

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

---oOo---

COMCAST CABLE COMMUNICATIONS,	:	
LLC,	:	
	:	
Petitioner,	:	
	:	
vs.	:	No. IPR2024-00432
	:	
ENTROPIC COMMUNICATIONS, LLC,	:	
	:	
	:	
Patent Owner.	:	

REMOTE VIDEO DEPOSITION OF SAYFE KIAEI
April 11, 2025

Job No. 1308335

Stenographically reported by:
LAURA AXELSEN, CSR NO. 6173
RMR, CCRR, CRR, CRC

Page 2 1 BE IT REMEMBERED THAT, pursuant to Notice and on 2 Friday, April 11, 2025, at 9:02 a.m. thereof, with all 3 participants being present via Zoom videoconference, 4 before me, LAURA AXELSEN, a Certified Shorthand 5 Reporter, remotely appeared 6 SAYFE KIAEI 7 called as a witness by the Patent Owner. 8 9 ---oOo--- 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Page 4 1 INDEX 2 3 PAGE 4 EXAMINATION BY MS. WOO 5 5 6 ---oOo--- 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
Page 3 1 APPEARANCES 2 3 FOR THE PETITIONER: 4 5 BANNER WITCOFF 6 BY: SIMON C. LASKER, ESQ. 7 JOHN M. FLEMING, ESQ. 8 1100 13th Street, NW, Suite 1200 9 Washington, District of Columbia 20005 10 jfleming@bannerwitcoff.com 11 slask34@bannerwitcoff.com 12 13 FOR THE PATENT OWNER ENTROPIC COMMUNICATIONS, LLC: 14 15 LOWENSTEIN & WEATHERWAX, LLP 16 BY: COLLETTE WOO, ESQ. 17 1016 Pico Boulevard 18 Santa Monica, California 90405 19 woo@lowensteinweatherwax.com 20 21 ---oOo--- 22 23 24 25	Page 5 1 THE REPORTER: I am Laura Axelsen, CSR No. 2 6173. 3 SAYFE KIAEI, 4 having been duly sworn/affirmed 5 under penalty of perjury 6 testified as follows: 7 EXAMINATION BY MS. WOO 8 MS. WOO: Q. Good morning, Dr. Kiaei. Thank 9 you so much for your time. 10 A. Good morning. 11 Q. Can you just spell your full name for the 12 record, please? 13 A. Sure. Sayfe Kiaei. 14 MS. WOO: I'm sorry. Can you spell that for 15 the record? 16 A. Sure. S-a-y-f-e K-i-a-e-i. 17 Q. Is there any reason why you may not be able to 18 provide truthful and accurate testimony today? 19 A. Nope. 20 Q. Are you currently under the influence of any 21 substance that may preclude you from providing truthful 22 and accurate testimony today? 23 A. No. 24 Q. Do you understand that you're testifying under 25 oath?

1 A. Yes, I am.
 2 Q. And do you have clean copies of the filings of
 3 this IPR?
 4 A. Yes, I do.
 5 Q. Great. If you want to access any documents
 6 during my questioning, I just ask that you let me know
 7 what document you're viewing so that I know the basis of
 8 your opinion. Is that fair?
 9 A. Absolutely. Yes, it is.
 10 Q. Great. So let's first look at your second
 11 declaration. That's Exhibit 1018 in this IPR, and I'm
 12 going to drop a clean copy into the chat so that the
 13 reporter also has it. Okay. And let me know when you
 14 have that open.
 15 A. Yes, I have that open.
 16 Q. Approximately how many hours did you prepare
 17 your -- or did you spend in preparing your declaration?
 18 A. I would say over 25, 30 hours.
 19 Q. And is there any change in your opinions as
 20 stated in your declarations?
 21 A. No.
 22 Q. Why don't we look at Paragraph 4 of your
 23 declaration. That is materials reviewed. Let me know
 24 when you're there.
 25 A. Yes, I'm there, Counsel.

1 Q. Okay. Did you review the transcript of your
 2 first deposition in preparing your reply declaration?
 3 A. I did primarily on the areas and citations I
 4 had in my second declaration.
 5 Q. Okay. And did you review the transcript of
 6 your first deposition in preparing for this deposition?
 7 A. I did look at it as well where I had the
 8 citations in my second declaration.
 9 Q. Okay. Approximately how many hours did you
 10 spend preparing for your deposition today?
 11 A. I think you asked that question. It was over
 12 25 -- over 25, 30 hours.
 13 Q. Oh, I believe the first time I asked is about
 14 your declaration and preparing --
 15 A. Oh.
 16 Q. -- your declaration. This time is about your
 17 deposition.
 18 A. The review of the declaration -- I guess I
 19 misunderstood that. The review of the declaration and
 20 deposition combined together was about -- over 25, 30
 21 hours.
 22 Q. All right. Understood. And what did you do
 23 to prepare for your deposition today?
 24 A. For the deposition today, I reviewed the '775
 25 patent. I reviewed the prior arts that I reference in

1 the second declaration, my declaration as well as the
 2 exhibit we have now, the exhibit on my second
 3 declaration, and -- and also I met with the counsel,
 4 Mr. Fleming and Mr. Lasker, reviewing those.
 5 Q. Okay. Why don't we now turn to Rabenko.
 6 That's Exhibit 1005. I'll put the clean copy in the
 7 chat. And just let me know when you have that open.
 8 A. Yes, I have that open.
 9 Q. Okay. When did you last review the Rabenko
 10 reference?
 11 A. Last night.
 12 Q. Okay. So why don't we look at Figure 5b, and
 13 let me know when you're there.
 14 A. I have Figure 5 open there. Yes.
 15 Q. What does Figure 5b depict?
 16 A. Here 5a as also says in Paragraph 12 of
 17 Rabenko is exemplary software architecture operating on
 18 the DSP platform, Figure 4.
 19 Q. I'm sorry. I think we're looking at the wrong
 20 figure. I said 5b not 5a.
 21 A. Oh, okay.
 22 Q. Sorry. So the question is what does Figure 5b
 23 depict?
 24 A. Okay. Figure 5b is a block diagram of
 25 exemplary architecture for interfacing the voice and

1 data processor with the MIPS core processor in the
 2 residential gateway.
 3 Q. So where is the MIPS core processor depicted
 4 in Figure 5b?
 5 MR. FLEMING: Objection; scope.
 6 THE WITNESS: Could you point out in my
 7 declaration where do I discuss Figure 5b?
 8 MS. WOO: Q. I believe -- let me see. I have
 9 to do a text search. So it is in at least Paragraph 26
 10 of your declaration.
 11 A. Okay. I see that. So my declaration I did
 12 not go into the full analysis of Figure 5b. I mention
 13 that in my Paragraph 26. So if you like me to do that,
 14 I will have to sit down and read the description of
 15 Figure 5b and then answer your question. Is that okay?
 16 Q. Sure.
 17 A. So, as I said before, I have not gone through
 18 the software analysis of -- in Figure 5b in my second
 19 declaration. But, as you see in Paragraph 97, it is
 20 a -- that figure is a exemplary embodiment of a
 21 software, which is showing the application layer that
 22 includes the MTA, which is call client 520, and the
 23 interface in the software is with the host application
 24 interface, which is in the software description or the
 25 software block that they show there, 522. Again, this

1 is a software -- the software layer diagram.

2 A. Okay. So I'm just trying to understand
3 Figure 5b. So as you read from Paragraph 13, it says
4 that it's a block diagram of an exemplary architecture
5 for interfacing a voice and data processor with a MIPS
6 core processor and a residential gateway. I just don't
7 see a MIPS core processor. So I'm just trying to
8 understand where it is in this figure.

9 MR. FLEMING: Objection; form.

10 MS. WOO: Q. Do you see the MIPS core
11 processor depicted in Figure 5b?

12 A. I believe I answered your question because as
13 I said, is that referring -- if you read the
14 Paragraph 97, which is the more details of the -- what
15 is in the figure 5b. What it is is that it is a
16 exemplary embodiment. The proxy gateway function is
17 implemented within embedded software application layer,
18 and it talks about Figure 5b and that application layer.

19 So this is the software diagram of the
20 application layer, and the application layer you show --
21 as the legend also shows below, you're showing, you
22 know, the software description, and the software
23 descriptions are how they're calling back functions or
24 callback functions or direct callback functions, and, as
25 I read to you already, the host application program and

1 interface -- again, these are the interfaces within the
2 software that is happening is providing a messaging
3 between a -- between the various things and MIPS core
4 processor 228, which then refers to Figure 2.

5 So really Figure 2 is the -- the correct
6 functional diagram of the -- not the correct. Figure 2
7 is the functional diagram that it shows in the
8 residential gateway. So Figure 5, as I've already
9 mentioned to you, is a software diagram of the different
10 calls.

11 Q. I see. So how does the software in Figure 5b
12 relate to the MIPS core?

13 MR. FLEMING: Objection; scope.

14 THE WITNESS: This is a -- at the high level,
15 this is a software diagram of the different protocols
16 and different softwares and functions, and those
17 softwares are running on the various processors that are
18 depicted in Figure 4. As in any software, the central
19 processing unit or the processors perform software
20 operation, and that's how they're related. I think a
21 person skilled in the art would know that well.

22 MS. WOO: Q. Okay. So earlier you mentioned
23 the host application programming interface 522. Do you
24 see that block on Figure 5b?

25 A. Yes, I see 522.

1 Q. Okay. So I see that that block has two Hs.
2 It says H-H-A-P-I. Do you know what that first H stands
3 for?

4 A. No.

5 Q. Okay. So it might be a typo?

6 A. Yeah, I think either a typo or -- or we -- no,
7 I don't see that because it also calls it HAPI with one
8 H in that sentence. Also application programming
9 interface HAPI 522.

10 Q. Understood. And what is the block below it
11 DSP 523?

12 MR. FLEMING: Objection; scope.

13 THE WITNESS: DSP stands for digital signal
14 processor.

15 MS. WOO: And what is DSP 523?

16 MR. FLEMING: Objection; scope.

17 THE WITNESS: I think I already answered. The
18 DHP stands for digital signal processor, which is the
19 digital signal processor 523. I have not gone through
20 the software analysis about the DSP and the different
21 functions there are. So if you can show me my
22 declaration, where do I discuss DSP analysis on 523, I
23 can discuss that.

24 MS. WOO: Q. Well, why don't we look at
25 Paragraph 97 of Rabenko and let me know when you're

1 there.

2 A. So I assume that means that your -- you do not
3 have a specific place in my declaration that I have
4 analyzed the DSP block 523, correct?

5 Q. Well, I'm actually just trying to see if this
6 block -- I don't think the number is identified in the
7 description. So I'm just trying to see if it's -- the
8 description matches with this block. So can you let me
9 know when you're at Paragraph 97?

10 A. I'm at 97.

11 Q. Okay. So do you see there's a sentence that
12 says the HAPI 522 facilitates the issuing of commands
13 from the MIPS core to the voice processor DSP? So
14 that's about in the middle of the paragraph. Do you see
15 that?

16 A. That's correct, yes.

17 Q. Okay. So voice processor DSP, do you believe
18 that's referring to DSP 523?

19 A. That is what the patent discusses that and
20 calls that a 523 is a DSP processor.

21 Q. Understood. So why does the patent call the
22 DSP a voice processor?

23 MR. FLEMING: Objection; scope.

24 THE WITNESS: Again, the same comment I made
25 before. I did not analyze in my declaration 523 and

1 the -- why it calling that DSP voice processor. So is
2 there any specific place in my declaration I go into the
3 details of the DSP voice processor?

4 MS. WOO: Q. Well, why don't we take a look
5 at Figure 4 of Rabenko. And let me know when you're
6 there.

7 A. I'm there.

8 Q. Okay. So what does Figure 4 depict?

9 MR. FLEMING: Objection; scope.

10 THE WITNESS: So Figure 4, as it says in
11 Paragraph 11, is a system block diagram of an exemplary
12 DSP-based voice and data processor. And after that,
13 Paragraph 89, it continues that discussion in terms
14 of -- for 88 and 89 in terms of the voice and data
15 processor architecture.

16 Q. Okay. So what does it mean for a voice and
17 data processor to be DSP based?

18 MR. FLEMING: Objection; scope.

19 THE WITNESS: Again, I want to mention that I
20 have not gone through the analysis of this. So I have
21 to look into that and read the patent and read the
22 entirely [sic] of the patent as well as see what the
23 Figure 4 is to be able to answer that question.

24 MS. WOO: Q. Okay.

25 A. Okay. That means that you would like me to do

1 that?

2 Q. Sure. Yes. You can do that.

3 A. So as I mentioned also before, I have not gone
4 through the analysis of the -- the DSP and the software
5 and the blocks you're discussing here -- you're
6 questioning here. I would need a lot more time to sit
7 down and look at those things, but at a high level, what
8 this is in Paragraph 89 and later on in Paragraph 90 and
9 91 talks about is this an exemplary voice and data
10 processor that may be implemented with the programmable
11 DSP software architecture, and at a high level, this is
12 the best answer I can give you now, unless I spend a lot
13 more time on that.

14 Q. Okay. So in Paragraph 97, when Rabenko refers
15 to the voice processor DSP, would it be fair to say that
16 Rabenko is referring to the voice and data processor?

17 MR. FLEMING: Objection; scope.

18 THE WITNESS: Again, I would need a lot more
19 time to see what they mean by that. I don't understand
20 all the details of it. So I can't answer that until I
21 spend a lot more time. So all I can tell you is what I
22 said before, which is what is a Figure 4 and 5a and b
23 are. This is an exemplary voice and data processor
24 that's implemented in a programmable DSP architecture.

25 MS. WOO: Q. So would it be fair to say,

1 then, in Paragraph 97, when Rabenko refers to the voice
2 processor DSP, it's referring to a part of the voice and
3 data processor?

4 MR. FLEMING: Objection; scope.

5 THE WITNESS: Again, I can't -- I cannot say
6 that off top of my head. Again, I have to sit down and
7 look at that and analyze that, which is going to take a
8 lot more time than today. I need to see what they mean
9 by that and what is their -- what is their meaning by
10 the different paragraphs there related to those figures.

11 MS. WOO: Q. Okay. So you testified earlier
12 also that -- or, again, that Paragraph 13 says that
13 Figure 5b is a block diagram of an exemplary
14 architecture for interfacing BA voice and data processor
15 with a MIPS core processor in a residential gateway.
16 Where is the voice and data processor depicted in
17 Figure 5b?

18 MR. FLEMING: Objection; scope.

19 THE WITNESS: I've already answered you there.
20 I think if you go back and look at the transcript above,
21 I've gone through the details of that. And I showed --
22 I discussed what your answer was above. So --

23 MS. WOO: Q. Oh, I believe earlier I asked
24 about the MIPS core. Now, I'm specifically asking about
25 the voice and data processor. So same question. Where

1 is the voice and data processor depicted in Figure 5b?

2 MR. FLEMING: Objection; scope.

3 THE WITNESS: Again, I have to sit down and do
4 a lot more analysis on that before I can answer you,
5 and, as I said before when I was mentioning about what
6 I've told you up above, is 5b is the exemplary
7 embodiment for the embedded software in the application
8 layer, et cetera. So I did not go through the analysis
9 of that, and my answer is the same. I need a lot more
10 time to be able to answer you.

11 MS. WOO: Q. Okay. So looking at Figure 5b
12 in the legend, do you see the dotted arrow next to it
13 says callback functions. Do you see that?

14 A. Yes, I do.

15 Q. What are callback functions?

16 MR. FLEMING: Objection; scope.

17 THE WITNESS: Again, the same answer as I gave
18 you before. This is a exemplary software that's
19 depicted and is talking about the application layer, et
20 cetera. I -- I have to sit down and look at that a lot
21 more carefully in order to be able to answer that. I
22 have not -- this is outside of the scope of my
23 declaration.

24 MS. WOO: Q. Are you unaware of what
25 callback functions are?

1 A. Our discussions today is specifically on the
2 proceedings -- is specifically on -- it's not a general
3 discussion so that I can give you a general answer. Our
4 discussions today is a legal discussions that is focused
5 on the -- that my declaration is focused on the -- is
6 focused on my declaration and the patent '775 and the
7 prior arts I have in there. So I'm not going to -- I'm
8 aware of what the callback function in general is, but
9 I'm not going to give a general answer as it's a -- we
10 have a focused discussion on specifics of what's in my
11 declaration.

12 Q. Okay.

13 A. Anywhere in my -- in my -- and also I don't
14 believe anywhere in my declaration I talk about
15 callback.

16 Q. Okay. So why don't you look at Paragraph 26
17 of your declaration and let me know when you're there.

18 A. Sure. I'm there.

19 Q. Okay. So do you see at the bottom around of
20 that paragraph, you say "That MTA call time 520
21 implemented in the BDP includes SNMP logic 540, DHCP
22 logic 542, and TFTP logic 546," and you cite Figure 5b.
23 Do you see that?

24 A. Yes, I do.

25 Q. Okay. So I'm just trying to understand the

1 basis of your opinion for that based on Figure 5b. So
2 let's see. So going back to Figure 5b, would you agree
3 that it appears that the block 540, which is where SNMP
4 is and 542 where DHCP logic is and 546 where TFTP logic
5 is that those are drawn separately from MTA call client
6 520. Would you agree?

7 A. So the reason for that paragraph, and I
8 brought that paragraph, is to point out that according
9 to the patent owner's claim construction, Rabenko's
10 voice and data processor still teaches the DOCSIS
11 controller, and the fact that I show that in the -- as I
12 talk about it on Page 20, Paragraph 26, I say "That
13 further still, patent owner and Dr. Russ admit that the
14 '775 patent functional blocks 200 to 212 of Figure 2
15 list several examples of possible DOCSIS functions.

16 One such example is functional block
17 performing SNMP, DHCP, TFTP, and TOD functionalities,
18 which are file transfer protocol, dynamic host
19 configuration, simple network management protocol, et
20 cetera. And Rabenko also describes the same
21 implementations in the voice data processor, which is
22 within the MTA, and MTA is a multimedia terminal
23 adapter, which combines cable modem with a analog
24 telephone enabling voice over IP.

25 So the reason I brought that up is that MTA

1 call client 520 implemented MDP, which is the block
2 shown in Figure 5b, is -- is MTA call client that comes
3 to 520, which is interfacing with MTA provisioning,
4 which are the DHCP, DMS, DNS, TFTP, and the SNMP as
5 shown in the Block 538, which is the exemplary of the
6 operations done in the MTA provisioning. MTA is capital
7 M, capital T, capital A for the videographer. So --

8 Q. Based on Figure 5b, how can you tell that the
9 MTA call client is interfacing with MTA provisioning
10 538?

11 A. There is a -- there is an interface, which is
12 in the software interface be -- between the MTA call
13 client 520 and 538, which is shown by those arrows.

14 Q. And what are those arrows?

15 A. Just reading Figure 5b, it calls them callback
16 functions and direct function calls. These are within
17 the software domain and the software in there, and this
18 is again an exemplary way of doing -- that they're doing
19 it, but I have not analyzed the software, and this is
20 again just one way that they're doing it and what they
21 call that. I have not analyzed what they call it, the
22 callback function or direct function calls.

23 Q. What is the difference between callback
24 functions and direct function calls?

25 A. Again, I'm not going to give you a general

1 answer in there unless I analyze exactly what they say
2 in there. So what I say here is specific to the patent
3 and the -- the claims of the patent I've analyzed. So
4 what they call that in there -- for me to further
5 analyze that, I need access to their software and
6 exemplary what their talking about and a lot more time
7 to analyze that.

8 So I'm not going to give you a general answer
9 until I look at that in details.

10 Q. Okay.

11 A. And I'm not saying that I cannot, but I can.
12 I have done software work before, and I understand DSP
13 very well. And I've taught that, and I've been
14 introduced to that since 1982. However, in this
15 proceeding I need a lot more details to be able to give
16 you a correct, honest, and true answer.

17 Q. How about a general answer? And it's okay if
18 you clarify that that's -- it's not connected with
19 the -- or specific to the -- to the Rabenko reference.
20 Just generally, what's a callback function?

21 A. I don't know. I mean, depends on the --
22 again, you're asking me a hypothetical general question.
23 It depends. It depends on are we talking about
24 functioning software? What kind of a software are we
25 talking about? In C++, C -- are there -- different

1 languages have different ways. Are we talking about
2 MATLAB? Are we talking about assembly language, et
3 cetera, et cetera. So it really depends on that. I --
4 again, in this proceeding, I prefer to have the -- I
5 will answer you the questions whether it's specific, and
6 I have time to analyze them rather than general answers.

7 Q. Okay. Understood. So why don't we look back
8 at Paragraph 97 of Rabenko and let me know when you're
9 there.

10 A. Yes, Counsel. I'm there.

11 Q. Okay. You'll see near the middle, maybe a
12 little above the middle of that paragraph, it says, "A
13 host application programming interface HAPI 522 provides
14 a software messaging interface between the MIPS core 228
15 and the residential gateway and the voice processor
16 DSP." Do you see that?

17 A. Yes, I see that sentence, yes.

18 Q. Okay. So why does there need to be a software
19 messaging interface between the MIPS core 228 and the
20 voice processor DSP?

21 MR. FLEMING: Objection; scope.

22 THE WITNESS: Again, my answer is the same. I
23 need to look at the patent Rabenko in details. I also
24 need to look at what are the underlying assumptions
25 there and the software in there -- I have not analyzed

1 the software in there. So it will take me a lot more
2 time than we have today to be able to do that.

3 MS. WOO: Okay. Let's see. We've been going
4 for almost an hour. Why don't we take a 10-minute break
5 and come back at 5 after the hour. Does that work for
6 everyone?

7 THE WITNESS: Works for me. Thank you.

8 MS. WOO: Okay. Great.

9 (The deposition was in recess from 9:55 to
10 10:06.)

11 MS. WOO: Q. Okay. Let's go back on the
12 record. Okay. So turning back again to Figure 5b, so
13 do you see VOHN interface, block 526? Do you see that?

14 A. Yes, I do.

15 Q. Okay. So what does VH -- VOHN stand for?

16 A. Sorry, John. Did you want to say something?

17 MR. FLEMING: No.

18 THE WITNESS: I don't memorize exactly what
19 the VOHN acronyms are, but it is a protocol that is used
20 in the context of voice over IP for the voice over IP
21 facilitation and voice over IP interface.

22 Q. Okay. So do you see between MTA call client
23 and 520 and VOHN interface, do you see that the arrows
24 are double-sided? Do you see that?

25 A. Yes, I see that.

1 Q. Okay. And then do you see between MTA call
2 client and Boxes 538, 536, 530 of the CS boxes missing a
3 number, but whatever number that is and HAPI Box 522, do
4 you see that those arrows are single-sided? Do you see
5 that?

6 A. That's what they are drawn, yes.

7 Q. Okay. So I was wondering why are the arrows
8 between MTA call client 20 and VOHN interface 526
9 double-sided?

10 MR. FLEMING: Objection; scope.

11 THE WITNESS: Again, the same as before. In
12 order for me to analyze and see what -- why they have
13 single-sided or double-sided, whether it's a specific
14 software reasons or function calls or whatever else is
15 going there, depends on the software architecture, and I
16 have not analyzed that, and I can't answer you sitting
17 here on top of my head unless I sit down and look at the
18 patent in a lot more detail and understand these
19 interfaces a lot more detail and go over them and give
20 you a better answer.

21 MS. WOO: Q. Okay. So do you see the box
22 with CAS in it, and it's missing a number. Do you see
23 that box?

24 A. The CAS box, right?

25 Q. Yes. Do you see that?

1 A. I see that box. Yeah, I see what that is,
2 yes.

3 Q. Okay. So what does CAS stand for?

4 MR. FLEMING: Objection; scope.

5 THE WITNESS: CAS, from what I see also in the
6 patent Paragraph 102, is the channel associated --
7 associated signaling. Channel associated -- associated
8 signaling. Logic 538. That interfaces with a SLIC,
9 S-L-I-C, 109. That's what it says in Paragraph 102.

10 MS. WOO: Q. And what does SLIC stand for?

11 MR. FLEMING: Objection to scope.

12 THE WITNESS: SLIC is a -- exact protocol,
13 what it stands for, I don't memorize it, but it's a
14 protocol that's used for interfacing with the analog
15 parts for phone lines.

16 MS. WOO: Q. Okay. Oh, sorry to jump back
17 and forth. I realize I forgot to ask this, but do you
18 see HPNA MacFi? And that's Block 138. Do you see
19 that? It's right under VOHN 526.

20 A. 526. Oh, okay. Yeah, I see that -- HPNA
21 MAC/PHY, yeah.

22 Q. So what does HPNA MAC/PHY stand for?

23 MR. FLEMING: Objection; scope.

24 THE WITNESS: 138. I believe if it's the same
25 138 in Figure 5 as it is in the Figures 1a and 1b, is

1 the home PNA interface. So --

2 MS. WOO: Q. Okay.

3 A. So that's what that is.

4 Q. You see Block 530? It says HGCP. Do you
5 see -- do you see that block?

6 A. 530. Yes, I see 530.

7 Q. So what does HGCP stand for?

8 MR. FLEMING: Objection; scope.

9 THE WITNESS: I don't know what the H is, but
10 the -- the GCP is the gateway control protocol logic,
11 which is working with NCS for interfacing. So --

12 MS. WOO: Q. Okay. So is it just like HAPI?
13 That extra H might be a typo?

14 A. I don't know that. Sorry.

15 MR. FLEMING: Objection; scope.

16 THE WITNESS: I don't know. Sorry, John. I
17 don't know that. I have to look at that in detail. So
18 I don't know whether it's a mistake or it meant a
19 specific acronym there.

20 MS. WOO: Q. Okay. Understood. Okay. So
21 let's go back to Paragraph 97 of Rabenko and let me know
22 when you're there.

23 A. Sure. I'm there.

24 Q. Okay. So near the bottom half of the
25 paragraph, it says "In addition, the application's layer

1 further includes a VOHN interface 524, which provides a
2 software messaging interface between the MIPS core and
3 the voice processor DSP via the home PNA controller
4 138." Do you see that sentence?

5 A. Sorry. I missed a -- let me see. What
6 paragraph again? 37?

7 Q. 97. Sorry.

8 A. Oh, 97. Oh, okay. Sorry. So --

9 Q. Just let me know when you're there, and I'll
10 read it again.

11 A. That's okay. Let me go to 97. I went to 37
12 for some reason. 97, all right. Sorry. So which
13 sentence is that again?

14 Q. Okay. So it starts with "In addition." It's
15 near the second half. It says "In addition, the
16 application's layer further includes a VOHN interface
17 524, which provides a software messaging interface
18 between the MIPS core and the voice processor DSP via
19 the home PNA controller 138. Do you see that paragraph?

20 A. Yes, I do. Yes.

21 Q. Okay. So in Figure 5b, can you point where
22 VOHN interface is connected to voice processor DSP?

23 MR. FLEMING: Objection; scope.

24 THE WITNESS: First of all, I think on that
25 paragraph either it's a typo or on the figure it's a

1 typo. On the Figure 5b, it has 526 twice, one on the
2 WAN, the wide area network on top, and then one on VOHN.
3 So that's a typo in there, and they have the same
4 number. I assume looking at that -- it's looking --
5 it's talking about the VOHN interface 524, which is the
6 block on the right above 138.

7 So your question was -- let me hear your
8 question. Your question is in Figure 5b. Can you point
9 where the VOHN interface is connected to voice processor
10 DSP? Again, I have to analyze that this is exemplary
11 software diagram. So not -- what is showing is the high
12 level exemplary software diagram. So unless I look at
13 the details of that, I will not be able to accurately
14 tell you how the connection is made.

15 MS. WOO: Q. Okay. Understood. So why
16 don't we look at Figure 2 of Rabenko and let me know
17 when you're there.

18 A. Okay. I'm there.

19 Q. Okay. So do you see Block 266? It says
20 DSP/ISB interface. Do you see that block? It's right
21 under voice and data processor 213, if you're having
22 trouble finding it.

23 A. Yes, I see it now. Yes, the DSP/ISB
24 interface. Yes.

25 Q. All right. Okay. So what is DSP/ISB

1 interface 266?

2 MR. FLEMING: Objection; scope.

3 THE WITNESS: Again, my answer is the same. I
4 have to sit down and analyze what that block is and what
5 it's doing and without making any general assumptions.
6 So it's an interface that is between 213 and a --
7 interfacing the bus that's in the middle.

8 MS. WOO: Q. Okay. So in 426, what does DSP
9 stand for?

10 MR. FLEMING: Objection; scope.

11 THE WITNESS: Same answer again. It is not
12 something I've analyzed. I have to look at it and see
13 exactly what they mean by DSP there besides the -- the
14 fact that stand -- that's it. So that's all I'm going
15 to say.

16 MS. WOO: Q. I'm just trying to understand
17 the acronym. What does DSP stand for?

18 A. Well, as we discussed earlier on, so DSP is
19 digital signaling processor. It's a processor --

20 Q. Okay. And what does ISB stand for in 266?

21 MR. FLEMING: Objection; scope.

22 THE WITNESS: It's -- I don't -- I don't see
23 that -- I can't answer that because I have to sit down
24 and look at it carefully. I don't know what they mean
25 by ISB there.

1 MS. WOO: Q. Would it be fair to say it's
2 internal system bus that's --
3 MR. FLEMING: Objection; scope. I apologize
4 if I cut off your question there.

5 THE WITNESS: It could be or not. I can't say
6 for sure, but it is an interface between the voice and
7 data processor, and as is shown there, the diagram.
8 So --

9 MS. WOO: Q. Okay. And do you see block
10 268? It says DSP/PB interface. Do you see that?

11 A. Yes, I see that. Yes.

12 Q. Okay. So what does PB stand for?

13 MR. FLEMING: Objection; scope.

14 THE WITNESS: Same answer again. Unless I sit
15 down and look at that carefully, it's outside of the
16 scope of my declaration. So I need to look at that and
17 see what is that interface includes between that. So --

18 MS. WOO: Q. Would it be fair to say that PB
19 stands for peripheral bus?

20 MR. FLEMING: Objection; scope.

21 THE WITNESS: I see the connections there, but
22 I cannot say exactly what the PB they have in that
23 block -- they meant by that because they don't -- so I
24 have to look at that in details.

25 MS. WOO: Q. Okay. Okay. So at any time

1 questions.

2 MS. WOO: Thank you.

3 THE WITNESS: Thank you.

4 MR. FLEMING: Thank you, everybody.

5 MS. WOO: All right. Are we off the record?

6 THE REPORTER: So would you be able to give me
7 your orders?

8 MS. WOO: I think we had a next day order, but
9 it's fine if it comes in Monday or Tuesday.

10 THE REPORTER: Mr. Fleming?

11 MR. FLEMING: That's fine. No additional rush
12 or anything.

13 THE REPORTER: Just the Monday or Tuesday?

14 MR. FLEMING: That's fine as well.

15 (The deposition was concluded at 10:45 a.m.)
16
17
18
19
20

21
22
23
24
25

SAYFE KIAEI

1 today either during a break or during your testimony,
2 did you talk to anyone about the IPR or the '775 patent?

3 A. No, I have not.

4 Q. At any time today either during a break or
5 during your testimony, did you send or receive an
6 electronic message to anyone about the IPR or the '775
7 patent?

8 A. No, Counsel, I did not.

9 Q. Okay. Thank you. I have no further
10 questions.

11 A. Thank you.

12 MR. FLEMING: Can we take a -- maybe a
13 10-minute break?

14 MS. WOO: Yeah, of course.

15 MR. FLEMING: So if I understand, maybe just
16 round it out. If it's okay, it's 1:45 eastern. So
17 10 -- I believe it's 10:45 Pacific. Is that --

18 MS. WOO: Yeah. Yeah.

19 MR. FLEMING: It would be 10:40 just as an
20 easy round number for everybody.

21 MS. WOO: Yep, sounds good.

22 MR. FLEMING: Okay. Thank you.

23 (The deposition was in recess from 10:31 to
24 10:45.)

25 MR. FLEMING: We do not have any followup

1 CERTIFICATE

2
3 I, the undersigned, a Certified Shorthand
4 Reporter, State of California, hereby certify that the
5 witness in the foregoing deposition was by me first duly
6 sworn to testify to the truth, the whole truth, and
7 nothing but the truth in the within-entitled cause; that
8 said deposition was taken at the time and place therein
9 stated; that the testimony of the said witness was
10 reported by me, a disinterested person, and was
11 thereafter transcribed under my direction into
12 typewriting; that the foregoing is a full, complete, and
13 true record of said testimony; and that the witness was
14 given an opportunity to read it and, if necessary,
15 correct said deposition and to subscribe the same.

16 I further certify that I am not of counsel or
17 attorney for either or any of the parties in the
18 foregoing deposition and caption named, nor in any way
19 interested in the outcome of the cause named in said
20 caption.

21 Executed this 14th day of April, 2025.

22
23
24
25

LAURA AXELSEN, C.S.R. 6173

ERRATA SHEET FOR THE TRANSCRIPT OF:

Case Name: Comcast vs. Entropic

Dep. Date: 4/11/25

Deponent: Sayfe Kiaei

Pg.	Ln.	Now reads	Should read	Reason
-----	-----	-----------	-------------	--------

SIGNATURE OF DEPONENT

SUBSCRIBED AND SWORN BEFORE ME

THIS _____ DAY OF _____, 2025

(Notary Public)

MY COMMISSION EXPIRES: _____

A			
able 5:17 14:23 17:10,21 21:15 23:2 28:13 32:6 Absolutely 6:9 access 6:5 21:5 accurate 5:18,22 accurately 28:13 acronym 26:19 29:17 acronyms 23:19 adapter 19:23 addition 26:25 27:14,15 additional 32:11 admit 19:13 agree 19:2,6 analog 19:23 25:14 analysis 9:12,18 12:20,22 14:20 15:4 17:4,8 analyze 13:25 16:7 21:1,5,7 22:6 24:12 28:10 29:4 analyzed 13:4 20:19,21 21:3 22:25 24:16 29:12 answer 9:15 14:23 15:12,20 16:22 17:4,9,10,17 17:21 18:3,9 21:1,8 21:16,17 22:5,22 24:16,20 29:3,11,23	30:14 answered 10:12 12:17 16:19 answers 22:6 apologize 30:3 APPEAL 1:2 APPEARANCES 3:1 appeared 2:5 appears 19:3 application 9:21,23 10:17,18,20 10:20,25 11:23 12:8 17:7,19 22:13 application's 26:25 27:16 Approximately 6:16 7:9 April 1:13 2:2 33:21 architecture 8:17,25 10:4 14:15 15:11,24 16:14 24:15 area 28:2 areas 7:3 arrow 17:12 arrows 20:13,14 23:23 24:4 24:7 art 11:21 arts 7:25 18:7 asked 7:11,13 16:23 asking 16:24 21:22	assembly 22:2 associated 25:6,7,7,7 assume 13:2 28:4 assumptions 22:24 29:5 attorney 33:17 aware 18:8 Axelsen 1:21 2:4 5:1 33:23 a.m 2:2 32:15 B b 15:22 BA 16:14 back 10:23 16:20 19:2 22:7 23:5,11,12 25:16 26:21 BANNER 3:5 based 14:17 19:1 20:8 basis 6:7 19:1 BDP 18:21 believe 7:13 9:8 10:12 13:17 16:23 18:14 25:24 31:17 best 15:12 better 24:20 block 8:24 9:25 10:4 11:24 12:1,10 13:4,6,8 14:11 16:13 19:3,16	20:1,5 23:13 25:18 26:4,5 28:6,19,20 29:4 30:9,23 blocks 15:5 19:14 BOARD 1:2 bottom 18:19 26:24 Boulevard 3:17 box 24:3,21,23,24 25:1 boxes 24:2,2 break 23:4 31:1,4,13 brought 19:8,25 bus 29:7 30:2,19 C C 3:6 21:25,25 cable 1:4 19:23 California 3:18 33:4 call 9:22 13:21 18:20 19:5 20:1,2,9,12,21 20:21 21:4 23:22 24:1,8 callback 10:24,24 17:13,15,25 18:8,15 20:15,22,23 21:20 called 2:7 calling 10:23 14:1 calls 11:10 12:7 13:20 20:15,16,22,24 24:14

capital 20:6,7,7	3:16	6:12 8:6	declarations 6:20
caption 33:18,20	Columbia 3:9	core 9:1,3 10:6,7,10 11:3	Dep 34:3
carefully 17:21 29:24 30:15	combined 7:20	11:12 13:13 16:15	depends 21:21,23,23 22:3
CAS 24:22,24 25:3,5	combines 19:23	16:24 22:14,19 27:2	24:15
Case 34:2	Comcast 1:4 34:2	27:18	depict 8:15,23 14:8
cause 33:7,19	come 23:5	correct 11:5,6 13:4,16 21:16	depicted 9:3 10:11 11:18
CCRR 1:22	comes 20:2 32:9	33:15	16:16 17:1,19
central 11:18	commands 13:12	counsel 6:25 8:3 22:10 31:8	Deponent 34:4,17
CERTIFICATE 33:1	comment 13:24	33:16	deposition 1:12 7:2,6,6,10,17,20
Certified 2:4 33:3	COMMISSION 34:23	course 31:14	7:23,24 23:9 31:23
certify 33:4,16	COMMUNICATI... 1:4,7 3:13	CRC 1:22	32:15 33:5,8,15,18
cetera 17:8,20 19:20 22:3,3	complete 33:12	CRR 1:22	describes 19:20
change 6:19	concluded 32:15	CS 24:2	description 9:14,24 10:22 13:7,8
channel 25:6,7	configuration 19:19	CSR 1:21 5:1	descriptions 10:23
chat 6:12 8:7	connected 21:18 27:22 28:9	currently 5:20	detail 24:18,19 26:17
citations 7:3,8	connection 28:14	cut 30:4	details 10:14 14:3 15:20
cite 18:22	connections 30:21	C.S.R 33:23	16:21 21:9,15 22:23
claim 19:9	construction 19:9		28:13 30:24
claims 21:3	context 23:20	D	DHCP 18:21 19:4,17 20:4
clarify 21:18	continues 14:13	data 9:1 10:5 14:12,14,17	DHP 12:18
clean 6:2,12 8:6	control 26:10	15:9,16,23 16:3,14	diagram 8:24 10:1,4,19 11:6,7
client 9:22 19:5 20:1,2,9,13	controller 19:11 27:3,19	16:16,25 17:1 19:10	11:9,15 14:11 16:13
23:22 24:2,8	copies 6:2	19:21 28:21 30:7	28:11,12 30:7
COLLETTE	copy	Date 34:3	difference 20:23
		day 32:8 33:21 34:19	different 11:9,15,16 12:20
		declaration 6:11,17,23 7:2,4,8,14	16:10 21:25 22:1
		7:16,18,19 8:1,1,3	digital 12:13,18,19 29:19
		9:7,10,11,19 12:22	direct
		13:3,25 14:2 17:23	
		18:5,6,11,14,17	
		30:16	

10:24 20:16,22,24	13:20,22 14:1,3,17	exact	16:10 25:25
direction	15:4,11,15,24 16:2	25:12	file
33:11	21:12 22:16,20 27:3	exactly	19:18
discuss	27:18,22 28:10 29:8	21:1 23:18 29:13	filings
9:7 12:22,23	29:13,17,18	30:22	6:2
discussed	DSP-based	EXAMINATION	finding
16:22 29:18	14:12	4:4 5:7	28:22
discusses	DSP/ISB	example	fine
13:19	28:20,23,25	19:16	32:9,11,14
discussing	DSP/PB	examples	first
15:5	30:10	19:15	6:10 7:2,6,13 12:2
discussion	duly	Executed	27:24 33:5
14:13 18:3,10	5:4 33:5	33:21	Fleming
discussions	dynamic	exemplary	3:7 8:4 9:5 10:9
18:1,4,4	19:18	8:17,25 9:20 10:4,16	11:13 12:12,16
disinterested	E	14:11 15:9,23 16:13	13:23 14:9,18 15:17
33:10	earlier	17:6,18 20:5,18	16:4,18 17:2,16
District	11:22 16:11,23 29:18	21:6 28:10,12	22:21 23:17 24:10
3:9	eastern	exhibit	25:4,11,23 26:8,15
DMS	31:16	6:11 8:2,2,6	27:23 29:2,10,21
20:4	easy	EXPIRES	30:3,13,20 31:12,15
DNS	31:20	34:23	31:19,22,25 32:4,10
20:4	either	extra	32:11,14
DOCSIS	12:6 27:25 31:1,4	26:13	focused
19:10,15	33:17	F	18:4,5,6,10
document	electronic	facilitates	follows
6:7	31:6	13:12	5:6
documents	embedded	facilitation	followup
6:5	10:17 17:7	23:21	31:25
doing	embodiment	fact	foregoing
20:18,18,20 29:5	9:20 10:16 17:7	19:11 29:14	33:5,12,18
domain	enabling	fair	forgot
20:17	19:24	6:8 15:15,25 30:1,18	25:17
dotted	entirely	figure	form
17:12	14:22	8:12,14,15,18,20,22	10:9
double-sided	Entropic	8:24 9:4,7,12,15,18	forth
23:24 24:9,13	1:7 3:13 34:2	9:20 10:3,8,11,15	25:17
Dr	ERRATA	10:18 11:4,5,6,8,11	Friday
5:8 19:13	34:1	11:18,24 14:5,8,10	2:2
drawn	ESQ	14:23 15:22 16:13	full
19:5 24:6	3:6,7,16	16:17 17:1,11 18:22	5:11 9:12 33:12
drop	et	19:1,2,14 20:2,8,15	function
6:12	17:8,19 19:19 22:2,3	23:12 25:25 27:21	10:16 18:8 20:16,22
DSP	everybody	27:25 28:1,8,16	20:22,24 21:20
8:18 12:11,13,15,20	31:20 32:4	figures	24:14
12:22 13:4,13,17,18			functional

11:6,7 19:14,16 functionalities 19:17 functioning 21:24 functions 10:23,24,24 11:16 12:21 17:13,15,25 19:15 20:16,24 further 19:13 21:4 27:1,16 31:9 33:16 G gateway 9:2 10:6,16 11:8 16:15 22:15 26:10 GCP 26:10 general 18:2,3,8,9 20:25 21:8 21:17,22 22:6 29:5 generally 21:20 give 15:12 18:3,9 20:25 21:8,15 24:19 32:6 given 33:14 go 9:12 14:2 16:20 17:8 23:11 24:19 26:21 27:11 going 6:12 16:7 18:7,9 19:2 20:25 21:8 23:3 24:15 29:14 good 5:8,10 31:21 Great 6:5,10 23:8 guess 7:18 H H	12:2,8 26:9,13 half 26:24 27:15 HAPI 12:7,9 13:12 22:13 24:3 26:12 happening 11:2 head 16:6 24:17 hear 28:7 HGCP 26:4,7 high 11:14 15:7,11 28:11 home 26:1 27:3,19 honest 21:16 host 9:23 10:25 11:23 19:18 22:13 hour 23:4,5 hours 6:16,18 7:9,12,21 HPNA 25:18,20,22 Hs 12:1 hypothetical 21:22 H-H-A-P-I 12:2 I identified 13:6 implementations 19:21 implemented 10:17 15:10,24 18:21 20:1 includes 9:22 18:21 27:1,16	30:17 INDEX 4:1 influence 5:20 interested 33:19 interface 9:23,24 11:1,23 12:9 20:11,12 22:13,14 22:19 23:13,21,23 24:8 26:1 27:1,2,16 27:17,22 28:5,9,20 28:24 29:1,6 30:6 30:10,17 interfaces 11:1 24:19 25:8 interfacing 8:25 10:5 16:14 20:3 20:9 25:14 26:11 29:7 internal 30:2 introduced 21:14 IP 19:24 23:20,20,21 IPR 6:3,11 31:2,6 IPR2024-00432 1:6 ISB 29:20,25 issuing 13:12 J jfleming@banner... 3:10 Job 1:20 John 3:7 23:16 26:16 jump 25:16	K Kiaei 1:12 2:6 5:3,8,13 32:20 34:4 kind 21:24 know 6:6,7,13,23 8:7,13 10:22 11:21 12:2,25 13:9 14:5 18:17 21:21 22:8 26:9,14 26:16,17,18,21 27:9 28:16 29:24 K-i-a-e-i 5:16 L language 22:2 languages 22:1 Lasker 3:6 8:4 Laura 1:21 2:4 5:1 33:23 layer 9:21 10:1,17,18,20 10:20 17:8,19 26:25 27:16 legal 18:4 legend 10:21 17:12 let's 6:10 19:2 23:3,11 26:21 level 11:14 15:7,11 28:12 lines 25:15 list 19:15 little 22:12 LLC
---	---	---	---

1:4,7 3:13	21:21 29:13,24	9:22 18:20 19:5,22	25:4,11,23 26:8,15
LLP	meaning	19:22,25 20:2,3,6,6	27:23 29:2,10,21
3:15	16:9	20:9,9,12 23:22	30:3,13,20
Ln	means	24:1,8	OFFICE
34:5	13:2 14:25	multimedia	1:1
logic	meant	19:22	Oh
18:21,22,22 19:4,4	26:18 30:23		7:13,15 8:21 16:23
25:8 26:10	memorize	N	25:16,20 27:8,8
look	23:18 25:13	name	okay
6:10,22 7:7 8:12	mention	5:11 34:2	6:13 7:1,5,9 8:5,9,12
12:24 14:4,21 15:7	9:12 14:19	named	8:21,24 9:11,15
16:7,20 17:20 18:16	mentioned	33:18,19	10:2 11:22 12:1,5
21:9 22:7,23,24	11:9,22 15:3	NCS	13:11,17 14:8,16,24
24:17 26:17 28:12	mentioning	26:11	14:25 15:14 16:11
28:16 29:12,24	17:5	near	17:11 18:12,16,19
30:15,16,24	message	22:11 26:24 27:15	18:25 21:10,17 22:7
looking	31:6	necessary	22:11,18 23:3,8,11
8:19 17:11 28:4,4	messaging	33:14	23:12,15,22 24:1,7
lot	11:2 22:14,19 27:2	need	24:21 25:3,16,20
15:6,12,18,21 16:8	27:17	15:6,18 16:8 17:9	26:2,12,20,20,24
17:4,9,20 21:6,15	met	21:5,15 22:18,23,24	27:8,11,14,21 28:15
23:1 24:18,19	8:3	30:16	28:18,19,25 29:8,20
LOWENSTEIN	middle	network	30:9,12,25,25 31:9
3:15	13:14 22:11,12 29:7	19:19 28:2	31:16,22
	MIPS	night	oOo
M	9:1,3 10:5,7,10 11:3	8:11	1:3 2:9 3:21 4:6
3:7 20:7	11:12 13:13 16:15	Nope	open
MacFi	16:24 22:14,19 27:2	5:19	6:14,15 8:7,8,14
25:18	27:18	Notary	operating
MAC/PHY	missed	34:22	8:17
25:21,22	27:5	Notice	operation
making	missing	2:1	11:20
29:5	24:2,22	number	operations
management	mistake	13:6 24:3,3,22 28:4	20:6
19:19	26:18	31:20	opinion
matches	misunderstood	NW	6:8 19:1
13:8	7:19	3:8	opinions
materials	modem		6:19
6:23	19:23	O	opportunity
MATLAB	Monday	oath	33:14
22:2	32:9,13	5:25	order
MDP	Monica	Objection	17:21 24:12 32:8
20:1	3:18	9:5 10:9 11:13 12:12	orders
mean	morning	12:16 13:23 14:9,18	32:7
14:16 15:19 16:8	5:8,10	15:17 16:4,18 17:2	outcome
	MTA	17:16 22:21 24:10	33:19

outside 17:22 30:15	perjury 5:5	11:4 12:14,18,19 13:13,17,20,22 14:1 14:3,12,15,17 15:10 15:15,16,23 16:2,3 16:14,15,16,25 17:1 19:10,21 22:15,20 27:3,18,22 28:9,21 29:19,19 30:7	22:5 31:10 32:1
owner 1:9 2:7 3:13 19:13	person 11:21 33:10		
owner's 19:9	Petitioner 1:5 3:3		
P	Pg 34:5		R
Pacific 31:17	phone 25:15	processors 11:17,19	Rabenko 8:5,9,17 12:25 14:5 15:14,16 16:1 19:20 21:19 22:8,23 26:21 28:16
Page 4:3 19:12	Pico 3:17	program 10:25	Rabenko's 19:9
paragraph 6:22 8:16 9:9,13,19 10:3,14 12:25 13:9 13:14 14:11,13 15:8 15:8,14 16:1,12 18:16,20 19:7,8,12 22:8,12 25:6,9 26:21,25 27:6,19,25	place 13:3 14:2 33:8	programmable 15:10,24	read 9:14 10:3,13,25 14:21,21 27:10 33:14 34:5
paragraphs 16:10	platform 8:18	programming 11:23 12:8 22:13	reading 20:15
part 16:2	please 5:12	protocol 19:18,19 23:19 25:12 25:14 26:10	reads 34:5
participants 2:3	PNA 26:1 27:3,19	protocols 11:15	realize 25:17
parties 33:17	point 9:6 19:8 27:21 28:8	provide 5:18	really 11:5 22:3
parts 25:15	possible 19:15	provides 22:13 27:1,17	reason 5:17 19:7,25 27:12 34:5
patent 1:1,2,9 2:7 3:13 7:25 13:19,21 14:21,22 18:6 19:9,13,14 21:2,3 22:23 24:18 25:6 31:2,7	preclude 5:21	providing 5:21 11:2	reasons 24:14
PB 30:12,18,22	prefer 22:4	provisioning 20:3,6,9	receive 31:5
penalty 5:5	prepare 6:16 7:23	proxy 10:16	recess 23:9 31:23
perform 11:19	preparing 6:17 7:2,6,10,14	Public 34:22	record 5:12,15 23:12 32:5 33:13
performing 19:17	present 2:3	pursuant 2:1	reference 7:25 8:10 21:19
peripheral 30:19	primarily 7:3	put 8:6	referring 10:13 13:18 15:16 16:2
	prior 7:25 18:7	Q	refers 11:4 15:14 16:1
	proceeding 21:15 22:4	question 7:11 8:22 9:15 10:12 14:23 16:25 21:22 28:7,8,8 30:4	relate 11:12
	proceedings 18:2	questioning 6:6 15:6	related 11:20 16:10
	processing 11:19	questions	REMEMBERED
	processor 9:1,1,3 10:5,6,7,11		

2:1 REMOTE 1:12 remotely 2:5 reply 7:2 reported 1:21 33:10 reporter 2:5 5:1 6:13 32:6,10 32:13 33:4 residential 9:2 10:6 11:8 16:15 22:15 review 7:1,5,18,19 8:9 reviewed 6:23 7:24,25 reviewing 8:4 right 7:22 24:24 25:19 27:12 28:6,20,25 32:5 RMR 1:22 round 31:16,20 running 11:17 rush 32:11 Russ 19:13	14:10 16:12 17:13 22:12 25:9 26:4,25 27:15 28:19 30:10 scope 9:5 11:13 12:12,16 13:23 14:9,18 15:17 16:4,18 17:2,16,22 22:21 24:10 25:4,11 25:23 26:8,15 27:23 29:2,10,21 30:3,13 30:16,20 search 9:9 second 6:10 7:4,8 8:1,2 9:18 27:15 see 9:8,11,19 10:7,10 11:11,24,25 12:1,7 13:5,7,11,14 14:22 15:19 16:8 17:12,13 18:19,23 19:2 22:11 22:16,17 23:3,13,13 23:22,23,24,25 24:1 24:4,4,12,21,22,25 25:1,1,5,18,18,20 26:4,5,5,6 27:4,5,19 28:19,20,23 29:12 29:22 30:9,10,11,17 30:21 send 31:5 sentence 12:8 13:11 22:17 27:4,13 separately 19:5 SHEET 34:1 Shorthand 2:4 33:3 show 9:25 10:20 12:21 19:11 showed 16:21	showing 9:21 10:21 28:11 shown 20:2,5,13 30:7 shows 10:21 11:7 sic 14:22 signal 12:13,18,19 signaling 25:7,8 29:19 SIGNATURE 34:17 SIMON 3:6 simple 19:19 single-sided 24:4,13 sit 9:14 15:6 16:6 17:3 17:20 24:17 29:4,23 30:14 sitting 24:16 skilled 11:21 slask34@bannerwi... 3:11 SLIC 25:8,10,12 SNMP 18:21 19:3,17 20:4 software 8:17 9:18,21,23,24 9:25 10:1,1,17,19 10:22,22 11:2,9,11 11:15,18,19 12:20 15:4,11 17:7,18 20:12,17,17,19 21:5 21:12,24,24 22:14 22:18,25 23:1 24:14 24:15 27:2,17 28:11 28:12 softwares	11:16,17 sorry 5:14 8:19,22 23:16 25:16 26:14,16 27:5 27:7,8,12 sounds 31:21 specific 13:3 14:2 21:2,19 22:5 24:13 26:19 specifically 16:24 18:1,2 specifics 18:10 spell 5:11,14 spend 6:17 7:10 15:12,21 stand 23:15 25:3,10,22 26:7 29:9,14,17,20 30:12 stands 12:2,13,18 25:13 30:19 starts 27:14 State 33:4 stated 6:20 33:9 STATES 1:1 Stenographically 1:21 Street 3:8 subscribe 33:15 SUBSCRIBED 34:18 substance 5:21 Suite 3:8 sure
S			
Santa 3:18 Sayfe 1:12 2:6 5:3,13 32:20 34:4 saying 21:11 says 8:16 10:3 12:2 13:12			

5:13,16 9:16 15:2 18:18 26:23 30:6 sworn 33:6 34:18 sworn/affirmed 5:4 system 14:11 30:2 S-a-y-f-e 5:16 S-L-I-C 25:9	testimony 5:18,22 31:1,5 33:9 33:13 text 9:9 TFTP 18:22 19:4,17 20:4 Thank 5:8 23:7 31:9,11,22 32:2,3,4 thereof 2:2 things 11:3 15:7 think 7:11 8:19 11:20 12:6 12:17 13:6 16:20 27:24 32:8 time 5:9 7:13,16 15:6,13 15:19,21 16:8 17:10 18:20 21:6 22:6 23:2 30:25 31:4 33:8 TOD 19:17 today 5:18,22 7:10,23,24 16:8 18:1,4 23:2 31:1,4 told 17:6 top 16:6 24:17 28:2 TRADEMARK 1:1 transcribed 33:11 transcript 7:1,5 16:20 34:1 transfer 19:18 TRIAL 1:2 trouble 28:22	true 21:16 33:13 truth 33:6,6,7 truthful 5:18,21 trying 10:2,7 13:5,7 18:25 29:16 Tuesday 32:9,13 turn 8:5 turning 23:12 twice 28:1 two 12:1 typewriting 33:12 typo 12:5,6 26:13 27:25 28:1,3	11:3,17 VH 23:15 VIDEO 1:12 videoconference 2:3 videographer 20:7 viewing 6:7 VOHN 23:13,15,19,23 24:8 25:19 27:1,16,22 28:2,5,9 voice 8:25 10:5 13:13,17 13:22 14:1,3,12,14 14:16 15:9,15,16,23 16:1,2,14,16,25 17:1 19:10,21,24 22:15,20 23:20,20 23:21 27:3,18,22 28:9,21 30:6 vs 1:6 34:2
T T 20:7 take 14:4 16:7 23:1,4 31:12 taken 33:8 talk 18:14 19:12 31:2 talking 17:19 21:6,23,25 22:1,2 28:5 talks 10:18 15:9 taught 21:13 teaches 19:10 telephone 19:24 tell 15:21 20:8 28:14 terminal 19:22 terms 14:13,14 testified 5:6 16:11 testify 33:6 testifying 5:24		U unaware 17:24 underlying 22:24 undersigned 33:3 understand 5:24 10:2,8 15:19 18:25 21:12 24:18 29:16 31:15 Understood 7:22 12:10 13:21 22:7 26:20 28:15 unit 11:19 UNITED 1:1	W WAN 28:2 want 6:5 14:19 23:16 Washington 3:9 way 20:18,20 33:18 ways 22:1 WEATHERWAX 3:15 went 27:11 we're 8:19 We've 23:3
		V various	

wide 28:2 WITCOFF 3:5 within-entitled 33:7 witness 2:7 9:6 11:14 12:13 12:17 13:24 14:10 14:19 15:18 16:5,19 17:3,17 22:22 23:7 23:18 24:11 25:5,12 25:24 26:9,16 27:24 29:3,11,22 30:5,14 30:21 32:3 33:5,9 33:13 wondering 24:7 WOO 3:16 4:4 5:7,8,14 9:8 10:10 11:22 12:15 12:24 14:4,24 15:25 16:11,23 17:11,24 23:3,8,11 24:21 25:10,16 26:2,12,20 28:15 29:8,16 30:1 30:9,18,25 31:14,18 31:21 32:2,5,8 woo@lowensteinw... 3:19 work 21:12 23:5 working 26:11 Works 23:7 wrong 8:19	Z Zoom 2:3 1 1a 25:25 1b 25:25 1:45 31:16 10 31:17 10-minute 23:4 31:13 10:06 23:10 10:31 31:23 10:40 31:19 10:45 31:17,24 32:15 1005 8:6 1016 3:17 1018 6:11 102 25:6,9 109 25:9 11 1:13 2:2 14:11 1100 3:8 12 8:16 1200 3:8 13 10:3 16:12 13th 3:8	1308335 1:20 138 25:18,24,25 27:4,19 28:6 14th 33:21 1982 21:14 2 2 11:4,5,6 19:14 28:16 20 19:12 24:8 200 19:14 20005 3:9 2025 1:13 2:2 33:21 34:19 212 19:14 213 28:21 29:6 228 11:4 22:14,19 25 6:18 7:12,12,20 26 9:9,13 18:16 19:12 266 28:19 29:1,20 268 30:10 3 30 6:18 7:12,20 37 27:6,11 4 4 6:22 8:18 11:18 14:5 14:8,10,23 15:22	4/11/25 34:3 426 29:8 5 5 4:4 8:14 11:8 23:5 25:25 5a 8:16,20 15:22 5b 8:12,15,20,22,24 9:4 9:7,12,15,18 10:3 10:11,15,18 11:11 11:24 16:13,17 17:1 17:6,11 18:22 19:1 19:2 20:2,8,15 23:12 27:21 28:1,8 520 9:22 18:20 19:6 20:1 20:3,13 23:23 522 9:25 11:23,25 12:9 13:12 22:13 24:3 523 12:11,15,19,22 13:4 13:18,20,25 524 27:1,17 28:5 526 23:13 24:8 25:19,20 28:1 530 24:2 26:4,6,6 536 24:2 538 20:5,10,13 24:2 25:8 540 18:21 19:3 542 18:22 19:4 546 18:22 19:4
Y yeah 12:6 25:1,20,21 31:14,18,18 Yep 31:21			

6			
6173 1:21 5:2 33:23			
7			
775 7:24 18:6 19:14 31:2 31:6			
8			
88 14:14			
89 14:13,14 15:8			
9			
9:02 2:2			
9:55 23:9			
90 15:8			
90405 3:18			
91 15:9			
97 9:19 10:14 12:25 13:9,10 15:14 16:1 22:8 26:21 27:7,8 27:11,12			