

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOE TECHNOLOGY GROUP CO., LTD.,
Petitioner

v.

138 EAST LCD ADVANCEMENTS LIMITED,
Patent Owner.

IPR2024-00973
Patent 9,184,157 B2

Record of Oral Hearing
Held: October 8, 2025

Before GRACE KARAFFA OBERMANN, GEORGE R. HOSKINS, and
CHRISTOPHER M. KAISER, *Administrative Patent Judges*.

APPEARANCES:

ON BEHALF OF THE PETITIONER:

KEVIN D. RODKEY, ESQ.
JOSHUA L. GOLDBERG, ESQ.
QINGYU YIN, ESQ.
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
271 17th Street, NW
Suite 1400
Atlanta, GA 30363
(404) 653-6484 (Rodkey)
kevin.rodkey@finnegan.com
joshua.goldberg@finnegan.com
qingyu.yin@finnegan.com

ON BEHALF OF THE PATENT OWNER:

EMILY J. TREMBLAY, ESQ.
CYRUS A. MORTON, ESQ.
Robins Kaplan LLP
800 LaSalle Avenue
Suite 2800
Minneapolis, MN 55402
(612) 349-0953 (Tremblay)
etremblay@robinskaplan.com
cmorton@robinskaplan.com

The above-entitled matter came on for hearing Monday, October 8, 2025, commencing at 1:30 p.m. EDT, at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

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

1:30 p.m.

JUDGE HOSKINS: Good afternoon, everyone. This is Judge George Hoskins, participating remotely. Can you just put your hands up to make sure everybody can hear me right now, please? Thank you. So, we're here for oral argument in proceeding IPR 2024-00973, concerning U.S. patent number 9,184,157. And so, can I get some appearances from counsel, please? And we'll start with Counsel for Petitioner.

MR. RODKEY: Good afternoon, Your Honors. Kevin Rodkey for Petitioner, BOE Technology Group, Limited. I am joined at counsel's table by lead counsel Josh Goldberg, and with us is Qingyu Yin, also counsel for Petitioner, and we have Sherry Li observing.

JUDGE HOSKINS: Thank you, and welcome to the Board today, Mr. Rodkey. And so, Counsel for Patent Owner please?

MS. TREMBLAY: Yes. Good afternoon. Emily Tremblay for Patent Owner. With me on the Webex virtually is Cy Morton, lead counsel for Patent Owner, and also joining in the gallery today are several client representatives, Steve Shin, Adis Vehabovic (phonetic), and Gregg Murgia.

JUDGE HOSKINS: Thank you, Ms. Tremblay, and welcome to the Board today, too. So, let me just start out by acknowledging, we've been having a few technical problems today in setting up the hearing. The audio connections seem to be working fine, but the camera connection behind Judge Obermann in the center of the hearing room there is not working. Can you still hear me?

JUDGE OBERMANN: Judge Hoskins, you're coming in and out of -
- oh, now you're gone.

1 JUDGE HOSKINS: Okay, can people hear me now?

2 JUDGE OBERMANN: Yes.

3 JUDGE HOSKINS: That's the second time my connection has been
4 lost in the past few moments. So, Mr. Slay, can you hear me?

5 MR. SLAY: Yes sir, I can.

6 JUDGE HOSKINS: Okay. Should I go to the back-up? Or what's
7 the best thing we should do?

8 MR. SLAY: Can I send you a separate back-up, that way I can keep
9 you on your own screen? Give me like a minute or so to get that to you.

10 JUDGE HOSKINS: Okay, thank you. So, as I was saying, we're
11 having technical difficulties. Assuming that the back-up works, we can
12 proceed, but counsel, just please be aware that when you're arguing, the
13 view that Judge Kaiser and I have is kind of a back view. It's behind you and
14 to the right, the camera that we can see in the hearing room. So, if you want
15 to point to something or something along those lines as you make your
16 argument, please keep that in mind. Now we'll just pause for a moment and
17 see if we can get this back-up connection going. Thank you.

18 Okay, so now I can see people in the hearing room again. Can you
19 raise your hand? Thank you. So, now everybody can hear me? Okay. So,
20 now we can talk about the general parts of the hearing. Each side is given
21 60 minutes for argument. When you begin your argument, you can set aside
22 whatever portion of that 60 minutes you want for rebuttal. And I am now
23 told that we might have lost Denver. So, let's see.

24 MR. SLAY: Denver, are you there?

25 JUDGE KAISER: Yes, I'm here.

1 JUDGE HOSKINS: Okay, thank you. So, each side is given 60
2 minutes, and you can reserve some time for rebuttal, no more than half.
3 That's not set in stone. Judge Obermann will set the clock above her to have
4 your time in the initial period based on whatever you reserve. And when
5 you reach that point, you can continue arguing or stop arguing and reserve
6 your time for rebuttal. Just as a reminder, please, as you go through your
7 slides -- we have the slides in front of us, but please give the number as you
8 change through your slides, so that we can follow and so that the record is
9 clear when the transcript is prepared. And with that, I'm going to try to -- I
10 see the screens going on and off in the room there, so I want to pause and
11 just -- Judge Kaiser, have you been able to hear me?

12 JUDGE KAISER: Yes. I can hear and see. Thank you.

13 JUDGE HOSKINS: All right. So, it seems anyway that the audio is
14 working. So, I'm just going to stop there and try to go to argument. Let me
15 just ask counsel, are there any questions about the procedure here today?
16 Apart from our technical difficulties that we're clearly having.

17 MS. TREMBLAY: No, Judge.

18 JUDGE HOSKINS: Okay. Thank you. So, hearing none, Mr.
19 Rodkey, you can start your argument. How much time of your 60 minutes
20 would you like to reserve for your rebuttal?

21 MR. RODKEY: May I reserve 20 minutes, please, Your Honor?

22 JUDGE HOSKINS: That's fine.

23 JUDGE OBERMANN: I'm putting 40 minutes on the clock.

24 JUDGE HOSKINS: Thank you. So, Mr. Rodkey, you can approach
25 the podium and begin your argument when you are ready.

1 MR. RODKEY: Good afternoon, Your Honors. Kevin Rodkey for
2 Petitioner, BOE Technology Group, Limited. I think for this proceeding, it's
3 easy to start with discussion of the '157 Patent that's at issue, and the Reiner
4 reference that appears to have been kind of crystallized as the parties' main
5 points of dispute in this case.

6 So, I am turning to Slide 2, and on Slide 2 we have the cover of the
7 '157 Patent and then we have two figures, Figure 11 and Figure 1 from the
8 '157 Patent. By way of background, the '157 Patent recognized that
9 conventionally in the prior art, it was important to protect scanning line
10 driving circuits. And scanning line driving circuits are essentially what help
11 your LCD display light up. They control the timing so that the pixels on the
12 screen will illuminate light and you can see the picture that is intended.
13 They tend to be on one side of the screen. There's a complementary circuit
14 on a perpendicular side of the screen.

15 So, the prior art knew that it was important to protect these, because if
16 they get damaged, then your screen doesn't work. And the '157 Patent also,
17 by way of background, recognized that it was conventional to protect these
18 using what's called an electrostatic discharge, or ESD protection circuit.
19 ESD is like what happens when you're walking on carpet with your socks
20 and you touch a doorknob, and you get that shock. That's ESD. That can
21 occur inside of electronic devices as well, and when ESD occurs, it can
22 destroy the circuits inside of the scanning line driving circuit, rendering it
23 unfunctional.

24 The '157 Patent admits that all of that is what it calls conventional art.
25 In Figure 11 on Slide 2 shows an example of this conventional art. And in
26 Figure 11, we have a scanning line driving circuit that's in light blue and has

1 individual components within it that are shown in dark blue, and those drive
2 each of the rows in the LCD display to make it light up so you can see the
3 picture. That circuit is powered by the power lines in red. And those have
4 input terminals that are in the orange at the bottom. And the protection for
5 this is the dark green circuit labeled ESD 1 and ESD 2 in Figure 11. It was
6 also known in the background, as the '157 Patent admits, that electrostatic
7 discharge may occur somewhere away from these protection circuits. And
8 so, there's a reason to try to protect other parts of the scanning line driving
9 circuit. That was again known in the art that that was a problem. So, the
10 '157 Patent says okay, we have a solution. Our solution is, we're just going
11 to add more circuits to protect it. It's kind of the obvious solution, right?
12 You have a problem, one works, you need more, you add some more.

13 Figure 1 of the '157 Patent shows one of the embodiments that it has
14 claimed, and as you can see, the only difference between the conventional
15 art in Figure 11 and Figure 1 of the '157 Patent is in light green at the top.
16 Those are two additional ESD protection circuits, 11 and 12, and they've
17 been circled here on Slide 2, in Figure 1. The '157 Patent also says we can
18 add more circuits, if these are long scanning line driving circuits. And it
19 discusses distributing them evenly across the scanning line driving circuit.
20 So, you could add one in the middle, divide it in halves, you could add it in
21 quarters, to divide it into quarters, and it says its most preferred embodiment
22 is to provide an ESD protection circuit at each of those dark blue driving
23 circuits. The claims of the '157 Patent claim relative positions for where
24 these ESD protection circuits and the -- a connection of the scanning line
25 driving circuit connect to that red power line.

1 The problem for the '157 Patent is that all of this was known in the
2 art. And I'm turning to Slide 7, which is an initial summary of the Reiner
3 reference, which is Exhibit 1005 in this proceeding. The Reiner reference
4 recognizes the same problem, recognizes the same solution, and actually
5 does it better than the '157 Patent. In the top left of Slide 7, we see where
6 Reiner recognizes the problem. Reiner -- this is from page 2, and these are
7 exhibit pages, not original pages, page 2, lines 28 to page 3, line 1, refers to,
8 quite often, integrated circuit devices comprise an electrostatic discharge
9 device or ESD protection in order to prevent the very sensitive circuits on
10 the chip from being destroyed when they're subjected to a discharge event.
11 In Reiner, a discharge event is an ESD event. So, it's that static discharge.
12 And Reiner explains that in the third box down from page 8 of Reiner, on
13 the left side of Slide 7, the present invention is well suited for use in
14 integrated circuit devices. They comprise electrostatic discharge device,
15 ESD protection. So, we have the same problem, we have the same solution,
16 and Reiner says that in the fourth box down from page 9, a typical example
17 of an integrated circuit is a display driver 61 or 63.

18 We need to talk to a nomenclature a little bit. So, as I mentioned
19 before, there are two types of driver modules. One is called a source driver,
20 it drives one direction of the pixels. In Reiner, that's labeled 61. And then
21 there's what's called a gate driver. Gate driver is shown in blue in Figure 4
22 of Reiner on the right, that's labeled number 63. The parties, both of their
23 experts agree, both of the parties agree, a gate driver is the same as a
24 scanning line driver. So, Reiner talks about the same problem, the same
25 solution, and says I can apply this to both source drivers and gate drivers or
26 scanning line drivers.

1 Turning to Slide 8, we see how Reiner does that. And Reiner does it
2 actually in the most preferred embodiment of the '157 Patent by providing
3 ESD protection to every line driver of the scanning line driving circuit. All
4 of those dark blue boxes we saw before. On the right of Slide 8, we have
5 two figures. The figure on the left is Figure 5 from the Reiner reference,
6 annotated by Petitioner's expert, Dr. Murphy, in Exhibit 1003. And then on
7 the right is a composite figure by Petitioner's expert that he has labeled
8 Figure F for ease of reference.

9 In Figure 5 of the '157 Patent, we see similarly to the figures of -- I'm
10 sorry, Figure 5 of Reiner, I apologize, on Slide 8. We see similarly to what
11 we saw in the '157 Patent. We have the scanning line driving circuit
12 annotated in light blue, and then we have the individual driver unit in kind of
13 a darker blue, that's the box on the inside. You have two power lines in red.
14 And that driver unit has actually not one but three ESD protection circuits
15 that are shown in green. And those are labeled ESD 1, ESD 2, and ESD 3.
16 Because Reiner says that these --

17 JUDGE HOSKINS: Mr. Rodkey?

18 MR. RODKEY: Yes.

19 JUDGE HOSKINS: So, you're on your Slide 8, you've colored
20 Reiner to be a little bit like Figure 1 of the challenged patent, --

21 MR. RODKEY: Yes, Your Honor.

22 JUDGE HOSKINS: -- which counsel does quite often. But if you go
23 back to your Slide 1 -- Slide number 2, please. And so, on Slide number 2
24 we kind of see the corresponding blue and dark blue that we saw in your
25 coloring from Reiner. One of the things that I think we're going to hear
26 from your opponent across the aisle is where exactly is the quote unquote,

1 scanning line driving circuit? The light blue colors that you've given us in
2 these two figures. And I see here in the challenged patent, there's a bigger
3 dotted line box. Around the box and dotted line is light blue. So, light blue
4 800, which is what the specification describes as the scanning line driving
5 circuit. But there's another, bigger dotted line box around that, which
6 encompasses the two power lines that you've colored, I think you referred to
7 it as orange, and some other things. And I'm wondering, do you have any
8 thoughts on what that bigger dotted line box is pointing to in this figure of
9 the challenged patent?

10 MR. RODKEY: Yes, Your Honor. So, I assume you're referring to
11 the dashed box in Figure 1?

12 JUDGE HOSKINS: Yes.

13 MR. RODKEY: At the top of that box, it's kind of highlighted by the
14 circle up there, there's an A. That is actually an excerpted portion for --

15 JUDGE HOSKINS: Okay, so let me be a little bit more clear. I'm
16 not talking about box A, I'm talking about the box in between box A and the
17 light blue box.

18 MR. RODKEY: Oh, I see. I see the one you're talking about, the one
19 that appears to be unlabeled.

20 JUDGE HOSKINS: Correct.

21 MR. RODKEY: I don't believe that that has been discussed by the
22 parties, Your Honor, but I think what that would show is potentially what
23 maybe Petitioner's expert, Dr. Murphy referred to as to why Patent Owner's
24 drawing of the scanning line driving circuit is inaccurate, because he refers
25 to a driver module, and the driver module may include other things other
26 than the scanning line driving circuit, which is the individual driver units.

1 JUDGE HOSKINS: So, I know, but I think that testimony was in the
2 context of Reiner, as opposed to the challenged patent.

3 MR. RODKEY: It was.

4 JUDGE HOSKINS: Okay. So, I guess really, my only question is, I
5 don't know what that middle dotted line box is. And I thought that you
6 might have some knowledge for me, because I couldn't figure that out.

7 MR. RODKEY: I apologize, Your Honor, I don't immediately. I can
8 look at that while counsel is giving their opening, and see if I can find that,
9 but I don't believe it's a box that has been discussed by the parties at this
10 point

11 JUDGE HOSKINS: Okay thank you, and you can return to your
12 argument.

13 MR. RODKEY: Okay. I believe we're on Slide 8, so if you'll please
14 return to that slide. As we saw when we were talking about Figure F, where
15 Reiner does what the '157 Patent claims, but better, by providing three ESD
16 protection circuits for each of the driver units. And those ESD protection
17 circuits are connected to the power lines, again shown in red. And there
18 doesn't appear to be any dispute that each of those protects the scanning line
19 driving circuit and the individual units within that scanning line driving
20 circuit from electrostatic discharge, which is again, the goal of Reiner, the
21 goal of the '157 Patent, and they are all along that line.

22 Returning to Slide 4, more for form's sake than anything. There are
23 two grounds at issue in this proceeding. Both of those grounds challenge all
24 18 claims of the '157 Patent, and they both challenge on the basis of
25 obviousness. In Ground 1, it is based on Reiner alone, and Ground 2 is
26 based on the combination of Reiner and Takahara.

1 Going to Slide 5, I kind of want to simplify the disputes, because
2 Patent Owner has made a lot of arguments, but they really simplify into
3 three buckets. One is what we have styled in Slide 5, the input terminal
4 limitation, which is whether it is obvious to include input terminals for the
5 power lines, which was conventional in the art, as the '157 Patent noted,
6 Patent Owner's expert explained. This has been thoroughly rebutted in
7 Petitioner's reply, so much so to the point that Patent Owner does not even
8 include it in the sur-reply. Given that they didn't add anything on this
9 limitation in the sur-reply, we intend to rest on the briefs, unless the Board
10 has any particular questions.

11 The second issue is what we're styling as the scanning line driving
12 circuit protection limitation, which is actually kind of a group of claim
13 elements that in the briefs are referred to as 4D, 4E, and 4F, and those
14 elements, when you take them together, talk about two things. The two
15 protection circuits in the claim protecting the scanning line driving circuit,
16 and then the relative position of where the protection circuits and one of the
17 connections of the scanning line driving circuit are arranged along that red
18 power line that we see on all of the figures at issue in this proceeding. And
19 we'll talk about -- that's where I intend to spend most of my time today,
20 because that seems to, based on the sur-reply, really be where the parties'
21 dispute is kind of crystallized at this point in the proceeding. The last part is
22 Claim 8. We're calling those the substrate limitations, and that's really a
23 question of whether or not the driver circuit would be put onto a substrate to
24 actually provide you a device that works. And that's a fairly straightforward
25 argument, so I intend to reserve that for the end.

1 Let's go to Slide 14 now. The Reiner reference both discloses and
2 also renders obvious protecting the scanning line driving circuit from
3 electrostatic discharge damage. And these quotes on Slide 14 should look
4 very familiar, we've talked about several of them. On the top left from page
5 2 of Reiner, going on to page 3, we see again Reiner has recognized the
6 problem of electrostatic discharge damage, and that's they can destroy the
7 circuits in the drivers, both the scanning line driver and also the source
8 driver. When those are destroyed, you don't have a functional display.
9 Reiner says that its goal is to protect from ESD damage using ESD
10 protection networks such as the one shown in Figure 5 on the right and it
11 says that typical examples of the integrated circuits that it's protecting are
12 both the display driver 61 and the display driver 63. Again, 63 is the
13 scanning line driving circuit or what Reiner calls the gate driver.

14 Petitioner's expert explained that a person of ordinary skill in the art
15 reading these disclosures of Reiner would have understood that taken
16 together, they describe protecting the scanning line driver circuit. But if the
17 Board disagrees with that assessment, Petitioner's slides have numerous
18 quotes from its expert that establish a motivation to protect the scanning line
19 driving circuit based on the Reiner reference. That spans Exhibit 1003, the
20 Murphy Declaration, from paragraphs 111 to 119, is a couple of examples. I
21 am currently turning to Slide 17, and I want to focus just on the highlights of
22 this testimony, because I would use the rest of my time if I went through it
23 all.

24 But I want to focus on, for example, paragraph 113 of Dr. Murphy's
25 testimony. And in this he recognizes several things. One is that at the top,
26 driving circuits, whether they're scan line drivers, whether they're source

1 drivers, are similar to one another, and that's why you would want to protect
2 them both and protect them both in the same way. For example, they're
3 both composed of the same type of circuits, such as CMOS circuits. They
4 both drive individual lines. There's one for every line of the display in each
5 of the drivers, and he says that a person of ordinary skill in the art would
6 have recognized that these driving circuits, because of the similarities, both
7 having transistor elements, both having individual line driver units, both
8 having very sensitive circuits that can be, quote, destroyed by ESD, would
9 have lent itself to protecting both types of circuits. A person of ordinary
10 skill in the art would've known that.

11 He goes on in paragraph 113, starting about halfway down, where it
12 says, a POSITA, a person of ordinary skill in the art, would have been
13 cognizant of Reiner's ESD protection network in Figure 5 because Reiner
14 itself says it has several benefits. One is that network allows you to have
15 more densely packed circuits, according to Reiner's terminology. Those
16 more densely packed circuits let you put more of them together, and when
17 you do that, you can have a better display, because you can have smaller
18 pixels, get better resolution. Another one is it protects against not one but
19 two types of ESD damage. One is thermal, and one is electrical. And the
20 third one is that it allows for a cheaper manufacturing method. So, there are
21 three benefits -- not just the normal ones for protecting the scanning line
22 driver circuit, but specifically for protecting using Reiner's protection
23 network in Figure 5. And if there are no questions on the motivation, I'm
24 going to go and probably turn to what's the main event today. Let's talk
25 about the arrangement of the scanning line driving circuit and where it is

1 connected to the power line and the arrangement -- I assume we have lost
2 Judge Hoskins? Would you like me to pause?

3 JUDGE HOSKINS: I'm back now. I caught the last end of your
4 motivation, so you ended your motivation, and then you were about to turn
5 to something else.

6 MR. RODKEY: Perfect. Your Honor --

7 JUDGE HOSKINS: There's no need to go back.

8 MR. RODKEY: I've gone back to Slide 5, just for reference. This is
9 probably the main dispute at this point between the parties, and we're talking
10 about the arrangement of where the two protection circuits claimed in Claim
11 4, and one of the connections for the scanning line driving circuit, how those
12 are arranged along the power line. And taking these three elements together,
13 4D, 4E, and 4F, it's a lot of words, but it breaks down, really, into four
14 respective connections along the power line. So, on the power line, at the
15 start you have an input terminal, and then you have a connection from the
16 first electrostatic discharge protection circuit to the power line, and then you
17 have a connection from the scanning line driving circuit to the power line.
18 And then you have a connection from the second electrostatic discharge
19 protection circuit to the power line. These are just relative locations. None
20 of them are absolute. Claim 4 only describes them relative to each other,
21 and it only ever recites a connection, which we all know means one or more
22 connections, for any of these.

23 So, let's look at Slide 31, please. Petitioner's expert, Dr. Murphy, has
24 annotated Figure 2 of the '157 Patent to show how this Claim 4 can map
25 onto Figure 2. Because these are only relative, not absolute connections to
26 the power line, it can be mapped onto Figure 2 in multiple ways, and he's

1 done that. So, on the left of Slide 31, we again have the power line in red,
2 and at the bottom, you can see the input terminal in orange, and then we
3 have the first protection circuit which is labeled ESD 21. It's in light green,
4 and you can see it's connected to the power line at the pink dot next to it.
5 We then have, again, the scanning line driving circuit in light blue, and it has
6 a connection to the power line, shown in the bluish green, teal color. Again,
7 above the first protection circuit, and then at the top, we have the second
8 protection circuit shown in dark green, which is ESD 11 in this figure, and
9 it's connected to the power line at the purple dot.

10 The middle figure shows a different way, but the same relative
11 positions along the power line that's claimed in Claim 4. Again, we start
12 with the input terminal at the bottom, we then have the first protection
13 circuit in light green, which is connected to the red power line at the pink
14 dot. We have the scanning line driving circuit in light blue, being connected
15 to the power line at the teal bluish green dot, and then we have a second
16 protection circuit in dark green, ESD 21, that's connected to the power line
17 at the purple dot. At the right is a third example. I won't go through it all
18 again, but you can see from this that it's the same four relative connections
19 to the power line. And because when you start adding these additional ESD
20 protection circuits along the way, you can map it more and more ways,
21 because all we're talking about are relative connections, not absolute
22 numbers of connections, and that's sort of where it ends up here.

23 And Reiner reaches the same result. So, I'm going to Slide 25 now.
24 On Slide 25, we have three of the composite images from Petitioner's
25 expert, Dr. Murphy, and he's labeled these for convenience Figure A, Figure
26 B, and Figure C. And these again show the same relative positioning that

1 meets the language of Claim 4, similar to what we just saw in Figure 2. And
2 just for reference, he has shown five of the driver units. They're intended to
3 represent at the input terminal side, the first couple of driver units, and then
4 at the bottom, those are the last driver units. So, he's kind of skipped the
5 478 in the middle, whatever that number is. But again, we see the same
6 relative positioning along the power line, the same connections along the
7 power line.

8 So, in Figure A, right? We have the input terminals at the top. As I
9 mentioned, that appears to not be in dispute after the sur-reply anymore, and
10 then we have the first protection circuit, which is light green again. We've
11 tried to be consistent across all of the figures. That first protection circuit is
12 connected to the red power line, again at the pink dot, and then closer to the
13 middle we have where the scanning line driving circuit has its connection. It
14 has a connection, right, at the blue-green or teal dot in the middle, and then
15 we have the last connection at the bottom, which is for the second ESD
16 protection circuit shown in dark green, and that's again connected at the
17 purple dot.

18 We have the same four relative positions in Figure B, in which we
19 have the input terminals at the top, to the red power line, and on the red
20 power line we have the first ESD protection circuit in light green, and it
21 connects to the power line again at the pink dot. We have a connection from
22 the scanning line driving circuit in the middle that's at the teal or bluish
23 green dot, and then at the bottom we have the dark green second protection
24 circuit that connects to the power line at the purple dot.

25 Figure C comes with a little asterisk, because part of that figure is
26 based on Patent Owner's construction in its report, which of course the

1 Board is supposed to consider, under its own precedent and under the
2 Federal Circuit precedent in cases like this, where they're trying to
3 essentially argue one thing in District Court and one thing in the Board for
4 invalidity. So, with that, Petitioner's expert has said okay, if I look at that
5 construction, I can map it a third way. And there are hundreds of other ways
6 he could have mapped it, but he just chose these three. And we have the
7 same relative set of connections. We have the input terminals at the top,
8 followed by the first protection circuit connected to the red power line in
9 pink, and then the scanning line driving circuit connected to the power line
10 in teal or bluish green, and then at the bottom we have the second ESD
11 protection circuit in dark green connected at the purple dot.

12 And I think it's worth spending just a little bit of time talking about
13 Patent Owner's mapping in the District Court, in fact. So, I'm turning to
14 Slide 28, Your Honors. In Slide 28, we have Dr. Murphy's Figure C, and
15 we have paragraphs 136 and 139 from Patent Owner's complaint. In
16 paragraph 136, what's highlighted on the left, I'll summarize, but essentially
17 Patent Owner has taken the position that when an ESD protection circuit is
18 connected to the same power line as the scanning line driving circuit, that
19 counts as those two things being connected. And Dr. Murphy highlighted
20 that in yellow, or in orange, in Figure C1.

21 And I think there's two interesting things to note as far as the
22 remainder of this particular mapping in Figure C from Dr. Murphy. One is
23 paragraph 39 from Patent Owner's complaint, and this is where Patent
24 Owner marked kind of the limitation that's in dispute, which is, what does it
25 mean for the scanning line driving circuit to be connected to the power line?
26 Right now, they're saying it means every single one of those connections.

1 They're saying A actually means 480, which I've never heard before. In the
2 complaint paragraph 139, they said it means one. And in fact, they
3 highlighted just one. Not only did they highlight one, but they highlighted
4 the one farthest away from the input terminals. So, they're beginning to take
5 inconsistent positions here, too.

6 The other interesting thing with Figure C is that when the Board
7 considers Figure C, Patent Owner hasn't actually made any arguments
8 against the substance relative to Claim 4 and these arrangements. The
9 reason for that is because that first ESD protection circuit at the top in light
10 green and the second ESD protection circuit at the bottom in dark green are
11 connected to the power line outside of every single one of the scanning line
12 driving circuits' connections to the power line. So that even meets their own
13 proper narrow reading of the claim in this proceeding. I'm going to turn to
14 Slide 37 now. I think this is the --

15 JUDGE HOSKINS: Mr. Rodkey? I was on mute. Before you do that
16 --

17 MR. RODKEY: I apologize for talking over you, Your Honor.

18 JUDGE HOSKINS: No, I was on mute, no apologies necessary. I
19 have a quick question about the District Court litigation that you just walked
20 us through. Have there been any claim constructions of the patent that's
21 involved in this proceeding in the District Court?

22 MR. RODKEY: No, Your Honor. My understanding is that there's
23 been no construction of any term.

24 JUDGE HOSKINS: And I think the jury trial is coming up in
25 January, as it's currently scheduled. Do I have that right?

1 MR. RODKEY: Yes, I believe it's January 14th. January 5th,
2 apologies.

3 JUDGE HOSKINS: Okay, but in terms of what Patent Owner is
4 arguing in the District Court, as far as the record that we have here in this
5 IPR, I think all that we have is the complaint, and then what you kind of
6 walked us through here on your Slide 28 in terms of what your expert read
7 from the complaint in the reply declaration. Is that right?

8 MR. RODKEY: Yes, Your Honor. The complaint is in evidence, and
9 as far as our expert reading from the complaint -- I'm going back to Slide
10 28, just for reference here. We can see Patent Owner has color coded in that
11 complaint, and again, this is what they said infringes, right? And so, they
12 can't be inconsistent between infringement and invalidity. It's basic patent
13 law that those have to be the same. They did color code, and they did label
14 all of these helpfully in their complaint, and so we can see that what they
15 have labeled and where they show the ESD protection circuit. Although, it's
16 unfortunately kind of small, but it's paragraph 136 of the complaint, if you
17 have the exhibit in front of you. They've color coded each of those, and
18 where they show them being connected, they have to go through the power
19 line, because they show the protection circuit going to the power line, and
20 then they show the scanning line driving circuit going to the power line. The
21 only way in between those is the power line, basically.

22 The other thing I will point out is, Patent Owner hasn't disputed that
23 this is their construction, right? They've had two briefs, their Patent Owner
24 response and their sur-reply, and they've never said that they disagree with
25 how Dr. Murphy has interpreted this. And I think that's a little bit telling,
26 right, because I think they know from paragraph 136 that if they do renounce

1 this position that they've taken here, BOE won't infringe. And so, they need
2 to stick with it, and so they've kind of made arguments about how Dr.
3 Murphy wouldn't agree with them, but we know from both the Board's
4 precedent and the Federal Circuit that it's proper for the Board and for
5 Petitioner to argue a Patent Owner's construction, even though they
6 disagree, as long as we provide our own. And our own is in mappings
7 Figure A and Figure B.

8 JUDGE HOSKINS: Thank you.

9 MR. RODKEY: All right. So, I want to go back to Slide 37, and I
10 believe Judge Hoskins, you alluded to this earlier. Where do we draw this
11 blue box? Patent Owner's trying to do an arbitrary kind of line drawing
12 exercise. What's the box? What's the scanning line driving circuit? And it
13 doesn't change the outcome. And Petitioner's expert explained that it
14 doesn't change the outcome. On Slide 37, we have on the left the grouping
15 of Figure A, Figure B, and Figure C as Petitioner's expert has marked it,
16 where the driver unit 70 at each of those scan lines is shown in blue, and
17 then the circuit itself, which is the grouping of all those, is shown in the light
18 blue box.

19 Patent Owner is attempting to expand that box to try to encompass
20 both the ESD protection circuits and the power lines, and then say aha, now
21 they're not connected anymore. But nothing has actually changed. All of
22 the connections are the same. The power lines are still the same, they're still
23 connected to the driver units, the ESDs are the same, they're still connected
24 to the driver units. The ESDs are in the same place, they're still connected
25 to the power lines, and they're connected to the power line in the same
26 relative arrangement that meets Claim 4. So, this is just box drawing. The

1 function's the same, the operation's the same, all of the connections are the
2 same.

3 JUDGE OBERMANN: Excuse me, Counsel? Is the red line on all
4 six of these the power line?

5 MR. RODKEY: Yes it is, Your Honor.

6 JUDGE OBERMANN: Don't we know which one is the power line?
7 Because on the left, it's all the way on the left, and then it's in the middle,
8 like the fourth one over.

9 MR. RODKEY: So, it's the same line. That's the line VDD in
10 Reiner. The reason it looks like it's in the middle is because the far left
11 figure here and then the fourth figure, they're both Dr. Murphy's Figure A,
12 but the one on the far left shows Dr. Murphy's annotation, and then the
13 fourth figure over shows how Patent Owner is trying to read where the
14 scanning line driving circuit box should be drawn. That's the difference.

15 JUDGE OBERMANN: Oh, I see. I got you, thank you.

16 MR. RODKEY: But they're the same as far as all the layouts when
17 you actually look at the connections in the labeling. If there are no questions
18 on this, I would like to move on to the substrate limitations, which I believe I
19 can probably cover fairly quickly.

20 All right, so I'm on Slide 40 right now, but let's go to Slide 42. As I
21 mentioned before, the substrate limitations really talk about whether or not
22 you would then put the scanning line driving circuit onto a substrate. And
23 Reiner discloses that. So, Reiner uses a technology called flip chip, which is
24 where you form the scanning line driving circuit, and then you mount it onto
25 the substrate that has the pixels and has the scan lines that actually drive the
26 display itself. And in Figure 2 of Reiner, annotated by Petitioner's expert,

1 Dr. Murphy, in Exhibit 1003, in paragraph 145, that substrate that the driver
2 unit is mounted to is in the light purple, labeled item number 16.

3 And I don't think at this point that there's really any dispute over flip
4 chip, the technology, what it is actually mounting to the display driver,
5 because Dr. Murphy provided multiple contemporaneous examples from
6 other references that explain that the flip chip is mounting the driver unit to
7 the LCD panel, and the LCD panel is of course where the pixels and the scan
8 lines and all of that display functionality is. If there are no questions there,
9 let's move onto Ground 2.

10 I'm on Slide 44, about Reiner and Takahara. And then, I'm going to
11 just discuss this very briefly. So, regarding Takahara and Ground 2, I think
12 there are sort of two issues still in dispute. One is, is there a motivation to
13 combine them? And the other one is the substrate limitation, which I think
14 we can probably rest on the briefs as well, and I'll explain why. On Slide 46
15 we have a summary of Takahara, and again, we've tried to be consistent
16 with the coloring. We have Figure 1 on the right, as annotated by
17 Petitioner's expert, Dr. Murphy. And we have a scanning line driving circuit
18 in blue, and then we have a number of red lines, which are the signal lines
19 and power lines in Takahara, and we see four ESD protection circuits in
20 green labeled 151, and then we have the input terminals at the bottom, for
21 those lines.

22 Takahara, at paragraph 166, again kind of reaches the same
23 conclusion as Reiner and the '157 Patent. It talks about, at the bottom of
24 paragraph 66, it says with the configuration that Takahara provides, static
25 electricity is reliably absorbed by the electrostatic protection circuit 150 or
26 151, and because of that, the scan line driver circuit 104 can be reliably

1 protected. So, it's again, protecting scan line driver circuit with ESD. The
2 ESD protection circuits, I apologize. That's what we're relying on Takahara
3 for, right? Because the question is, if Reiner doesn't disclose it, then Reiner
4 needs to render it obvious, and if you find that Reiner alone doesn't render it
5 obvious, well, Takahara renders it obvious, because it explicitly talks about
6 protecting scanning line driver circuits.

7 Patent Owner's made a bunch of arguments about how do we read
8 these lines, and whatnot, but ultimately, we're relying on, just for that basic
9 teaching, that again was conventional in the prior art, and the '157 Patent
10 admits that it was conventional in the prior art.

11 JUDGE HOSKINS: If I may, Mr. Rodkey?

12 MR. RODKEY: Yes, Your Honor.

13 JUDGE HOSKINS: Perhaps stated another way, in your combination
14 of Reiner and Takahara, in order to satisfy those limitations, D, E, and F,
15 talking about where these electrostatic protection circuits have to be located
16 with respect to other components in the system, even in the combination of
17 Takahara, you're relying on Reiner Figure 5 for that. You're not necessarily
18 relying on this Takahara Figure 1 for that positional requirement.

19 MR. RODKEY: Yes, Your Honor.

20 JUDGE HOSKINS: Okay, thank you.

21 MR. RODKEY: Regarding the substrate limitations, I'm on Slide 52,
22 but again, Patent Owner's arguments related to these were very well rebutted
23 in Petitioner's reply. Again, to the point that there is no discussion of the
24 substrate limitations in Claim 8 in the sur-reply. So, because they haven't
25 put anything in the sur-reply, we think this dispute is no longer at issue. So,
26 we'll rest on the briefs for this limitation as well. And all of the other claims

1 and the arguments Patent Owner has made refer back to Claims 4 and 8. So,
2 I don't see reason to discuss those claims individually unless the Board has
3 any questions about those.

4 JUDGE HOSKINS: Thank you, Mr. Rodkey.

5 MR. RODKEY: And with that, I think it's clear that Reiner teaches
6 everything that is claimed and actually, the same problem solution that is in
7 the '157 Patent. This might be the first time I've never actually hit 30
8 minutes in an argument. So, I guess I'll reserve 30 minutes, please.

9 JUDGE OBERMANN: I think that you are almost out of your time
10 for --

11 MR. RODKEY: Oh, so I have 20. Okay, perfect. So, I have 20 left.

12 JUDGE HOSKINS: You reserved 20 and you've got three left. So,
13 you've got 23 when you come back.

14 MR. RODKEY: That's perfect. Thank you, Your Honor.

15 JUDGE HOSKINS: Okay, thank you. So, Ms. Tremblay, when you
16 get up to the podium, if you would just begin by letting us know how much
17 of your 60 minutes you would like to reserve.

18 MS. TREMBLAY: Yes, Your Honor. I'll reserve 10, please.

19 JUDGE HOSKINS: Thank you. So, once Judge Obermann gets the
20 clock set up, feel free to begin when you are ready.

21 MS. TREMBLAY: Good afternoon, Your Honors. Emily Tremblay
22 for Patent Owner, 138 East LCD Advancements, Limited. I'm going to start
23 on our Slide 2. Petitioner cannot show that any of the asserted prior art
24 renders obvious any challenged claim. And that is in large part because
25 Petitioner relies on annotations that are largely beyond the express
26 disclosures provided in either the Reiner or the Takahara reference. It

1 absolutely changes the outcome of this case when we properly annotate the
2 asserted prior art and when we understand the scope of what's disclosed in
3 the prior art, because there are limits to these disclosures, and Petitioner
4 cannot fill those gaps with hindsight and favorable annotations.

5 So, consistent with the parties' briefing and with Mr. Rodkey's
6 comments, I am going to focus most of my time on Claim 4 today, and
7 particularly representative claim element, Claim 4F. So, I want to be clear
8 from the start, because we've heard a lot about ESD protections and ESD
9 circuits. The '157 Patent does not purport to invent or claim in the first
10 instance ESD protection circuits, which means the particular arrangement
11 that is recited is absolutely critical to how we're understanding the scope of
12 what's required by the claims, and how we're understanding the limitations
13 of what's disclosed in the prior art and how it doesn't disclose the very
14 specific arrangement that the '157 Patent requires. And that is, as embodied
15 in Claim 4F, and other independent claims, including 1, 16, 17, and 18,
16 which all recite similar, if not identical limitations. We're talking about a
17 scanning line driving circuit that is connected to the power supply line
18 between first and second protection circuits as those circuits are connected to
19 the power supply line. I heard a lot of discussion today about a connecting
20 portion and quibbling about this a connecting portion. That is not the
21 dispute. The dispute is giving meaning to the fact that the scanning line
22 driving circuit has to be between the protection circuits.

23 Moving to Slide 4. I agree with Mr. Rodkey in one sense, that starting
24 with the background of the '157 Patent I think is important to understanding
25 the scope of the dispute and the scope of the claims at issue. The '157
26 Patent is directed to an improved protection circuit arrangement, to prevent

1 electrostatic damage on a display device. There's an excerpt of the abstract
2 here, this is Petitioner's Exhibit 1001, noting that protective circuits are
3 provided not only at the input terminals, but also, quote, the ends of the
4 wiring lines. The circuit in particular, as noted here in the abstract and
5 replicated in the claims, is interposed therebetween. The crux of my
6 argument is going to be about between. I think I've sufficiently previewed
7 that.

8 Moving to my Slide 5, the patent discusses a specific problem
9 regarding the limits of known ESD protection. Those limits are what's
10 disclosed in Reiner and later was disclosed in Takahara. Reiner and
11 Takahara and their arrangements are both expressly contemplated in the
12 '157 Patent before it then changes that arrangement and improves upon it.
13 So, the excerpt shown on my Slide 5 starts with Reiner, effectively, an
14 integrated circuit device, and providing ESD protection internal to that
15 integrated circuit. The '157 Patent in particular notes that all you have to do
16 to protect an integrated circuit device is provide the ESD protection at the
17 inputs or the outputs to that integrated circuit. We're talking about a self-
18 contained circuit, built on silicon, where the only threats are what comes into
19 the circuit from the outside. But the patent, on the right side of my Slide 5,
20 is now talking about providing a driving circuit on an active matrix
21 substrate. We're now moving out of integrated circuit land. We're talking
22 about protecting a new kind of scanning line driving circuit. Moving to my
23 Slide 7, Figure 1 --

24 JUDGE HOSKINS: Ms. Tremblay?

25 MS. TREMBLAY: Yes.

1 JUDGE HOSKINS: Kind of going back to your Slide 5, this active
2 matrix substrate that is what caused, I guess, when you read the background,
3 our inventors to modify and update, I guess, the electrostatic discharge
4 protection scheme. But I don't see that in Claim 4. I don't see where Claim
5 4, or even Claim 8, recites an active matrix substrate. Am I correct on that?

6 MS. TREMBLAY: Half correct, how about that? I agree with you as
7 to the limits of Claim 4. There's no explicit limitation in Claim 4 reciting a
8 substrate, but I disagree as to Claim 8. I think Claim 8, which recites a
9 display device --

10 JUDGE HOSKINS: It just said substrate, right? It doesn't tell us
11 what kind of substrate.

12 MS. TREMBLAY: Well, that's fair, yes, except for the fact that I
13 think Claim 8 understood in whole, which recites a display device
14 comprising a substrate and comprising a scanning line driving circuit, and
15 then it goes on to recite the additional limitations. That substrate requires
16 arranging the scanning line driving circuit on the substrate for the display
17 device. So, I will disagree as to the scope of Claim 8, but I don't disagree as
18 to the scope of Claim 4. There is no specific substrate claimed in Claim 4.

19 JUDGE HOSKINS: Okay. I just want to make sure, on Claim 8, I
20 don't see any limitation about the material that the substrate is made of, is
21 that right?

22 MS. TREMBLAY: That is correct. Yes, that is correct.

23 JUDGE HOSKINS: Thank you.

24 MS. TREMBLAY: Going back to my Slide 7. So, Slide 7 shows
25 Figure 1 of the patent annotated in blue and purple. The purple identifies
26 101, which is the active matrix substrate. Blue identifies 800, the scanning

1 line driving circuit, and Judge Hoskins, in anticipation of the question that
2 you asked my colleague, I actually don't know that the patent gives us any
3 insight as to what that intermediate dotted line box is. I don't know that it's
4 material, but it's not A, and it's not the scanning line driving circuit, but I
5 have no insight for you on that.

6 JUDGE HOSKINS: Understood and thank you for that.

7 MS. TREMBLAY: Yeah. But what Figure 1 shows is, now we're
8 moving out of an integrated circuit, we're arranging 800, the scanning line
9 driving circuit on the display substrate. Turning to Slide 8, Figure 11 is not
10 the claimed invention. It is another iteration in the conventional art as we're
11 moving out of integrated circuit land and into display substrate land, where
12 the patent is describing that prior arrangements, the arrangements on which
13 the '157 claims specifically improve, applied the existing methods of
14 protecting integrated circuit devices, putting the ESD protection circuits at
15 the terminals, at the inputs and the outputs. They applied that integrated
16 circuit teaching to a scanning line driving circuit, as arranged on the display
17 substrate. That's what's shown in Figure 11 on my Slide 8, with the input
18 terminals highlighted in red, the protection circuits between the scanning
19 line driving circuit and the input terminals are in green.

20 On Slide 9, I've excerpted portions of the patent that specifically
21 discuss now the limitations of that design. On the left, the patent knows that
22 there's a problem, that it's still possible that the device is easily electrified,
23 especially considering that now we're talking about elongated scanning line
24 driving circuit components that are going to be components provided away
25 from the terminals, and now there's a heightened risk of vulnerability to
26 damaging the device, because it is no longer an integrated circuit. During

1 the manufacturing process, the sensitive circuitry could be damaged at any
2 part of that circuit, including away from the input terminals.

3 So, to address these problems, '157 Patent does claim a very specific
4 solution that neither Reiner nor Takahara describes. The '157 Patent
5 describes and claims placing ESD protection circuits on both sides of the
6 scanning line driving circuit. So again, I've excerpted Figure 1 with color
7 annotations on Slide 10, where the ESD protection circuits one through four
8 on the bottom of Figure 1, including ESD 1 highlighted in light green, are
9 between input terminal and scanning line driving circuit. There is now a
10 second set of protection circuits at the end of the wiring lines, at the end of
11 what I've highlighted in red, one of the power supply lines, that are disposed
12 away from the input terminals, and on the opposite side of the scanning line
13 driving circuit.

14 Patent specifically notes that this is the intention of that first
15 protection circuit and the second protection circuit, which is now disposed at
16 the far end of the scanning line driving circuit. Reiner is the old integrated
17 circuit protection method. Put ESD protection circuits in between your
18 device and every access point to that device. Inputs and outputs. That is
19 where the ESD protection circuits go in Reiner. Takahara is implementing
20 that integrated circuit methodology on a display substrate, where now you're
21 replicating this idea of still continuing to put protection circuits only
22 between the scanning line driving circuit and the input terminal for signal
23 lines in Takahara.

24 The '157 Patent in particular, Limitation 4F -- I've now moved to
25 Slide 11, recite the critical distinction that the scanning line driving circuit is
26 connected to the power supply line between the connecting portions for each

1 of the protection circuits. Petitioner does not give voice to this limitation,
2 instead focusing on the a connecting portion language, which is not what the
3 claim requires. I will note that this requirement is not present in Claim 10.
4 We'll talk about Claim 10 a little bit later, when we're talking about giving
5 meaning to this limitation, but this critical "between" language is what is
6 missing in Reiner, and cannot be fixed by Takahara.

7 Turning specifically to Ground 1 and to the Reiner arguments, so in
8 our briefing and -- I want to be clear that in Patent Owner's sur-reply, we
9 addressed what we believed were the most salient points and specifically did
10 not waive all arguments provided in our response. I'll note that for the
11 record. Our response does identify problems with Reiner's disclosures
12 regarding the input terminal. I'm not going to address those here today,
13 because I believe that the other points are more important, but I want to be
14 clear that we've not waived those.

15 JUDGE HOSKINS: So, before we move on from input terminals, at
16 the institution stage, one of the things that Patent Owner objected to in the
17 preliminary response was Petitioner's placing of the location of the input
18 terminals and their obviousness contentions in Reiner Figure 5. Kind of at
19 the top of Reiner Figure 5, if you're familiar with what I'm talking about.

20 MS. TREMBLAY: Yes, I am, Your Honor.

21 JUDGE HOSKINS: But as I understand it, that specific part of the
22 petition, that is, where to locate input terminals, is not currently in dispute
23 now that we've instituted review. Do I have that right?

24 MS. TREMBLAY: Your Honor, we haven't lodged that specific
25 objection in our response, no, in view of the institution decision.

26 JUDGE HOSKINS: Okay, thank you.

1 MS. TREMBLAY: Turning to Slide 14. Reiner is about an integrated
2 circuit device. It discloses integrated circuits. Reiner's specific inventions
3 are focused on bump bridges. I don't think we need to spend too much time
4 discussing that, as it's really tangential to the primary parts of Reiner's
5 disclosure, in which the Petitioner relies, but it is important to know that
6 Reiner -- and I've switched to Slide 15. Reiner addresses a different
7 problem than the '157 Patent addresses. It's teaching bump bridges to
8 facilitate interconnections on a crowded integrated circuit. That is not what
9 the '157 Patent is about, that is not what the '157 Patent requires, and the
10 fact that Reiner's disclosure is limited to the integrated circuit context is
11 going to be dispositive. Turning to Slide 16. Reiner's Figure 4 --

12 JUDGE HOSKINS: So, going back to that, Ms. Tremblay.

13 MS. TREMBLAY: Yes.

14 JUDGE HOSKINS: I don't need you to do it now, but it would help
15 me if you eventually get to why Claim 4 excludes an integrated circuit
16 structure, as you've said multiple times.

17 MS. TREMBLAY: Yes, Your Honor. And let me be clear about the
18 scope of Claim 4, and I'll just go there now. Claim 4 might not explicitly
19 exclude an integrated circuit, but the point I'm making is that Claim 4
20 specifically requires an arrangement that an integrated circuit cannot teach.
21 Well, let me be more specific, that Reiner's integrated circuit arrangement
22 cannot teach. And again, I'm focused on Claim 4F, where the scanning line
23 driving circuit has to be connected to the power supply line between the first
24 and second protection circuits, and their connections to the power supply
25 line. An integrated circuit as taught in Reiner, where the ESD protection
26 network is only internal to the purported scanning line driving circuit, and

1 we'll have the conversation about gate driver versus source driver in a
2 moment, but that internal ESD protection circuit cannot disclose protection
3 circuits with a scanning line driving circuit in between.

4 JUDGE OBERMANN: So that case law that your friend cited about
5 how in can be "in" -- that doesn't matter, because of the word "between" in
6 your claim?

7 MS. TREMBLAY: Yes, Your Honor. This is not a dispute about
8 connected in versus connected to, or a connecting portion versus a specific
9 connecting portion. My argument is, without giving voice to the fact that the
10 scanning line driving circuit has to be connected between the protection
11 circuits, we're not giving meaning to Claim 4F, and the similar claim
12 limitations that were cited in the other independent claims, with the
13 exception of Claim 10.

14 JUDGE HOSKINS: So then can we go to Reiner Figure 5? What is
15 your view when we go to Reiner Figure 5 of where that, the box 63, I guess
16 it's called -- I think it's called a gate driver --

17 MS. TREMBLAY: Correct. Well, two points. I'll table for a
18 moment the gate versus source dispute. I'll just focus on Figure 5's
19 arrangement for now in view of your question, Judge. So, I'm on Slide 17,
20 which shows Reiner Figure 4 on the left and Reiner Figure 5 on the right.
21 Reiner Figure 5 is 61 the source driver module. We've already had the
22 discussion today about how to draw the blue box, so I'll just cut right to the
23 blue box debate. In the petition, Petitioner says, and Dr. Murphy says, that
24 the claimed scanning line driving circuit is 61, not the group of output
25 devices 70. The petition says it's 61, item 61 in Reiner Figure 5. Figure 5 is
26 all of 61, meaning it's showing you the contents of the source driver module,

1 and this is what the petition has said maps to the scanning line driving
2 circuit.

3 So no, I definitely disagree with the characterization that Patent
4 Owner has selectively annotated Reiner Figure 5. I would submit that Patent
5 Owner is the only one who has accurately annotated Reiner Figure 5 as it is
6 disclosed. To draw the box only around the output devices is not only
7 different than Dr. Murphy's and the petition's initial argument on this point,
8 but it is also contrary to the figure labels in Figure 5, showing that all of
9 Figure 5 is the contents of the source driver module.

10 JUDGE OBERMANN: Excuse me for a second.

11 MS. TREMBLAY: Yes, Judge.

12 JUDGE OBERMANN: But did this come out after the petition when
13 they started to map things to the internal 61? So, in other words, did they
14 change the thrust of the challenge after filing the petition, or are they both in
15 the petition?

16 MS. TREMBLAY: So my understanding, and I'll let Petitioner's
17 counsel obviously correct me if I'm wrong in characterizing their arguments,
18 but the petition says 61, source driver module, is the scanning line driving
19 circuit as claimed in the '157 Patent. In reply, they have focused Mr.
20 Murphy's supplemental declaration on only boxes 70, in large part to try to
21 walk back his admission during deposition that all of the contents of Figure
22 5 would be understood to be in the source driver module box shown in
23 Figure 4. But his annotations, to be clear, have been consistent between the
24 petition and the reply, drawing the blue box as he has.

25 JUDGE OBERMANN: So I'm looking at limitation 4f.

26 MS. TREMBLAY: Yes.

1 JUDGE OBERMANN: And we have the scanning line driving
2 circuit, which, if I understand you correctly, is critical because we have to
3 know that it's between two things. When I'm looking at Figure 4 in Slide 17

4 --

5 MS. TREMBLAY: Yes.

6 JUDGE OBERMANN: -- the left side, where did Petitioner map the
7 scanning line driving circuit there?

8 MS. TREMBLAY: As number 61.

9 JUDGE OBERMANN: As number 61. And then you're saying that
10 in the reply brief, they came back with Figure 5 and they mapped that claim
11 limitation, the scanning line driving circuit, to 70?

12 MS. TREMBLAY: Yes. There's a slight variation in their argument
13 now in reply to emphasize the collection of output devices 70 over number
14 61, which is very clearly what they tie to the scanning line driving circuit in
15 the petition.

16 JUDGE OBERMANN: Okay. So they really are identifying two
17 separate elements, 61 and 70, as the scanning line driving circuit
18 inconsistently between the petition and the reply in your view?

19 MS. TREMBLAY: Yes.

20 JUDGE OBERMANN: Okay. Thank you.

21 MS. TREMBLAY: Though, to be perfectly fair, Dr. Murphy's
22 annotations have remained consistent. I don't want to misrepresent that.

23 JUDGE OBERMANN: Thank you.

24 JUDGE HOSKINS: So Ms. Tremblay?

25 MS. TREMBLAY: Yes.

26 JUDGE HOSKINS: So before we move away from your Slide 17 --

1 MS. TREMBLAY: Oh, I wasn't going to yet, but please go ahead.

2 JUDGE HOSKINS: Okay. Please make sure you get through your
3 "between" arguments. So, like, if your view of-- and I guess what you view
4 Petitioner's expert is correct. So the big box is now the scanning line
5 driving circuit. Walk me through how that does not satisfy or cannot satisfy
6 4f.

7 MS. TREMBLAY: Yes, Your Honor. So if we understand that 61,
8 source driver module -- and again, I'm tabling the distinction between
9 source and gate. I do want to eventually get there, but setting that aside for
10 the moment, source driver 61 is an integrated circuit. I think everybody
11 agrees on that. And internal to the integrated circuit are the contents of
12 what's shown in Figure 5, which includes the individual output devices 70,
13 and it includes the three ESD protection circuits designed to protect those
14 output devices.

15 This is why Reiner cannot disclose a scanning line driving circuit
16 between first and second protection circuits. Every single protection circuit
17 is --

18 JUDGE HOSKINS: So let me back you up on that.

19 MS. TREMBLAY: Yes.

20 JUDGE HOSKINS: Claim 4f talks about things being between
21 connecting portions.

22 MS. TREMBLAY: Yes.

23 JUDGE HOSKINS: So it begins with a scanning line driving circuit
24 being connected to the power supply line between, you know, little
25 romanettes 3 and 4.

26 MS. TREMBLAY: Yes.

1 JUDGE HOSKINS: So in your view -- again, let's just start there on
2 your Slide 17. The big light blue box is the scanning line driving circuit.
3 Where is it connected to the power supply line?

4 MS. TREMBLAY: The scanning line driving circuit is connected to
5 the power supply line at each of lines 74 and 76. So here, here, and then it
6 repeats itself presumably. Here, here. So the scanning line driving circuit
7 has multiple connections to the power supply line.

8 I think the critical claim differentiation distinction is worth a comment
9 here. Claim 10 specifically recites a variation on this limitation, which
10 recites the connecting portions and specifically the protection circuits being
11 on either side of a circuit unit connection to the power supply line.

12 Actually, I know you want to keep Figure 5 up. If it's okay, Judge
13 Hoskins, I'm going to move to the language of Claim 10 just to illustrate
14 that, if that works for you.

15 JUDGE HOSKINS: Sure. Thank you.

16 MS. TREMBLAY: I'll go back. I promise.

17 So this is why the scanning line driving circuit having all of its
18 connections to the power supply line being within where the protection
19 circuits are connected to the power supply line matters, because it's not
20 always claimed that way. In Claim 10 -- I'm on Slide 29, excuse me, for the
21 record. That the first protection circuit is connected to the power supply line
22 between a first connecting portion at which a circuit element within the
23 scanning line driving circuit is connected to the power supply line.

24 That is distinct from the scanning line driving circuit as a whole being
25 connected to power and the protection circuits being in either side of any
26 connection for the scanning line driving circuit being connected to power.

1 They're claimed differently for a reason. And understood in view of Figure
2 1 and the rest of the disclosure, it should matter that Claim 4 and the other
3 independent claims other than Claim 10 recite a scanning line driving circuit
4 connected between the first protection circuit's connection and the second
5 protection circuit's connection. If we give that meaning to Claim 4, then I
6 don't think there's any dispute from Petitioner that Reiner does not disclose
7 that.

8 I do want to back to Figure 5 because I think it does help to discuss
9 this in the context of that figure. And actually, I'm going to go my Slide 26,
10 which shows -- is an annotation from our response, from the POR, at page
11 42, but the underlying images are Dr. Murphy's, Petitioner's expert's. We
12 talked a little bit about this during Petitioner's opening. They have an A, B,
13 and a C proposed configuration.

14 Patent Owner disputes that A and B disclose the claim limitation 4f,
15 which requires that the scanning line driving circuit connects to power
16 between the protection circuits. The A iteration, which uses Reiner's ESD 1,
17 both in a first instance and then repeated at the end of this Figure 5 stacked
18 on top of each other picture from Dr. Murphy, at the top of Figure A in that
19 configuration, the scanning line driving circuit is connecting to power at the
20 same location as ESD 1. There is no between. At the bottom --

21 JUDGE HOSKINS: You said earlier, Ms. Tremblay, that the
22 scanning -- even if we make the light blue box a big box, you said earlier, if
23 I heard you correctly, that all of those connections that we see from the
24 bottom to the top are connections between the scanning line driving circuit
25 and the power line. So why can't the Petitioner pick the middle one, the teal
26 colored one, instead of what you've given us with the yellow box?

1 MS. TREMBLAY: So I'm being careful that we're not conflating
2 two distinct claim limitations. There is the claim limitation requiring that
3 the scanning line driving circuit be connected to the power supply. I agree
4 that Reiner teaches multiple connections between the scanning line driving
5 circuit and the power supply lines. But separate from that and separate from
6 the "a connecting portion" piece is Claim 4f, which requires that the
7 scanning line driving circuit be connected to the power supply line in total
8 between first and second protection circuits.

9 It has to have meaning that the entire scanning line driving circuit is
10 what is claimed and what is being required as being between the protection
11 circuits because there are claims in which that is not the case in which we
12 are talking about just individual circuit unit connections within the scanning
13 line driving circuit and those connections to power.

14 Did that answer your question, Judge?

15 JUDGE HOSKINS: Yes. Thank you.

16 MS. TREMBLAY: More or less? So Reiner --

17 JUDGE HOSKINS: You know, I don't see the words "all" or
18 "entire," you know, in limitation 4f. I do see scanning line driving circuit.

19 MS. TREMBLAY: And I think the point here -- so I want to be clear.
20 I'm not asking the Board to read in any limitations to Claim 4f, but it has to
21 have meaning, and under basic black letter claim differentiation principles, it
22 has to have meaning distinct from where Claim 10 is talking about circuit
23 unit connections, which could be any individual circuit unit connections
24 within the scanning line driving circuit to power. To have the scanning line
25 driving circuit itself -- this is not talking about unit connections, which is
26 what Reiner Figure 5 is showing. I want to be clear that going back Claim --

1 excuse me, Slide 26 -- each of these lines 74 and 76 are unit driver
2 connections between output devices 70 within the scanning line driving
3 circuit and the power supply line.

4 Claim 10 recites circuit unit connections between protection circuits.
5 And in our response, we are specific in not applying all of our arguments,
6 including this one regarding Claim 4f to Claim 10. Where Claim 4 recites
7 that the scanning line driving circuit -- I'm on Slide 27, excuse me -- is
8 connected to the power supply, scanning line driving circuit, period. Not an
9 individual scanning line driving circuit unit, not a portion of the scanning
10 line driving circuit, but where that scanning line driving circuit receives
11 power. That is between the connecting portions for the first and second
12 protection circuits.

13 I think the words in the claim give us what we need to understand that
14 the scanning line driving circuit and where any portion of it is connected to
15 power needs to be positioned in the particular way that is claimed between
16 the protection circuits. Reiner discloses only ESD devices internal to a
17 scanning line driving circuit if we're assuming Petitioner's position on the
18 source versus gate distinction, and it does not disclose what they've
19 annotated on Slide 26 with the blue box. That blue box should be drawn
20 around the entirety of Figure 5, and that makes a difference.

21 I do want to talk about specifically the C arrangement from Dr.
22 Murphy and Petitioner's suggestion that we have admitted that is satisfies
23 the claims. That is not correct. We have not admitted that arrangement.
24 First, setting aside the fact that Petitioner has taken liberties with the
25 annotations of Figure 5 and where they've drawn the blue box, Dr. Murphy
26 has not given an opinion about whether ESD-3 is even connected to the

1 scanning line driving circuit. I want to be clear that this is not a claim
2 construction dispute. This is an evidentiary deficiency in the record. The
3 Board does not have any expert testimony telling you that Reiner's ESD-3 is
4 connected to the scanning line driving circuit. That's a problem.

5 Now, I know that Mr. Rodkey noted that arrangement C has an
6 asterisk next to it. That is a pretty big asterisk, that during deposition, Dr.
7 Murphy was unwilling or unable to give an opinion about whether ESD-3 is
8 connected or not connected to the scanning line driving circuit. But I think
9 the crux of the substance of the argument here is that Reiner's source driver
10 module discloses the claimed scanning line driving circuit and only ESD
11 protections inside the scanning line driving circuit near each input or output.
12 Nowhere does the '157 Patent suggest that Claim 4 would allow for a
13 midpoint connecting portion, unlike Claim 10.

14 I do want to go back a bit and --

15 JUDGE HOSKINS: Sorry, Ms. Tremblay.

16 MS. TREMBLAY: No. Please.

17 JUDGE HOSKINS: Is it your view that Figure 2 of the challenged
18 patent -- let me make sure I have the right figure. Hold on one second,
19 please.

20 Yes. So Figure 2, it's the same as Figure 1, but it adds some more
21 electrostatic protection circuits, and if you'll forgive me for referring to it as
22 in the middle of the circuit.

23 MS. TREMBLAY: Yes.

24 JUDGE HOSKINS: Across the middle of the circuit. So I guess your
25 position is then that the -- Figure 2 is still covered by Claim 4 because

1 you've still got the ones at the top, right? I don't know if it's the first or
2 second. I think it's the second, actually, in Claim 4, but --

3 MS. TREMBLAY: So I apologize. I don't have Figure 2 in my deck,
4 but I know the figure that you're referring to. I believe it's also at
5 Petitioner's reply page 13. So Figure 2, as annotated by Petitioner
6 specifically to match Dr. Murphy's annotations of Figure 5 -- the first two
7 versions of those annotations which do not use the top and the bottom
8 circuits; they use a middle circuit with either the top or the bottom -- I think
9 I'm tracking where Your Honor is asking these questions.

10 JUDGE HOSKINS: Yes. That's perfect. Thank you.

11 MS. TREMBLAY: Yes. That's Claim 1, which requires top and
12 bottom plus middle. There is no disclosure in the patent, including in Figure
13 2, that suggests that middle plus top or bottom is what is meant by Claim 4
14 or is what it satisfied by any of the claimed inventions.

15 JUDGE HOSKINS: That was my question. Thank you.

16 MS. TREMBLAY: Yes. I think the intention of Figure 2 is to show
17 the second embodiment, as the '157 Patent specifically describes and claims,
18 and it's not excluding bottom or top. It's adding to the middle. And the
19 annotations the Petitioner offers of Figure 2, excluding top or bottom in
20 favor of middle and one or the other, is not a claimed embodiment
21 anywhere. It's not actually described as an embodiment by itself anywhere,
22 and it's certainly not what the claim language of Claim 4 requires when it
23 recites a scanning line driving circuit that is between two protection circuits.

24 I think it's also helpful to go to the language of Claims 16, 17, and 18,
25 which I think will further shed light on this limitation, which add the specific
26 limitation that the protection circuits in this claimed arrangement where the

1 scanning line driving circuit is between, it's the same claim language as in
2 Claim 4 and 16 and 17. And now it's further specifying that the protection
3 circuits are on either side of the scanning line driving circuit. That's an
4 extension of this same argument that we're making with respect to Claim 4
5 and why we disagree with Dr. Murphy's annotations on my Slide 26.

6 So what does Reiner actually teach? I'll be brief on this since we've
7 jumped around a bit. Reiner is actually teaching the prior art configuration.
8 And here I'm not talking about specifically an integrated circuit, but I'm
9 talking about the teaching that you put ESD protection circuits at inputs and
10 outputs. The critical disclosure in Reiner about inputs and outputs is at page
11 3, lines 4 to 8. And Dr. Schubert, Patent Owner's expert, has annotated
12 Reiner's Figure 5 in view of Reiner's disclosures and the bold low-ohmic
13 pathways that Figure 5 discloses to show exactly how ESDs 1, 2, and 3 are
14 all terminal protection circuits. There is no other version of a protection
15 circuit in Reiner.

16 ESD 1, as Dr. Schubert explains in his paragraph 80, shows that ESD
17 1 is connected to line 75, that output line here, between the contact path 72
18 in orange with the lightning bolt and the output device 70. That is where
19 ESD 1 is disclosed specifically to protect against electrostatic damage that
20 could enter the integrated circuit through the contact pad through one of
21 those access points. ESD 1 then shunts that charge through the low-ohmic
22 pathways and away from the circuitry.

23 Same thing can be said about ESD 2, also positioned between an
24 access point, contact pad 72, and circuitry 70 to be protected to move that
25 discharge away from the delicate circuitry. There is no second protection

1 circuit here. They are all terminal protection circuits. There is no -- oh, let
2 me pause. I might have lost Judge Hoskins. I'll just wait a moment.

3 JUDGE OBERMANN: We're paused on your time as well.

4 MS. TREMBLAY: Oh. Judge Hoskins, can you hear me okay?

5 JUDGE OBERMANN: We can't hear you, Judge Hoskins. Are you
6 muted?

7 JUDGE HOSKINS: Yes, I was muted. Thank you, Judge Obermann.
8 I was only out for a few seconds.

9 MS. TREMBLAY: I think I caught you right away, so I don't think I
10 did any talking while you were gone.

11 On my Slide 19, I've included the specific quote I referenced a
12 moment ago from Reiner, page 3, lines 4 to 8, confirming that each of these
13 protection circuits is what the '157 Patent improves over. They are just
14 input terminal protection circuits. There is no scanning line driving circuit
15 between a first protection circuit and a second protection circuit.

16 Important, I think it's worth noting that Dr. Murphy conceded during
17 his deposition that he did not consider the low-ohmic pathways that Reiner
18 Figure 5 illustrates. It seems like a tangential point, like not one that's
19 central to the dispute, but I disagree. And Dr. Schubert explains why
20 understanding why the low-ohmic pathways are in Figure 5 is what informs
21 POSITA's understanding of where the protection circuits are and what they
22 are trying to do.

23 Dr. Murphy admitted during deposition that he had not identified
24 those lines, he didn't think it was relevant to this analysis, and he was
25 unwilling to identify those lines during this deposition. So I'll conclude my

1 comments about Claim 4 unless the panel has any additional questions, and
2 I'll move on to my remaining arguments.

3 So turning to Slide 28 -- well, actually, I think I can skip Slide 28. I
4 think we've largely visited these slides earlier, so I'll move to the dispute
5 about source driver versus gate driver on my Slide 30. So this is not an
6 immaterial dispute between the parties. The Petitioner bears the burden of
7 showing that Reiner teaches not just ESD protection for a scanning line
8 driving circuit. That is not the invention; that is not what is claimed. Reiner
9 -- excuse me -- the Patent claims a specific ESD protection circuit
10 arrangement, and as a result, the Petitioner must show that Reiner discloses
11 that specific arrangement for a scanning line driving circuit.

12 Reiner discloses its particular configuration for a source line driver,
13 which is a data line driver, not a scanning line driver. Dr. Schubert explains
14 why Dr. Murphy has not shown how a POSITA would translate wholesale
15 the identical ESD arrangement into a differently arranged scanning line
16 driving circuit. He specifically opines, Dr. Schubert does, at paragraph 66
17 that a POSITA would expect to see differences between the gate driver and
18 the source driver arrangement that would dictate a different arrangement.

19 Now, the Board addressed this argument in part in the institution
20 decision, and I want to respond to that specific analysis. I believe in the
21 institution decision, the Board noted that Dr. Schubert had identified
22 differences in signal outputs between the gate driver and the source driver
23 and that the Board noted that that likely had little to do with the power
24 arrangement or the power inputs for the arrangements.

25 But Dr. Schubert explains that those signal outputs are material. In
26 particular, the signal outputs and the signal differences that he identifies

1 between gate driver and source driver, including the fact that there's
2 coupling that needs to take place in the gate driver, Reiner teaches its ESD
3 arrangement relative to the outputs. I'll go back to Reiner Figure 5. I'll use
4 Slide 24. Reiner's particular ESD configuration is tied to each signal output.
5 That is the crux of Reiner and why it discloses the ESD circuits it discloses.

6 As I explained a moment ago, ESDs 1, 2, and 3 are all about where
7 the outputs or the inputs are. Without evidence of record about what a
8 scanning line driving circuit would be expected to look like in Reiner, we
9 cannot wholesale transpose the ESD circuit arrangement that goes with the
10 source line driver outputs to an unknown different arrangement for a signal
11 line driver -- excuse me, a scan line driver.

12 Dr. Schubert's opinions about the specific differences that a POSITA
13 would expect to see between the gate and the source driver are at his
14 paragraphs 62 to 68, but I must admit that I agree with the Board that they
15 are signal output differences, but that those signal output differences matter
16 because that's how Reiner arranges its ESD protection circuits for each of
17 the signal outputs. And without evidence from Dr. Murphy other than his
18 opinion that a scanning line driving circuit would benefit from ESD
19 protection, that's not enough to show that Reiner's specific arrangement,
20 which is material to Petitioner's arguments, would translate in the scanning
21 line driving circuit context.

22 I'm going to move to Claim 8, the substrate limitations. So Claim 8
23 recites a display device further comprising a substrate and a scanning line
24 driving circuit being arranged on the substrate. It's that "being arranged on"
25 language over which the parties seem to have a dispute. So the flip chip
26 disclosure -- I'm on Slide 32 now -- on which Petitioner relies from Reiner

1 only suggests that the source driver module is mounted to the display
2 substrate on its contact pads. Being mounted to the display substrate contact
3 pads is not a disclosure that the scanning line driving circuit is arranged on
4 the display substrate. In fact, I would submit that Reiner teaches the source
5 driver module is arranged on its own separate substrate and not the substrate
6 of the device.

7 At the lower right corner of Slide 32 -- this is an annotated image of
8 Figure 4 from Reiner from the petition at page 46 -- the purple box that
9 encompasses both of the driver modules and the display itself, 60, is
10 invented. There is no disclosure in Reiner that suggests one substrate
11 containing each of those separate modules. There is no support in the record
12 for that annotation. I will point --

13 JUDGE HOSKINS: So --

14 MS. TREMBLAY: Go ahead.

15 JUDGE HOSKINS: Ms. Tremblay?

16 MS. TREMBLAY: Yes.

17 JUDGE HOSKINS: Is there a claim construction position underlying
18 that, that the display device in the preamble is a limitation? Is that a linchpin
19 of the argument you just walked us through?

20 MS. TREMBLAY: Your Honor, I don't think that it's an affirmative
21 claim construction argument that the preamble must be limiting. I think it's
22 a plain and ordinary understanding of the claim as recited, in particular, its
23 dependency from Claim 4 that doesn't include that limitation. And Dr.
24 Schubert opines that that is how one skilled in the art would understand a
25 display device comprising a substrate and comprising a scanning line driving
26 circuit arranged on that substrate would be.

1 JUDGE HOSKINS: But if the substrate doesn't have to be the
2 substrate in the display device, then any substrate will do, right?

3 MS. TREMBLAY: I guess, could you clarify what you mean of the
4 display device? I guess, I want to make sure I'm understanding your
5 question.

6 JUDGE HOSKINS: Sure.

7 MS. TREMBLAY: Because I know earlier we talked about that
8 there's no material limitation for that substrate, and I agree with that.

9 JUDGE HOSKINS: No. I'm just -- so there's a substrate in Reiner.

10 MS. TREMBLAY: Yes.

11 JUDGE HOSKINS: And you're telling us that it's got to be, not
12 material. I understand that's a different issue. But there's something special
13 about, something particular, I guess, about the substrate that's recited in
14 Claim 8. And unless that particularness is that it has to be the substrate of a
15 display device, I don't know what it is. So just help me with that.

16 MS. TREMBLAY: Oh. Well, so I agree in that sense that, yes, I
17 think the plain language of Claim 8 requires that the substrate be of the
18 display device, as it's a display device comprising a substrate, the scanning
19 line driving circuit, power supply lines as it goes through the limitations.

20 JUDGE HOSKINS: So isn't that a linchpin then of that, that the
21 display device is an affirmative limitation of Claim 8?

22 MS. TREMBLAY: I don't know that it needs to be an affirmative
23 limitation so much as we're understanding the substrate in context as
24 claimed. And I think in order to understand that a display device is
25 comprising not just a scanning line driving circuit, but a substrate and that
26 scanning line driving circuit arranged down the substrate, I think that that

1 has to have meaning, and in particular, in view of the specification. But
2 everything that we know about how the patent describes its invention, this is
3 the dependent claim that is reciting a display device substrate.

4 JUDGE HOSKINS: Okay. Thank you.

5 MS. TREMBLAY: I want to address Ground 2 briefly. So Petitioner
6 uses Takahara just to fill particular gaps in Reiner specifically related to
7 input terminals and to teach the principle that a POSITA would know that a
8 scanning line driving circuit would benefit from ESD protection. So if the
9 panel agrees that Reiner does not teach the claimed arrangement, meaning a
10 scanning line driving circuit that is connected to the power supply line
11 between the protection circuits or providing the protection circuits on either
12 side of the scanning line driving circuit, then Petitioner does not argue and
13 cannot dispute that Takahara does not fill that gap.

14 JUDGE OBERMANN: You have 45 seconds left.

15 MS. TREMBLAY: I see that, Your Honor.

16 JUDGE OBERMANN: Sorry.

17 MS. TREMBLAY: I'm going to wrap up. I will also note. I'll not
18 that on Slide -- excuse me -- 39, that the Petitioner takes liberties with how
19 they've annotated Takahara. Both of these annotations on Slide 39 come
20 from Petitioner. The first on the left is the correct annotation of Takahara,
21 highlighting the power supply lines, neither of which include a protection
22 circuit at all. And on the right is an unsupported annotation of Takahara
23 where the protection circuits are on signal lines, and the Petitioner suggests
24 without a supporting disclosure in Takahara that the power lines are
25 somehow connected to the short circuit wiring and then connected up
26 through signal lines to protection circuits.

1 I'll make my point on this brief. There's no support for these
2 annotations, but I also don't think they're material to fixing the critical gap
3 in Reiner, which is that it does not teach scanning line driving circuit being
4 connected to the power supply between first and second protection circuits.
5 Reiner discloses ESD protection network internal to an integrated circuit at
6 inputs and outputs only. Takahara discloses the next iteration from the art,
7 putting a protection circuit on a signal line, and neither makes the evolution
8 to the '157 Patent, which requires the scanning line driving circuit being
9 protected to power supply with two protection circuits protecting that
10 scanning line driving circuit.

11 If there's nothing further, I'll reserve my remaining time.

12 JUDGE HOSKINS: Thank you. Hearing nothing from my
13 colleagues, it looks like you have nine minutes of your time left for your sur-
14 rebuttal. Did I do the math right on that?

15 MS. TREMBLAY: That's what it looked like.

16 JUDGE OBERMANN: Yes. That's what I had here.

17 JUDGE HOSKINS: Okay. Thank you.

18 JUDGE OBERMANN: And I believe Petitioner has 13 minutes; is
19 that right?

20 JUDGE HOSKINS: I think it's 23.

21 JUDGE OBERMANN: Twenty-three. Okay.

22 JUDGE HOSKINS: Thank you for that. So Mr. Rodkey, you can
23 take the podium when you're ready, and you've got 23 minutes.

24 MR. RODKEY: Thank you, Your Honors. I think what we just heard
25 from Patent Owner's counsel is a lot of what Judge Hoskins is alluding to,
26 which is they're just trying to read in additional limitations to each of these

1 claims. Almost everything that they have argued is not recited in any of the
2 challenged claims as far as the distinction that they are trying to say is
3 material.

4 The reason I'm on Slide 25 right now is because nothing that I heard
5 in Patent Owner's opening argument disagreed that Figure C meets their
6 interpretation of the claim, nor can they, because every single one of the
7 scanning line driver circuit connections is connected to the power line in
8 between the first ESD protection circuit in light green at the top and the
9 second ESD protection circuit in dark green at the bottom.

10 They actually have no rebuttal to this. Their only rebuttal is, well, Dr.
11 Murphy didn't agree. That's not a rebuttal. That's them saying, no, we
12 don't like our own interpretation in District Court, we don't like that you're
13 actually putting forth our reading in District Court, and that the way we're
14 mapping for infringement is actually taught by Reiner. They don't like it,
15 but their own construction renders their claims unpatentable.

16 I do want to address, I believe, your question Judge Obermann. You
17 asked if we're changing our position between the petition and the reply brief.
18 We absolutely are not. And in fact, Patent Owner's counsel admitted that
19 the annotations provided in both of those by Dr. Murphy are consistent. We
20 have always labeled the unit circuit 70, drawn the box around those as the
21 scanning line driving circuit. But I believe Patent Owner's counsel
22 acknowledged that it doesn't actually matter where you draw the box. All of
23 those devices are still connected to the scanning line driving circuit. They
24 said it is not, in fact, a dispute about whether it's in or connected to because
25 it is still connected to.

1 So we haven't changed any of our positions. They've acknowledged
2 that all of our mappings are the same. And, in fact, if you look at the
3 petition itself as -- I'm going to use page 31 as an example, but it's true for
4 all of our mappings -- in mapping A, we say it shows a gate driver 63 being
5 connected to the power supply line, and then we say the second connecting
6 portion where the first protection circuit, ESD 1, at the first gate driver unit.
7 We are referring to those units those elements 70. All of our arguments, all
8 of our positions have been consistent, and they have been consistent in all of
9 our mappings, and I believe Patent Owner actually acknowledged that.

10 I heard Patent Owner's counsel say that they're somehow
11 distinguishing that they didn't rely on Claim 4 for Claim 10 because they're
12 now trying to argue there's a claim differentiation dispute, but at the Patent
13 Owner response page 47 to 48, their only argument is to refer back to Claim
14 4 and say, for the same reasons, Claim 10 should be found patentable. They
15 absolutely always relied on Claim 4 in their arguments there for Claim 10,
16 and then they tried to create some dispute about claim differentiation in the
17 Patent Owner response.

18 As far as that claim differentiation argument goes, it has to fail
19 because what we are talking about is a connection in Claim 10 of a circuit
20 driver element. That just tells you where to look for the individual
21 connection. Claim 4 still just says "connected to." And if you think about
22 something like a hallway, right, with five doors, all five of those doors are
23 their own connection. It's the same here. We're only talking about being
24 connected. Only one connection is required.

25 Patent Owner's counsel spent a lot of time repeating the phrase "the
26 scanning line driver circuit being between the two ESD protection circuits."

1 That's not what's claimed. In 4f, it says, the scanning line driver circuit
2 being connected to the power line in between. The only connection that's
3 being recited is the connection that's in Element 4e, that first connecting
4 portion. It's the only connection recited. There's only one. And even if you
5 take that second recitation of connection, you still only need one connection.
6 Nowhere does it say all of the connections, every single one of the
7 connections, and so we shouldn't be reading that into the claim. The claim
8 is very clear on its face, it just says connected. So any one of those
9 connections is sufficient.

10 I'm going to go to Slide 39 now. And again, you heard Patent Owner
11 make the argument that somehow these integrated circuits of Reiner are not
12 sufficient. They're actually one of the examples listed in the '157 Patent.
13 On Slide 39, I'm at the '157 Patent, column 11, lines 28 to 33, and it
14 specifically says in the highlighted part, "Also, instead of a thin film
15 transistor on an insulating substrate," what Patent Owner's counsel said must
16 be read into the claim, "a driving circuit formed on the silicon crystal wafer
17 may be used." That's an integrated circuit. Dr. Murphy testified that there's
18 nothing that limits it to being formed on the substrate, and there's nothing
19 that excludes the integrated circuit in Reiner, and, in fact, the '157 Patent
20 explicitly includes that.

21 Dr. Murphy further explained just as far as motivation to combine in
22 his reply declaration at paragraph 82 and even during his deposition at pages
23 69, line 2, to 77, line 4; and page 93, line 8, to page 94, line 1, he said once
24 you've put the Reiner circuit onto the substrate for the display device, it is
25 subject to every single one of the problems to a scanning line driving circuit
26 that is formed on the substrate. And so it needs all of those additional

1 protections, and those protections would protect it from the ESD, and it
2 occurs on the substrate after its been mounted.

3 We also heard an argument from Patent Owner's counsel about the
4 ESD being away from the input terminals. I'm back on Slide 25. Every
5 single one of those ESD protection circuits all the way down the line are
6 away from the input terminals. When you have 480 of these, that dark green
7 input terminal or that dark green ESD protection circuit at the bottom is 480
8 driver units away. That's the same distance as the second protection that
9 Patent Owner's counsel was trying to identify as somehow being unique and
10 novel and distinct. It's absolutely not. Reiner does the exact same thing.

11 I heard them argue that there really isn't a dispute about "in" and "to."
12 We agree. If something is in, it's still connected to. I believe Judge
13 Obermann looked at that case law that shows that, so I'm not --

14 JUDGE OBERMANN: What about "between"? Where is it
15 between?

16 MR. RODKEY: Where is what?

17 JUDGE OBERMANN: Where do you meet the claim limitation of 4f
18 that requires that scanning data line to be between?

19 MR. RODKEY: So the Limitation 4f does not require the scanning
20 line driving circuit to be between. It requires a connection of the scanning
21 line driving circuit to be between the two ESD protection circuits. And you
22 can see that on Slide 25 because we have the connection, which is shown in
23 the teal or blue green box. That's what the claim says. The claim says, "a
24 connection between." It's connected between the two ESD protection
25 circuits. It does not say the entirety of the scanning line driving circuit is in
26 between. That is Patent Owner just trying to read an additional limitation

1 with the claim. Claim 4f says “connected,” and we can see that. Any one of
2 those lines, 74 or 76, creates a connection for the scanning line driving
3 circuits shown in all three of these figures on Slide 25.

4 And Patent Owner, I believe I heard them say they agree that these are
5 multiple connections. And again, the claim only requires one of those
6 connections to be satisfied. Nowhere does it say all, nowhere does it say
7 every single one. It just says one.

8 All right. Judge Hoskins, I believe you asked about the annotations
9 for Figure 2 in the ‘157 Patent, those are absolutely covered by Claim 4
10 because as I mentioned in the opening, Claim 4 recites the relative positions
11 of these connections. And so they’re trying to say that really there’s only
12 Figure 1, and Figure 1 requires that these two things are on the ends, but
13 nothing in Claim 4 says that they’re on the ends.

14 I think I might have lost Judge Hoskins.

15 JUDGE HOSKINS: I can hear. I am having some video issues, but
16 I’ve been able to hear everything so far.

17 MR. RODKEY: Okay. That’s the important part.

18 But as I mentioned before, there’s all the other embodiments that the
19 ‘157 Patent describes, including in Figure 2 where you put the additional
20 ESD protection circuit in the middle. And then when you put them on
21 quarters, and then as the same as Reiner, every single one of those driver
22 units have an ESD protection circuit.

23 So when you’re talking about those relative positions, that’s what
24 Claim 4 is talking about. And when you’re looking at those other
25 embodiments, it can read multiple ways on each of those embodiments, and
26 that’s what we’re showing in Figure 2.

1 I want to go back to Slide 27. What Patent Owner had said was that
2 there is no evidence that Figure C is met by the claims. That's absolutely
3 wrong. At paragraph 110 of Dr. Murphy's declaration, he says, quote, "I
4 have been asked to consider the situation in which ESD3 is considered to be
5 connected to the scanning line driving circuit through the power lines."
6 That's what Patent Owner has alleged of infringement in the District Court
7 and says, "As shown in C1," and then explains why this is met.

8 There's absolutely evidence here. It's Dr. Murphy's testimony in
9 paragraph 110. It's also the figures that he has annotated on the right, and
10 those come directly from Reiner. Other than the question about how big that
11 blue box is, which I believe is not really a material dispute anymore because
12 Patent Owner said that there was no difference between that box containing
13 the ESDs and not containing the ESDs because "in" is still connected to.
14 We have the evidence right here.

15 There was a discussion about inputs and outputs and whether that's a
16 meaningful distinction. It's not. There's nothing in the claim that says
17 protects the inputs or the outputs or protects not from the inputs and the
18 outputs. All it says is the ESD protection circuits protect the scanning line
19 driving circuit. There is absolutely no dispute that all of the ESDs in Reiner
20 protect the scanning line driving circuit. In fact, Patent Owner showed you
21 four annotated examples from their own expert that show how each of these
22 ESDs protects the scanning line driving circuit. That's all that's claimed.

23 We also heard that Reiner is no different than the acknowledged prior
24 art in Figure 11. On Slide 36, we can see that they are absolutely different.
25 I have never heard the argument that one ESD shown in Figure 11 is the
26 equivalent of 480 ESDs shown in Reiner. You can see the entire line on the

1 right is absolutely missing from Figure 11. They are not the same. Reiner
2 provides hundreds of additional ESDs that are not in the conventional art of
3 the '157 Patent.

4 We heard a discussion about the low-ohmic paths. They're not
5 material. There's no recitation for low-ohmic paths in the claims, and, in
6 fact, the Patent Owner's point of low-ohmic paths doesn't change the
7 outcome because the claim requires that the ESD protection circuits protect
8 the scanning line driving circuit. They admitted that it does that. They
9 showed you again the four examples of how they do that, and they do that all
10 along the line from the very first to the very last of the driver circuit units.

11 There was a discussion about how Patent Owner's expert alleged
12 various differences and then said that there's no evidence showing that you
13 would apply the same Figure 5 to the scanning line driving circuit or the gate
14 driver in Reiner. We already discussed in Dr. Murphy's original declaration
15 in paragraph 113 where he explained why you would, in fact, use Reiner's
16 Figure 5. And I didn't hear any discussion rebutting that from Patent
17 Owner's counsel in that original paragraph 113 today. They don't have a
18 rebuttal for it from their own expert, and then Dr. Murphy in his reply
19 declaration here in paragraphs 38, 39, and 40 actually explains then what
20 Patent Owner's expert has called differences are, in fact, the same.

21 They pointed to the fact that they are individual driver units. That's
22 true of both types of driver units, the scanning line driver circuit and the data
23 driver. They talked about the signal line, and what Dr. Murphy explained,
24 both in his original declaration and his reply, is that the boxes shown in
25 Reiner 70 are black boxes. Those are protected regardless of the
26 configuration of the circuits inside, and he reiterated that in his reply

1 declaration. It doesn't matter what's in there because it's being protected,
2 it's like a fence around a yard.

3 And then the last point I would like to make is about Takahara. Patent
4 Owner said that we have just wholesale made up the power line connections
5 to the scanning line driving circuit. Again, they are not reading Takahara
6 because Takahara shows it. In fact, Dr. Murphy annotated it in Figure 1.
7 All of those little Xs that have been annotated by Petitioner's expert, Dr.
8 Murphy, that absolutely connect the --

9 JUDGE HOSKINS: What slide are you on?

10 MR. RODKEY: Oh, I'm sorry. I'm on Slide 49. Those Xs, which
11 are the short circuit wirings, connect from VDDY and VSSY, the two power
12 lines, up to the scanning line driving circuits. It's there. It's on page 76 of
13 the petition as well where we explained that, and it's also in Dr. Murphy's
14 paragraph 235 of his original declaration and also paragraph 92 of his reply
15 declaration.

16 So what we see from all of this is Reiner is actually teaching
17 everything but a little bit better than the '157 Patent. And it's the same
18 problem, it's the same solution, and so all of the claims are unpatentable,
19 both on the first ground, obviousness case on Reiner, and the second ground
20 of Reiner with Takahara. And if there are no further questions, that's all we
21 have.

22 JUDGE HOSKINS: Thank you, Mr. Rodkey. I do not, and I don't
23 hear any from my colleagues.

24 So Ms. Tremblay, you've got nine minutes. Feel free to begin when
25 you are ready.

26 MS. TREMBLAY: Thank you, Your Honor.

1 So I've put Slide 27 up from our demonstratives to show the claim
2 language of Claim 4 and specifically again the primary dispute for the day,
3 which is the scanning line driving circuit being connected to the power
4 supply line between the connecting portions for the protection circuits.

5 So first, I want to be clear that Patent Owner does dispute the C
6 configuration from Mr. Murphy -- excuse me, Dr. Murphy. I believe I heard
7 Petitioner's counsel suggest that we do not dispute Figure C. We absolutely
8 do. First, because it is a problem that Dr. Murphy refused to render an
9 opinion about whether ESD-3, which is used in that C configuration, is
10 connected to the scanning line driving circuit. That's at Exhibit 2008, which
11 is Dr. Murphy's deposition transcript at page 128, 2 through 133, line 9. If
12 he is unwilling to have an opinion about whether ESD-3 is connected to the
13 scanning line driving circuit, then he cannot offer evidence that arrangement
14 C invalidates the claims.

15 But beyond that, the arrangement itself is still a problem for Claim 4f.
16 No one disputes that Reiner's configuration is an integrated circuit with an
17 ESD protection network disposed internal to that integrated circuit. As a
18 result, it cannot teach a scanning line driving circuit connected to a power
19 supply between where separate protection circuits are connected to the
20 power supply.

21 I know the core of this dispute is about what is a connection for the
22 scanning line driving circuit to the power supply line. And Mr. Rodkey used
23 a hallway analogy, and I think that that's apt because if you're looking to
24 protect a hallway, if you're looking to, as Claim 4 recites, protect the
25 scanning line driving circuit, it's not sufficient to put security in the middle
26 of the hallway. You'd put security at the beginning of the hallway and at the

1 end of the hallway, and that is specifically what Claim 4 is reciting. We
2 know that Claim 4's limitation where the scanning line driving circuit and its
3 connection to power is between the protection circuits because there are
4 some claims where that is not what is claimed, and that's specifically Claim
5 10.

6 I believe Petitioner suggested that we applied all of our same
7 arguments for Claim 4 to Claim 10 in our Patent Owner's response. That's
8 not correct. Our Patent Owner's response specifically only applies a subset
9 of our arguments from Claim 4 to Claim 10, so I just wanted to clarify the
10 record on that point. I also believe --

11 JUDGE HOSKINS: Where does the Patent Owner response make the
12 claim differentiation argument --

13 (Simultaneous speaking.)

14 MS. TREMBLAY: Well, that's in our sur-reply. That's in our sur-
15 reply, Your Honor.

16 JUDGE HOSKINS: Thank you.

17 MS. TREMBLAY: If you'd like the specific page numbers, I'm
18 happy to get those for you.

19 JUDGE HOSKINS: That would be great, but it's not necessary.

20 MS. TREMBLAY: I believe I also heard Petitioner's counsel suggest
21 that Reiner does disclose dozens of protection circuits that are away from an
22 input terminal. That is not correct. Reiner's disclosure is very clear that
23 each of its ESD protection circuits, 1, 2, and 3, are provided at an input or an
24 output. Each is designed to protect either the power lines or each of the
25 contact pads, which are the points of vulnerability for each of the output

1 devices 70. There is no protection circuit in Reiner away from an input or
2 an output. Petitioner's representation on that point was not correct.

3 To address the point about Petitioner's evidence that Reiner's ESD
4 protection network is arranged for a data line driver as opposed to a scanning
5 line driver would be wholesale applied to the scanning line driving circuit, I
6 want to be clear about what Dr. Murphy's opinions are. His opinions are not
7 specific enough, his opinions that transistors are in the scanning line driving
8 circuit and therefore also benefit from protection. And line drivers are also
9 in a scanning line driving circuit and also benefit from protection.

10 That is not enough to show that Reiner's very specific ESD protection
11 circuit arrangement for the inputs and outputs of a source driver. They need
12 that to apply wholesale, no changes, to a gate driver context, and the signal
13 outputs are different. And as a result, where the ESD protection circuits
14 would go would necessarily be different. And Dr. Schubert opines that for
15 these reasons, knowing that gate line drivers and source line drivers have
16 different arrangements, Dr. Murphy's suggestion that scanning line driving
17 circuit needs protection, too, because it has transistors, too, is not enough to
18 bridge that gap in Reiner's disclosure.

19 Finally, I'll just briefly address Petitioner's suggestion that Takahara's
20 Xs along the short circuit wiring 91 indicate connection points. They very
21 much do not. Takahara's disclosure is explicit that each of those Xs is the
22 location at which you would cut the short circuit wiring during
23 manufacturing before completing the device. Those are not connection
24 points, and Patent Owner -- excuse me -- Petitioner misrepresents
25 Takahara's disclosure. And unless the panel has any additional questions for
26 me, I will conclude my remarks there.

1 JUDGE HOSKINS: Thank you, Ms. Tremblay. Since we have a
2 little bit of time, I will ask --

3 MS. TREMBLAY: Yes.

4 JUDGE HOSKINS: I want to give you an opportunity. I'm looking
5 at Petitioner's demonstrative Slide 28.

6 MS. TREMBLAY: Let me pull that up. Twenty-eight. I have a PDF
7 version I can share. Yes, Your Honor.

8 JUDGE HOSKINS: Okay. Thank you for that. So this is, I believe,
9 the slide where they're trying to walk us through what was going on in the
10 Complaint in the District Court action and saying it's kind of the same as
11 their mapping C. I understand your point about evidence and what their
12 expert may or may not have testified to in this regard, but I'm just
13 wondering whether -- and I'm not -- if you want to stand silent, that's okay.
14 But I want to give you the opportunity to at least address whether or not their
15 comparison between the Complaint and mapping C holds water.

16 MS. TREMBLAY: Yes, Your Honor. So two points: one, nowhere
17 in the briefing has Petitioner actually made this comparative argument. The
18 complaint is of record, but it's not argued in this way in the briefing, so I
19 would submit this is a new argument.

20 But to answer the substance of the question, our infringement
21 mapping is not mapping C from Dr. Murphy. In fact, it's the mapping I've
22 been talking about all day, where the protection circuits -- and I know it's
23 very hard to tell from the small images on Slide 28 -- but our infringement
24 mapping places protection circuits outside of the scanning line driving
25 circuit. It's annotated in green in the small excerpts from the complaint
26 exhibit. And each of those protection circuits is outside of that scanning line

1 driving circuit to protect that scanning line driving circuit, where the
2 scanning line driving circuit is connected to power between each of those
3 protection circuits' connection to power.

4 We do believe that it is correct to say that a protection circuit is
5 connected to this scanning line driving circuit through the power supply line,
6 but the mapping is entirely different than the mapping that Petitioner is
7 offering to Reiner's integrated circuit.

8 JUDGE HOSKINS: Thank you for that. That was my only final
9 question, so let me pause to make sure my colleagues do not have any
10 further follow-up. No? Okay.

11 So I want to thank both counsel today for really excellently presented
12 oral arguments. I don't say that very often, but I think it's true in this case. I
13 want to apologize for my connectivity issues. I know that adds a whole level
14 of stress to presenting argument, and that's not fun, and I want to thank both
15 counsel for being very professional on that front.

16 So we're going to adjourn, but just, please -- you know, you're going
17 to lose us. Judge Obermann is going to walk out of the courtroom, and then
18 we're going to be disconnected, but please just hang around for a few
19 moments and make sure the court reporter has whatever the court reporter
20 needs. So thank you very much, and we are adjourned.

21 (Whereupon, the above-entitled matter went off the record at 3:38
22 p.m.)

PETITIONER:

Joshua L. Goldberg

James R. Barney

Qingyu Yin

Sydney Kestle

Tyler M. Akagi

Kevin D. Rodkey

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP

joshua.goldberg@finnegan.com

james.barney@finnegan.com

qingyu.yin@finnegan.com

sydney.kestle@finnegan.com

tyler.akagi@finnegan.com

kevin.rodkey@finnegan.com

PATENT OWNER:

Cyrus A. Morton

Samuel J. LaRoque

ROBINS KAPLAN LLP

cmorton@robinskaplan.com

slaroque@robinskaplan.com