of pixel shapes, right.

7 Q. If that's your testimony, okay.

8 And the patent does refer to shapes, correct?

9 A. Yeah.

10 Q. But shapes is a different word than thicknesses?

11 A. That's the language that it has here.

12 MR. LERNER: Now, if we could turn now, Your
13 Honor, to the confidential record, it would be BOE CBI.

14 JUDGE MOORE: Okay.

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

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

2 RECROSS-EXAMINATION

3 BY MR. LERNER:

4 Q. Dr. Pattison, you were asked some questions by
5 your counsel about Matthies, RX-170 and Figure 7. Can we
6 please pull up RX-170, Figure 7.

7 Now, you carefully reviewed Matthies, correct?

8 A. Yes.

9 Q. And earlier I asked you about Matthies displays
10 being -- examples being monochromatic and others being
11 color. Do you recall that?

12 A. Yes.

13 Q. You said you weren't sure if they were
14 monochromatic displays?

15 A. Yes, I don't have it right at hand, yeah.

16 Q. A quad pixel structure is sub-pixels of different
17 colors, right?

18 A. Correct.

19 Q. Okay. And that's an important issue when you're
20 designing a display, if it's a monochromatic or if it is
21 full color?

22 A. Yeah.

23 Q. So you would want to really carefully review a
24 reference to see if it's discussing a monochromatic display
25 or a color display, right?

1 A. Yeah. I am pretty sure there is reference that
2 discusses --

3 Q. You wouldn't want to mislead --

4 A. -- quad -- you know, multi-color quad pixel
5 arrangements.

6 Q. You wouldn't want to be misleading by describing
7 something like Figure 7 as a quad pixel arrangement if, in
8 fact, it was discussing a monochromatic design, correct?

9 A. I wouldn't want to mislead, yeah, at all. But,
10 you know, this pixel arrangement could be used for a quad
11 pixel arrangement as well.

12 Q. And your counsel asked you if this was quad pixel
13 and you said it was, correct?

14 A. It is a quad pixel arrangement.

15 Q. And quad pixel means the pixels of different
16 colors?

17 A. Yeah. So --

18 Q. So let's keep this up. And let's put up
19 Matthies, column 16, beginning at line 21 and going through
20 line 40.

21 So if we can enlarge starting at line 21 where it
22 starts talking about Figure 7 and go through 40. Matthies
23 says, starting at line 21, in column 16, "Figure 7 is an
24 alternative pixel layout suitable for use in a tile such as
25 that shown in Figure 3. In the layout shown in Figure 7,

1 the active portions 526 of the pixels are centered in their
2 respective pixel regions and it goes on, correct?

3 A. Yes.

4 Q. You see in Figure 7 one of the boxes is labeled
5 526, correct?

6 A. Yes.

7 Q. And different ones are labeled 526 in each of the
8 quadrants that is being shown in Figure 7, right?

9 A. Yes.

10 Q. Okay. And then Matthies describes that and then
11 goes to the next paragraph, beginning at line 37, "the
12 displays described above, meaning Figure 7, have been in
13 general monochrome displays. The pixels have a single
14 emissive area, which is controlled by a single row and
15 column electrode pair. Color pixels may be implemented as
16 shown in Figures 8A and 8B." Correct?

17 A. Yes.

18 Q. And those are the ones I asked you about earlier,
19 correct?

20 A. Yeah. So, sorry, the shapes look the same, just
21 assumed it was -- we were talking about the other one. My
22 mistake.

23 Q. Okay.

24 MR. LERNER: Thank you, Your Honor. I have no
25 further questions.

1 JUDGE MOORE: All right. Staff?

2 MR. MEDINA: Your Honor, may I -- oh, sorry.

3 MR. MAAS: No questions from the Staff, Your
4 Honor.

5 JUDGE MOORE: All right.

6 MR. MEDINA: May I re-redirect?

7 JUDGE MOORE: Yes.

8 MR. MEDINA: Thank you, Your Honor. David Medina
9 on behalf of Mianyang BOE.

10 REDIRECT EXAMINATION

11 BY MR. MEDINA:

12 Q. Mr. Pusterla, can you please put up RX-170 again.
13 One moment.

14 Can you please turn to column 16, starting around
15 line 37 and blow that up. This was the column that counsel
16 was just asking you questions about, correct?

17 A. Yes.

18 Q. And, Dr. Pattison, starting at line 40, what does
19 Matthies disclose there?

20 A. It says color pixels may be implemented as shown
21 in Figures 8A and 8B.

22 Q. Mr. Pusterla, can you please show us 8A and 8B?

23 Can you please focus on 8B.

24 Dr. Pattison, this is a color quad pixel,
25 correct?

1 A. Yes.

2 Q. What does the G mean?

3 A. Green.

4 Q. What does the B mean?

5 A. Blue.

6 Q. And what does the R mean?

7 A. Red.

8 Q. Is this a monochromatic display being shown here
9 in Figure 8B?

10 A. No, this would be a colored display.

11 Q. Do the teachings shown in 8B apply to the pixel
12 arrangement disclosed in Matthies?

13 A. Yes.

14 Q. And that's what it says here in line 40, right?

15 A. Yes.

16 MR. MEDINA: No further questions, Your Honor.

17 MR. LERNER: Just --

18 JUDGE MOORE: When you're ready. Go ahead.

19 MR. LERNER: Thank you, Your Honor.

20 RECROSS-EXAMINATION

21 BY MR. LERNER:

22 Q. If we could just have Figure 7 next to Figure 8B,
23 I just want to make sure we have a clear record here because
24 I think there has been some confusion, perhaps.

25 Figure 7 next to 8B.

1 So Figure 7 is monochrome. Figure 8B is color.

2 Correct?

3 A. Yes.

4 Q. Okay.

5 MR. LERNER: That's all that I have, Your Honor,
6 except for two housekeeping items. Two exhibits that were
7 discussed earlier.

8 JUDGE MOORE: Okay. Sure.

9 MR. MEDINA: I do have one question.

10 JUDGE MOORE: We can release the witness. So
11 this witness is a part of Respondents' case. He's not
12 coming back, part of the reason why we're here this week is
13 for him. Okay.

14 So thank you for coming here and hopefully we
15 have accommodated your schedule and we appreciate you
16 testifying and you are released.

17 THE WITNESS: Thank you.

18 (The witness stood down.)

19 JUDGE MOORE: All right. Housekeeping?

20 MR. LERNER: Yes. The reply declaration of
21 Dr. Pattison in the '803 IPR proceeding is going to be
22 marked as CX-4039.

23 And the overlay of Figure 5 of the diamond pixel
24 patents on CX-3456C, the illuminated D2 product, will be
25 marked as CDX-0076C.

1 CERTIFICATE OF REPORTER

2 TITLE: Certain Active Matrix Organic Light-Emitting Diode
3 Display Panels

4 INVESTIGATION NO: 337-TA-1351

5 HEARING DATE: July 9, 2024

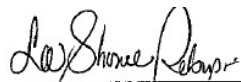
6 LOCATION: Courtroom A

7 NATURE OF HEARING: Evidentiary Hearing

8 I hereby certify that the foregoing/attached
9 transcript is a true, correct and complete record of the
above-referenced proceedings of the U.S. International
Trade Commission.

10 Date: July 9, 2024

11 SIGNED:

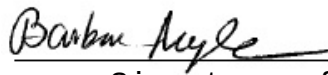


12 Signature of the Contractor of the
Authorized Contractor's Representative
13 1220 L Street, N.W., Suite 206
Washington, D.C. 20005

14

I hereby certify that I am not the Court Reporter
15 and that I have proofread the above-referenced transcript
of the proceedings of the U.S. International Trade
16 Commission, against the aforementioned Court Reporter's
notes and recordings, for accuracy in transcription in the
17 spelling, hyphenation, punctuation and speaker
identification and did not make any changes of a
18 substantive nature. The foregoing/attached transcript is a
true, correct and complete transcription of the
19 proceedings.

20 SIGNED:

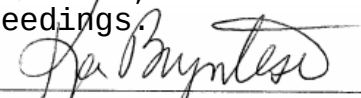


Signature of Proofreader

21

I hereby certify that I reported the above-referenced
22 proceedings of the U.S. International Trade Commission and
caused to be prepared from my tapes and notes of the
23 proceedings a true, correct and complete verbatim recording
of the proceedings.

24 SIGNED:



25 Signature of the Court Reporter