

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,

Petitioner,

V.

ENTROPIC COMMUNICATIONS, LLC,

Patent Owner.

Case IPR2024-00446

Patent 8,223,775

REMOTE DEPOSITION OF SAYFE KIAEI, Ph.D.

THURSDAY, NOVEMBER 7, 2024

9:01 A.M. P.S.T.

WITNESS SITUATED IN WASHINGTON, D.C.

REPORTED BY MEGAN M. GROSSMAN-SINCLAIR,
CSR NO. 12586
FROM LOS ANGELES, CA

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1 INDEX OF EXAMINATION
2 WITNESS: SAYFE KIAEI, Ph.D.

4 EXAMINATION PAGE
5 By Ms. Woo 5

8 INSTRUCTIONS NOT TO ANSWER
9 PAGE LINE
10 (None)

13 INFORMATION REQUESTED
14 PAGE LINE
15 (None)

25 * * *

1 INDEX TO EXHIBITS
2 MARKED PAGE
3 (No Exhibits Marked)

25 * * *

1 -- ooOoo --
2 THURSDAY, NOVEMBER 7, 2024; 9:01 A.M. P.S.T.

4 SAYFE KIAEI, Ph.D.,
5 having been first duly sworn,
6 testifies as follows:

8 EXAMINATION
9 BY MS. WOO:

10 Q. Good morning, Dr. Kiaei. Am I
11 pronouncing your name correctly?

12 A. You said it perfectly. Yes, counsel.
13 Thank you.

14 Q. Thank you so much for your time. Would
15 you please spell your full name for the record,
16 please?

17 A. Sure. Sayfe Kiaei.

18 Q. And can you spell that, please?

19 A. S-a-y-f-e, K-i-a-e-i.

20 Q. Is there any reason why you would not
21 be able to provide truthful or accurate testimony
22 today?

23 A. No.

24 Q. Are you currently under the influence
25 of any substance that may preclude you from

1 providing truthful and accurate testimony?

2 A. No.

3 Q. Do you understand that you are
4 testifying under oath?

5 A. Yes, I do.

6 Q. So because everything is being recorded
7 by the court reporter in writing today, it's
8 important that we don't speak over each other. I
9 would appreciate if you wait until I complete my
10 question before answering and I will return the
11 courtesy by waiting for you to complete your
12 answer before I ask my question. Is that fair?

13 A. That is agreeable, yes, fair.

14 Q. Great. Do you have clean copies of the
15 filings of this IPR?

16 A. Yes. I do have a clean copy of the --
17 my declaration and the exhibits printed next to
18 me.

19 Q. Wonderful. In you would like to access
20 any documents during the questioning, I just
21 request that you let me know which document you
22 are reviewing so that I know the basis of your
23 opinion. Is that fair?

24 A. Yes, it is.

25 Q. Okay. Do you have or have you had any

1 Q. Approximately how many hours did you
2 spend preparing for your deposition today?

3 A. For the deposition today, hours, boy, I
4 haven't added my hours, but I worked for a couple
5 of days last week and two, three days this week,
6 so guessing somewhere in the range of over 20, 25
7 hours.

8 Q. And, generally, what did you do to
9 prepare?

10 A. I, of course, read my declaration, read
11 the 775 patent, and the exhibits that I have in my
12 declaration as well as meeting with counsel.

13 Q. Is there any change in your opinions as
14 stated in your declaration?

15 A. No, ma'am.

16 Q. Okay. So I am going to share my
17 screen. Let me see. Do you see my screen?

18 A. I can see your screen, yes.

19 Q. And can you see the 775 patent?

20 A. Yes. I can see it. It's a bit
21 difficult, but I see the 775 patent, yes.

22 Q. Let's see. Is this better if I make it
23 a little larger?

24 A. Yeah, this is fine, yeah.

25 Q. Are you familiar with the 775 patent?

1 current or past association with Comcast?

2 A. No association with Comcast currently
3 or in the past.

4 Q. And approximately how many litigation
5 matters, including IPRs, have you appeared as an
6 expert?

7 A. Over 45 or so. Mostly IPRs.

8 Q. And approximately how many of those
9 matters were you working as an expert for Comcast?

10 A. Besides this one that I am currently
11 working on, I don't recall any previous one. Top
12 of my head I don't recall it unless I look at it.

13 Q. Okay. Have you been deposed before?

14 A. Yes, ma'am.

15 Q. Approximately how many times?

16 A. Over 35 to 40 times.

17 Q. And approximately how many of those
18 were in the context of cable modem architecture?

19 A. I guess architecture is a bit vague,
20 but cable modem related matters I would say -- is
21 that agreeable?

22 Q. Sure.

23 A. Cable modem related matters, probably
24 over five to seven times, just the top of my head,
25 approximately.

1 A. Yes, I have reviewed the 775 patent.

2 Q. When did you first become aware of the
3 775 patent?

4 A. I have to go back and look at when I
5 start working on this, but around the time that
6 the counsel approached me to review that and
7 discuss it with them. So I don't know the exact
8 time. I don't remember it.

9 Q. Approximately, do you remember what
10 year it was?

11 A. That also I don't recall. It would
12 have been not anything earlier than when we
13 discussed it when they retained me. So I do --
14 you know, I have a number of things I am working
15 on, so I don't exactly remember the date.

16 Q. When did you last review the 775
17 patent?

18 A. I skimmed through it one more time
19 yesterday, I believe.

20 Q. So I am going to go to Column 1 around
21 Line 20. Can you see that? Is that big enough?

22 A. Yes, sort of. I guess I am going to
23 see if you are okay either with me opening the
24 hard copy or opening the soft copy of the 775
25 patent or you have exhibit share, you would like

1 to share it with me.

2 Q. Either the hard copy or the soft copy
3 is fine.

4 A. Okay. And if you don't mind, I will
5 open the soft copy which does not have anything
6 written on it and it's clean. It's the 775 patent
7 I am opening as a PDF file.

8 Q. Okay, yes, that's fine.

9 A. Thank you.

10 Q. Again, it's Column 1 starting around
11 Line 20. And let me know when you there.

12 A. I am on Column 1 of 775 patent.

13 Q. Okay. So starting around Line 24, it
14 says that:

15 "These functions need to
16 utilize DOCSIS (data over cable
17 service interface specification)
18 services (link-layer transport
19 and QoS) for wide area network
20 (WAN) access."

21 Do you see that?

22 A. Yes, I do.

23 Q. To your understanding what is DOCSIS?

24 A. Yes, I do understand what is DOCSIS.

25 Q. But to your understanding, what is

1 DOCSIS?

2 A. My understanding, DOCSIS is a -- stands
3 for data over cable service interface
4 specification.

5 Q. And to your understanding, what is
6 DOCSIS used for?

7 A. It is used for cable modem
8 specification, as it says.

9 Q. And to your understanding, why does a
10 cable modem need a specification?

11 A. It is used in the gateway cable modem,
12 as a -- sending data and voice from the central
13 office, for example, of the cable modem downstream
14 to the customer equipment. And then upstream,
15 vice versa. It's the gateway cable modem which is
16 performing the functionality of it.

17 Q. I'm sorry, I think I am a little
18 confused by your last sentence. You said it's the
19 gateway cable modem which is performing the
20 functionality of it. By "it" are you referring to
21 DOCSIS?

22 A. Well, as I said, DOCSIS is the cable
23 modem specification for sending -- as also 775
24 also discusses it, it's for sending data and voice
25 which is interface between the central office to

1 the customer premises.

2 Q. So just let me try to understand. Are
3 you -- would it be fair to say that DOCSIS is the
4 interface between the cable central office and the
5 customer premises?

6 MR. FLEMING: Objection; form.

7 THE WITNESS: DOCSIS itself is a name
8 of the specification, so I would want to make sure
9 that we have that clear. DOCSIS itself is a name
10 of the specification of the DOCSIS protocol.

11 BY MS. WOO:

12 Q. Okay. So when you referred to an
13 interface earlier -- I'm sorry, I am just a little
14 confused. What are you referring to then when you
15 talk about an interface?

16 A. Well, the DOCSIS specification is a
17 communication system which is between the cable
18 modem, for example, central office and the
19 customer premises, which is sending the data and
20 voice downstream to the customer premises and
21 upstream from the customer premises up to the VR,
22 the DOCSIS device, upstream to the cable modem.
23 Up to the cable modem central office.

24 Q. Okay. So would it be fair to say that
25 the DOCSIS protocol is used to send data and voice

1 between a cable central office and a cable modem
2 at the customer premises?

3 A. The correct way I would say that is a
4 DOCSIS is a -- the specification, at least -- is a
5 protocol that is used to send data and voice from
6 the cable central office or the cable headway
7 downstream to the customer premises and upstream
8 from the customer premises via the cable modem
9 upstream to the central office.

10 Q. Okay. And why is a protocol necessary
11 for communication between the cable central office
12 and the customer premises?

13 A. I guess your question is broad. What
14 do you mean by "why"? That could be a number of
15 reasons for using that. Can you be more specific?

16 Q. So to a layperson who is not even
17 familiar with what a protocol is, why -- I suppose
18 what purpose does a protocol serve?

19 MR. FLEMING: Objection; form.

20 THE WITNESS: Again, we are talking
21 about a very general -- would you like me to
22 discuss a very general what is the protocol or are
23 we talking about a specific area of DOCSIS
24 protocol?
25

1 BY MS. WOO:

2 Q. Sure, we can start with a general
3 answer about what a protocol is.

4 A. In general, protocol is a
5 specification, again, we are talking in a very,
6 very general terminology. And I assume that you
7 again, mean by protocol, in terms of protocol for
8 communication systems?

9 Q. Yes.

10 A. So a very general protocol is used in
11 communication systems for the two communication
12 systems -- ability for two communication systems
13 to communicate with each other and that protocol
14 specifies how the communication is done. Again,
15 this is a very general protocol definition.

16 Q. So would it be fair to say that the
17 DOCSIS protocol is what allows the cable headend
18 to communication with the customer premises by
19 specifying how that communication is done?

20 A. No, I do not agree with that statement.
21 That's a very generic statement.

22 Q. Okay. Can you please provide a more
23 accurate statement then?

24 MR. FLEMING: Objection; form.

25 THE WITNESS: Again, since we are

1 generally. I mean, there is a number of -- it
2 really depends on the implementation as the signal
3 descends from the central office to the cable
4 modem at the customer's premises.

5 Q. So you said you could talk about it
6 generally. I think -- yes, please. What
7 generally is the -- some examples of the
8 communication between the cable central office and
9 the cable modem?

10 A. Really, this was not in my scope of my
11 specifically looking at the physical media by
12 which the central office discussed communicating.
13 Central office is communicating with the cable
14 modem, but it can go through different physical
15 medias. Could be optical, could be cable, it
16 could be a number of other components for
17 amplifying, et cetera, et cetera, so it really
18 depends on the many factors, the distance between
19 the central office, and the customer premise, the
20 signal quality, a number of other things that
21 determines that what -- I named at least two or
22 three examples that could be sending -- the
23 physical media by which it can communicate with.

24 Q. Thank you very much. So turning now
25 to -- let's see -- also in Column 1, the sentence

1 talking in general without any specifics of the
2 775 patent or my declaration, in a very generic,
3 general case, DOCSIS is an acronym for a protocol
4 for the -- and procedures for the central office
5 to communicate with the cable modem as a gateway
6 cable modem in the downstream, and then from there
7 to the customer equipment and upstream in the
8 reverse fashion.

9 BY MS. WOO:

10 Q. When the central office is
11 communicating with the cable modem, is there a
12 physical media that it's communicating over?

13 A. Can you be more specific? What do you
14 mean by physical media, please?

15 Q. So, presumably, the central office is
16 communicating with the cable modem via some sort
17 of wire or perhaps wirelessly. How is the central
18 office communicating with the cable modem?

19 A. There is really not a one media or one
20 physical media that they can communicate. I guess
21 you already mentioned wire, but it could be
22 different types of communication between them in
23 terms of the physical media.

24 Q. Can you provide some examples?

25 A. I could talk about this very, very

1 starting around Line 13, 775 says:

2 "The future gateway cable
3 modem (CM) will provide a wide
4 range of data networking and
5 VoIP services as exemplified by
6 the requirements for initiatives
7 such as CableHome and
8 PacketCable."

9 Do you see that?

10 A. Yes, I do.

11 Q. To you understanding what is CableHome?

12 A. CableHome, these are -- CableHome is,
13 again, a specification that is for the
14 communication in that environment within the home.

15 Q. So that sentence that I just read that
16 says "data networking and VoIP services as
17 exemplified by the requirements for initiatives
18 such as CableHome and PacketCable," is it a fair
19 understanding of that sentence to say that the
20 data networking is provided by CableHome?

21 A. It's very general. I do not agree with
22 it.

23 Q. Why not?

24 A. Because -- go ahead, please.

25 Q. Go ahead. I'm sorry. I thought you

1 had finished. Go ahead.

2 A. It's a -- there is a number of data
3 networking going on here so I think we need to be
4 more specific since we are discussing a very
5 specific patent and I am not here to give a
6 statement, general statements, about -- data
7 networking is -- there is a number of data
8 networking going on and so data networking could
9 be part of different equipment and different
10 things we had in there.

11 Q. Okay. So would it be a fair
12 understanding of the sentence starting in
13 Column 1, Line 13, that some data networking, at
14 least, is provided by CableHome?

15 MR. FLEMING: Objection; form.

16 THE WITNESS: In that paragraph what
17 it's discussing is that -- is -- when we are
18 talking about -- starting in Column 1, Line 13 to
19 20, it's discussing that providing data networking
20 and voiceover IP services within the CableHome
21 environment or within the cable for home
22 specifications. But, again, it's a very general
23 statement there is -- that those few lines are
24 discussing.
25

1 Q. Okay. So would it be fair to say that
2 the paragraph starting in Column 1, Line 13, says
3 that data networking in the future gateway cable
4 modem uses CableHome?

5 A. Not necessarily, I do not agree with
6 that either. There are many other things that use
7 CableHome.

8 Q. Can you --

9 A. And, also, data networking can use
10 different environments by which it datatas.

11 Q. Can you point me to where in that
12 specific paragraph that might indicate that many
13 other things use CableHome or that data networking
14 uses different environments?

15 A. Well, we are talking about the
16 specification of the patent and you'd like me to
17 give a generic statement in the first paragraph,
18 which is just on the background in invention. And
19 as that paragraph says is that data networking and
20 voiceover IP services as exemplified. So it's
21 talking about examples of such.

22 So this is examples of data networking
23 and voiceover IP services in a gateway cable
24 modem. So it's a very general paragraph and
25 very -- it is discussing that as an exemplified --

1 BY MS. WOO:

2 Q. Just so I understand, is it your
3 understanding of that paragraph starting at
4 Column 1, Line 13 through 19, that CableHome
5 provides data networking and voiceover IP
6 services?

7 MR. FLEMING: Objection; form.

8 THE WITNESS: Again, that's a general
9 statement and I would not agree with that.
10 BY MS. WOO:

11 Q. What part do you not agree with?

12 A. Well, what you said was that CableHome
13 provides data networking and voiceover IP
14 services. CableHome is a specification. It's not
15 a personal -- it's not an equipment. It's a name
16 for a specification.

17 And, No. 2, we have to be more specific
18 in terms of what environment we are talking about,
19 what data, and which portion of the environment
20 and what is a data networking in that environment
21 and voiceover IP services. Your question is very
22 general saying that CableHome provides data
23 networking and voiceover IP services.

24 There are a lot of parts to this and I
25 would not agree with that general statement.

1 as an example in that paragraph.

2 Q. So I think earlier you mentioned
3 CableHome can be used for data networking in
4 voiceover IP services. Is that a correct
5 statement?

6 A. I would not agree with that also.

7 Q. Why not?

8 A. I said already before that you are
9 equating CableHome to be used for data networking
10 and voiceover IP services. CableHome is a name of
11 the specification, is a document for -- and a
12 protocol or specification. So that doesn't
13 provide data networking or voiceover IP services.

14 Q. So help me accurately state -- I am
15 just looking for the correct verb for the
16 relationship between data networking and
17 CableHome. So it's not CableHome is used for data
18 networking or CableHome provides networking. Is
19 it that the data networking is in the CableHome
20 environment? I just want to make sure I am
21 stating things correctly.

22 MR. FLEMING: Objection; form.

23 THE WITNESS: Again, with your last
24 statement, I don't agree with that. CableHome is
25 a specification of a protocol for interfacing with

1 a customer equipment so it's simply a protocol.
2 CableHome is the specification and the protocol
3 used there.

4 BY MS. WOO:

5 Q. When you say "there," do you mean
6 interfacing with a customer equipment?

7 A. Is that a -- sorry, is that your
8 complete question?

9 Q. Yes, I am just trying to understand
10 your last sentence.

11 A. Oh, what I said in the last sentence is
12 cable modem is a specification or a protocol that
13 an equipment which is used for interfacing with a
14 customer equipment and the media that is providing
15 that -- to the customer services -- to the
16 customer equipment.

17 Q. So you will see in that same sentence
18 starting in Column 1, Line 13, that in addition to
19 CableHome, the 775 mentions PacketCable. What is
20 PacketCable?

21 A. Later on in the same patent, 775, and
22 also I use it in my declaration as well,
23 PacketCable is also a specification. So, for
24 example, for voiceover IP and data, et cetera.

25 Q. Okay. Turning to Column 2 at the line

1 A. Sure. There I am.

2 Q. Okay. So do you see where it says --
3 and this is around Line 26, it says:

4 "Controller 116 implements
5 the following DOCSIS (blocks
6 200-212) functions."

7 Do you see that?

8 A. Yes, I do.

9 Q. Okay. And then do you see that it
10 lists several examples?

11 A. Yes, I do.

12 Q. Okay. So the first example listed is
13 MAC management message (MMM) processing. To your
14 understanding what MAC management message
15 processing?

16 MR. FLEMING: Objection; form.

17 THE WITNESS: It's a set of MAC which
18 is a media access layer in the communication for
19 managing messages in a very high level.

20 BY MS. WOO:

21 Q. And, to your understanding, how does
22 MAC management message processing relate to
23 DOCSIS?

24 A. To be clear, MMM is one of the
25 operations that the MAC media access control for

1 starting -- or the sentence starting around
2 Line 21, it says:

3 "Data and home networking
4 functionality is provided by a
5 data networking engine, and
6 DOCSIS and voiceover IP
7 functionality is provided by a
8 cable modem engine."

9 Do you see that?

10 A. Yes, I do.

11 Q. Okay. To your understanding, what is
12 DOCSIS functionality?

13 MR. FLEMING: Objection; form.

14 THE WITNESS: I do discuss this in my
15 declaration as well, so if you don't mind, we can
16 also put that as an exhibit so I can give you an
17 accurate and honest answer. I don't memorize all
18 of these different terminologies since we are
19 going now into specific claim languages and so on.
20 So --

21 BY MS. WOO:

22 Q. Why don't we -- instead of looking at
23 your declaration, why don't we go to Column 3 of
24 the 775. So it is the paragraph starting around
25 Line 21. Let me know when you are there.

1 the -- that is specified by the DOCSIS protocol or
2 DOCSIS specification.

3 Q. So in -- I'm sorry.

4 A. Among many other things as well. No
5 problem. So among many other things.

6 Q. So after the MAC management message
7 processing, do you see in Column 3 starting around
8 Line 30, another example that the 775 patent lists
9 is IGMP, MAC address learning, classification,
10 U.S. protocol filtering. So not to overwhelm you,
11 we can start with the first one. To your
12 understanding, what is IGMP?

13 A. These are all various different
14 acronyms for the functionalities that are
15 specified in the DOCSIS -- protocol DOCSIS
16 specification. So I forgot what IGMP exactly what
17 the acronym stands for. So I don't memorize it.
18 But these are all different operations that are
19 specified in the DOCSIS protocol.

20 Q. Understood. So you see then next, the
21 775 patent says in Column 3, line 32:

22 "Functional block 204 carries
23 out cable modem IP/UDP
24 functions..."

25 To your understanding, what are cable

1 modem IP/UDP functions?

2 A. Again, I don't have the exact UDP
3 memorization of what it is. But these are, again,
4 operations that are carried out in the DOCSIS
5 protocol -- DOCSIS protocol. That's it. I am
6 done.

7 Q. And then same question for functional
8 block 206. So that's looking at Column 3 starting
9 around Line 33. So it says:

10 "Functional block 206 carries
11 out SNMP, DHCP, TFTP and TOD
12 functionality..."

13 To your understanding what are those
14 functionalities?

15 A. Those are also acronyms or names for
16 another set of operations that are in the DOCSIS
17 protocol. It's really -- when you open the DOCSIS
18 protocol, for example, or specification, there is
19 several pages of all these acronyms of what they
20 are as well as, depending on the -- which DOCSIS
21 version we are talking about, some of these are
22 specified in there as well. So I don't know all
23 the operations of the DOCSIS. Various small
24 subsets.

25 Q. Okay. And then carrying on with that

1 discussing some of those packet forms for the
2 minimization of latency and jitter on the voice
3 packets, et cetera.

4 Q. So you mentioned DOCSIS when I asked
5 about PacketCable functionality. How does DOCSIS
6 relate to PacketCable?

7 A. DOCSIS is a specification. And DOCSIS
8 data and voice, the data and voice -- the data and
9 voice is sent from the upstream -- from the cable
10 head or cable central office downstream to the
11 cable modem in a packet form, which goes via the
12 DOCSIS modem and then that's what the packet form
13 is.

14 Q. I'm sorry, I'm not sure I quite
15 understand. When you say that's what the packet
16 form is, are you then referring to PacketCable?

17 A. Oh, I misunderstood your question. So
18 is your question about because of the dash between
19 packet and cable? So are we talking about
20 PacketCable as a -- are we talking about
21 PacketCable as a specification that we discussed
22 earlier? Correct?

23 Q. Yes, I believe so. I believe that dash
24 is just because the line breaks at the end of the
25 column.

1 same sentence now looking at Column 3, Line 34, it
2 says:

3 "Functional block 208 is
4 responsible for cable modem
5 provisioning."

6 To your understanding, what is cable
7 modem provisioning?

8 A. Sure, let me look at 208. This is,
9 again, part of the cable modem operations that is
10 in the DOCSIS -- that is shown here that is doing
11 some of the DOCSIS operations.

12 Q. Okay. And then the next paragraph in
13 Column 3, so that starts on Line 39, it says:

14 "In addition, in order to
15 minimize latency and jitter of
16 voice packets, controller 116
17 also implements all PacketCable
18 functionality."

19 To your understanding, what is
20 PacketCable functionality?

21 A. I have also discussed this in my
22 declaration. With packet, it doesn't really go
23 into details of PacketCable functionality is, but,
24 in general, in DOCSIS, the data is -- the data and
25 voice is sent via a packet form and it's

1 A. Yes, I read that as a two separate
2 words. PacketCable, as it's outlined later in
3 that same paragraph --

4 Q. Yes, it's confusing because it appears
5 twice, yes.

6 A. Yeah, that's discussing the -- within
7 the PacketCable specification there are
8 requirements for certain things in terms of
9 latency and jitter and so on. But, again, this is
10 a very generic statement because it's discussing
11 at a high level. It's not talking about which
12 PacketCable versions it is and many other aspects
13 of the requirements and so forth. So it's just,
14 in general, saying that -- a sentence saying that
15 for voice packets, minimizing latency and jitter,
16 which is discussed in a PacketCable, the
17 specification, but it doesn't go into any details
18 in there.

19 Q. So just to make sure you were not
20 confused at that point, I had asked about
21 PacketCable functionality and in your answer you
22 mentioned DOCSIS. And I just wanted to know how
23 PacketCable and DOCSIS are related.

24 So, now, based on your understanding
25 that it's the PacketCable protocol they are

1 talking about, is PacketCable and DOCSIS, are they
2 related?

3 A. PacketCable has its own specification
4 on what they are, what is the relationship within
5 the PacketCable and DOCSIS in terms of the
6 requirements in the PacketCable, in terms of
7 voiceover IP, and how it relates in DOCSIS and is
8 used in DOCSIS.

9 Q. Understood. Okay. So looking at
10 line -- Column 3, Line 42, it says:

11 "These PacketCable functions
12 include..."

13 And then it lists some examples. First
14 one is provisioning. To your understanding, what
15 is PacketCable provisioning?

16 A. Without going into the details -- I
17 would like to see the PacketCable specification.
18 But without going into the details of it, it's
19 talking about the PacketCable requirements in
20 terms of the operations that the PacketCable
21 specifies in that. It's discussing the
22 provisioning of the -- provisioning operations
23 within the PacketCable. As a specification.

24 Q. And then next in 775 starting in
25 Column 3, Line 43, the next example is security

1 and signalling. To your understanding, what is
2 security and signalling?

3 A. Again, not having the PacketCable
4 memorized and the PacketCable in front of me, it's
5 discussing in general a security and signalling
6 operations and specifications within the
7 PacketCable.

8 Q. And then at the next example that the
9 775 lists around Line 44 is voice DSP driver. To
10 your understanding, what is voice DSP driver?

11 A. Again, not having the PacketCable
12 specification in front of me, and how in here
13 specifically you are talking about the block 224,
14 which is in Figure 2, it doesn't go into a lot of
15 details what is that voice DSP driver. So it is
16 within the voice DSP operations that is performed
17 in the block 224.

18 Q. And what is voice DSP?

19 A. A voice is a voice. It's an audio
20 voice. DSP, in general, is digital signal
21 processing. And it's a voice digital signal
22 processing.

23 Q. Okay. And then back a little bit to
24 Line 44 it says:

25 "224 (streamlined IP/UDP/RTP

1 with classification; PHS, IP/LLC
2 filtering."

3 To your understanding, what is block
4 224?

5 A. Now, before I answer that on the voice
6 DSP, in Figure 1 also it shows the voice DSP block
7 119 which is outside of the cable modem engine
8 that the cable modem engine is interfacing with.

9 Would you like me to answer your last
10 question now?

11 Q. Yes, please.

12 A. Okay. I just wanted to clarify. I
13 notice that voice DSP was also used in -- was
14 clearly shown in that figure out of the cable
15 modem.

16 These are, again, various different --
17 these are acronyms for various different functions
18 that are in the block 228. I don't have these
19 acronyms memorized. It's all simply saying that
20 these operations are provided within the block
21 228.

22 Q. Just to clarify, I asked about block
23 224. So that one is --

24 A. Oh.

25 Q. Yeah.

1 A. I apologize, I jumped ahead to your
2 next question.

3 Q. Yes.

4 A. The next sentence. In here we are
5 talking about -- again, these are the various
6 acronyms for different operations which are done
7 within the block 226.

8 Q. Again, I think you jumped ahead again.
9 It's 224 that I was asking about.

10 A. Sorry, yeah, 224. That's what I meant.
11 224 which is talking about -- that's correct, yes.
12 224 is talking about the streamlined IP/UDP/RTP
13 with clarification, et cetera. Correct?

14 Q. Ye,s.

15 A. These are also various different
16 blocks -- various different operations, I should
17 say, which are in these -- which are performed in
18 the 224 that is shown in Figure 2.

19 Q. And to your understanding what are
20 these various operations?

21 A. These are, again, some sort of certain
22 operations that are within the PacketCable, but I
23 don't have the PacketCable specification in front
24 of me. Neither I know which exact protocol we are
25 talking about, which version. But just looking at

1 what that sentence says, it says that these are
2 within the PacketCable functionalities or
3 PacketCable operations which are performing some
4 of these in that block 224.

5 Q. And I know we jumped ahead earlier, but
6 just to repeat, you will see that in Line 46 it
7 says 226 (voice MAC driver). To your
8 understanding, what is voice MAC driver?

9 A. It relates to the voice that media
10 access control. It doesn't go into details of it
11 besides just specifying it here, discussing it
12 here. And it shows it in Figure 2. That's really
13 all I can say right now without having
14 specification in front of me. So...

15 Q. When you say the specification, are you
16 referring to the PacketCable specification?

17 A. Not only just that, but also the packet
18 doesn't discuss the details of what the
19 different -- it just names it. It just puts in
20 the names of these things. So what I mean by that
21 is either need to know the -- you know, which
22 specification we are discussing and what are the
23 versions or the specification of the patent has
24 more details in it. I don't believe I have seen
25 it anywhere else but here.

1 Q. Okay. And then moving on in Column 3
2 around Line 47 it says:

3 "MGCP and RTCP functions are
4 provided by functional block
5 228."

6 To your understanding, what are MGCP
7 and RTCP functions?

8 A. Again, I don't have the cable -- if it
9 is discussing -- sorry -- the PacketCable or
10 discussing any other details in this, I don't have
11 those memorized what those acronyms are. These
12 are, again, certain operations which shows they
13 are done in block 228. So all of these different
14 things you discussed in the paragraph starting in
15 39 to 47 or so, these are the different things
16 that is discussing in that paragraph. And that's
17 it. That's all I have to say.

18 MS. WOO: Okay. So we have been going
19 for over an hour now. Why don't we take a break.
20 How does ten minutes sound.

21 THE WITNESS: Ten minutes is good for
22 me. Thank you.

23 MS. WOO: We will be back at 10:16
24 Pacific time.
25

1 (Whereupon, a recess was held from
2 10:06 a.m. to 10:17 a.m.)

3 BY MS. WOO:

4 Q. So I am going to share my screen again.
5 Looking still at any 775 patent now at Figure 2.
6 Do you see that?

7 A. Yes, ma'am, I see it.

8 Q. Okay. How many circuits do you see?

9 MR. FLEMING: Objection to form.

10 THE WITNESS: In Figure 2?

11 MS. WOO: Correct.

12 THE WITNESS: I cannot make an
13 assumption about circuits here. What I see is
14 Figure 2, As Figure 2 states, it is a
15 functional -- let me see exactly what he calls it
16 in Figure 2. In Column 2, Line 44:

17 "Figure 2 is a functional
18 block diagram implementing the
19 cable modem architecture of
20 Figure 1."

21 So it doesn't discuss the
22 implementation. It's just a functional block
23 diagram. It does not show any details about the
24 circuits there.
25

1 BY MS. WOO:

2 Q. Okay. So I am going to turn to
3 Exhibit 1005 Rabenko.

4 A. Yes, I do. And are you okay if I also
5 open PDF for Rabenko?

6 Q. Yes, that's fine.

7 A. Thank you, ma'am.

8 Q. Are you familiar with Rabenko?

9 A. Yes. I use Rabenko as a prior art.

10 Q. And when did you first become aware of
11 Rabenko?

12 A. Again, at the beginning of this -- when
13 they hired me I reviewed that then. That was the
14 first time I saw it.

15 Q. And when did you last review Rabenko?

16 A. Also yesterday. I skimmed through it
17 yesterday.

18 Q. Okay. So can you see Figure 2 of
19 Rabenko?

20 A. Yes, ma'am.

21 Q. How many circuits do you see?

22 A. Again, the answer is there is no
23 details about the physical specifications of the
24 various different blocks. What Figure 2 says is
25 that it's a system-like diagram of an exemplary

1 residential gateway. Exemplary residential
2 gateway. It's simply showing the block diagram of
3 various components in there. Or various
4 operations or blocks within it.

5 Q. To your understanding, what is a
6 circuit?

7 A. Since your question is very broad, I am
8 going to answer it in a very, very broad
9 terminology. Is that okay? Or do you have any
10 specific question on circuit you would like me to
11 discuss?

12 Q. I think you can start with the broad
13 terminology.

14 A. Well, circuit can be in many different
15 forms. It could be passive components such as
16 resistors and inductors and capacitors. It could
17 be an active component such as transistors, either
18 at the lowest level of the single transistors or
19 the single resistors and capacitors, or at a
20 higher level, which could be a circuit for a
21 processor that would include the hardware for the
22 processor as well as the software that is
23 operating on that processor or a controller or
24 various different combination of hardware and
25 software together.

1 Q. Just so I understand your last example,
2 is it fair to say that a circuit at this higher
3 level could be hardware and software together?

4 A. I would label it as a circuit which is
5 a hardware that has software also together
6 performing -- yeah, it's a combination of hardware
7 and possibly software together, yes.

8 Q. So looking at Rabenko Figure 2, do you
9 see the enhanced DOCSIS 1.1 MAC? And that is
10 block 212. Do you see that?

11 A. Yes, I see that, yes. That's the one
12 that says enhanced DOCSIS 1.1 MAC; correct?

13 Q. Yes.

14 A. Yes, I see that.

15 Q. So is that enhanced DOCSIS 1.1 MAC
16 itself a circuit?

17 A. Not necessarily. I mean a -- sorry, is
18 that a circuit. My answer is it could be a -- a
19 circuit combining hardware and software within
20 that or it could be purely a software.

21 Q. Let me try to understand. When you
22 said it could be purely software, do you mean the
23 enhanced DOCSIS 1.1 MAC which is block 212 may be
24 purely software?

25 A. As I described earlier, also Rabenko

1 discusses it. As I said earlier, that's a system
2 block diagram of exemplary in Figure 2,
3 residential gateway, which has the -- which has
4 the block 202 in it.

5 So that's an exemplary so that a person
6 skilled in the art would know that -- and, also,
7 as Rabenko also discusses it, it could be a
8 circuit with a hardware and software possibly in
9 there. It could be a software or a combination of
10 a hardware and a software. So it depends on the
11 implementation and how that is implemented by the
12 person skilled in the art.

13 Q. So Rabenko at Paragraph 9 says that:

14 "Figure 2 is a system block
15 diagram of an exemplary
16 residential gateway."

17 What is a system block diagram?

18 A. Paragraph 9, you said?

19 Q. Yes. I am also sharing my screen with
20 you.

21 A. Thank you. I have many different
22 things opened here.

23 Q. It's a long way to scroll.

24 A. It's a system block diagram. So a
25 person skilled in the art would understand that

1 system block diagram, of an exemplary residential
2 gateway, is simply a system block diagram which is
3 showing the various different blocks in there.
4 And not necessarily a system block diagram is
5 showing the details of a circuit that is
6 implemented. It could be hardware, it could be
7 hardware and software, it could be a combination
8 of hardware and software and algorithms,
9 et cetera.

10 Q. So would it be fair to say that a
11 system block diagram may represent hardware,
12 software, and/or algorithms?

13 MR. FLEMING: Objection; form.

14 THE WITNESS: No, I brought up
15 hardware, software, and algorithms as only an
16 example of that. It could be other forms as well.
17 It could be a variety of different forms. And I
18 think that, as also in the Paragraph 268 of
19 Rabenko clearly discusses it, is that the various
20 illustrative components, blocks, modules,
21 circuits, and steps and have been described
22 generally in terms of their functionality.

23 Whether the function is implemented as
24 hardware or software depends on the particular
25 application and design constraints imposed by the

overall system. And the skilled artisan recognizes the interchangeability of hardware and software under these circumstances and how best to implement a described functionality for each particular application.

BY MS. WOO:

Q. So, in your opinion, is it possible that the system block diagram seen in Figure 2 could be hardware or software or some combination of both?

A. Since we are discussing various specific blocks in here, 212, in terms of a DOCSIS 1.1 MAC, et cetera, that depends on the implementation, but given that we are talking about a DOCSIS specification, which is an evolving specification as it's being specified and as it's being passed by the -- passed meaning approved by the specification, the person that's skilled in the art would know that upgradeability is critical because of the fact that's a protocol that is evolving.

So a person that's skilled in the art will want to have some upgradeability in terms of a combination of a hardware and a software in there, which could include a variety of different

MR. FLEMING: Objection; form.

THE WITNESS: Well, are we talking about Figure 2 or are we talking about block 212?

MS. WOO: We are talking about Figure 2.

THE WITNESS: My answer is the same. It could be a combination of processor, the software, it could be a software or a hardware combined with software. It depends on the implementation. And a person skilled in the art would know what the requirements are and upgrading requirements and the implementation and the cost and so forth. So my answer does not change.

BY MS. WOO:

Q. Okay. So looking still at Figure 2, looking back at the enhanced DOCSIS 1.1 MAC which is block 2.2, so you can see that it is connected with internal system bus to, let's see, the home PNA controller. And that's block 318. And that, for your ease of locating it, is the handwritten component. Do you see that they are connected by internal system bus?

A. I would say that the correct way of saying that would be that the internal bus that is the bus which is shown in the Figure 2, I believe

things as is specified and as Rabenko discusses it in Paragraph 248. So it could be a processor of the software or a controller with the software, or a combination of the different possibilities, as I discussed earlier and also mentioned it in the Paragraph 268 of Rabenko.

Q. Okay. Just so I understand, as a layperson looking at Figure 2, it looked to me like it was purely hardware, but would it be fair to say that Figure 2 may represent both hardware and software?

MR. FLEMING: Objection; form.

THE WITNESS: I believe I answered that question in a previous discussion we had. I think if you go back a few lines you can see that I discuss it in details. So I think I have already answered your question.

BY MS. WOO:

Q. I think you answered in the context of paragraph, is it, 268? I just -- I don't think Paragraph 268 mentions specifically Figure 2, so I just want to make clear Figure 2, it's possible that it -- because looking at it, it looks like hardware. Is it in your opinion Figure 2 can represent both hardware and software?

it's -- I can't see this very well, but is it 218?

Q. I believe it is, yes.

A. Because there is a little scribble next to it too. So that bus is -- it's connected to the MAC enhanced DOCSIS 1.1 MAC block. It is also connected to the other various blocks including home PNA controller. But, again, this figure is a functional block diagram of it. So there is a connection between the various blocks and the bus, internal bus 218.

Q. Okay. And do you see there is internal bus 218? Both the enhanced DOCSIS 1.1 MAC, 212, and the home PNA controller 138 are connected to this internal system bus 218? Do you see that?

A. The way that the person that's skilled in the art would look at it and interpret this is that there is a bus within the Figure 2 and various different blocks are connected to that bus. So enhanced DOCSIS 1.1 is connected to the internal bus. So are various different things are connected to that bus and based on -- that's it. That's all I am going to say.

Q. Okay. And do you see that home PNA controller 138 is also connected to that bus?

A. Yes. That is also connected to the

1 bus. But that doesn't say anything else beyond
2 that. It only says is that that internal bus is
3 connected to the home PNA. That internal bus is
4 connected to DMA, direct memory access. That
5 internal bus is connected to other things. And
6 connecting to the bus and having other components
7 connect to the same bus doesn't necessarily mean
8 that there is a routing of data or anything else
9 between the components which are routed to the
10 bus. All this says is that they are connected to
11 the bus. That's all it says.

12 Q. Okay. Because enhanced DOCSIS 1.1 MAC
13 212 is connected to the bus and home PNA
14 controller 138 is connected to that same bus,
15 could they be considered part of the same circuit?

16 A. I would disagree with that statement.

17 Q. Why do you disagree?

18 A. Because all this is is a functional
19 block diagram showing various different
20 components. So there are multiple different
21 circuits in this block diagram or system block
22 diagram which are not the same.

23 Q. When you say "which are not the same,"
24 you are saying the multiple different circuits are
25 not the same?

1 A. I am answering your question that the
2 block 138 of the home PNA controller is not the
3 same circuit as the block 212 enhanced DOCSIS MAC
4 212. It could be or it could not be. It -- that
5 block diagram doesn't tell me about that and those
6 are not same circuits. I would say that the
7 answer is those are not the same circuits.

8 Q. And why are they not the same circuits?

9 A. Because if you look at also Figure 1b,
10 in Figure 1b, which is block diagram of exemplary
11 in-home telecommunications signal Figure 1 is also
12 showing those blocks, which is 134, that's a
13 DOCSIS MAC/PHY as a separate function with the
14 home PNA 138 and separate than 142 and separate
15 than 136. That's one of the reasons.

16 Q. Okay.

17 A. And beyond that there are other reasons
18 that Rabenko also discusses it in the
19 specification.

20 Q. Okay. Give me one minute.

21 A. I would like to actually bring up your
22 attention as well to Paragraph 44 and 45 of the
23 Rabenko as well which is discussing the other
24 reasons I discussed as well besides just the
25 Figure 1b, which is discussing the Figure 1b. And

1 it talks about the -- in Paragraph 45, for
2 example, it talks about the downstream direction.
3 The MAC/PHY 134 determines whether the packet load
4 is voice or data. If the packet load is data,
5 then the DOCSIS MAC/PHY 134, which is the block
6 134, routes the packets directly to the home PNA
7 controller 138. And then it goes on to say that
8 the home PNA 138 then translates the data packet
9 to home PNA packet and transmits the home PNA
10 packet to the media terminal adapter 140 over the
11 home PNA LAN 110.

12 So these are other reasons that a
13 person skilled in the art would understand that
14 these blocks are different circuits. Meaning the
15 block for the Figure 1b 138 is separate than the
16 DOCSIS MAC/PHY 134 of the blocks you mentioned in
17 Figure 2.

18 Q. I see. So -- let me see if I
19 understand. You are saying that in Paragraph 45
20 Rabenko teaches that the DOCSIS MAC/PHY is
21 performing one function and that's determining
22 whether the packet load is data. And then the
23 home PNA controller is performing another
24 function, and that includes translating the data
25 packet to home PNA packet and transmitting the

1 home PNA packet to a media terminal adapter. And
2 because those blocks are performing different
3 functions, those are different circuits. Is that
4 a fair characterization of what you are saying?

5 MR. FLEMING: Objection; form.

6 THE WITNESS: As I -- as shown in
7 Figure 1b, the -- and, also, I discussed it also
8 in my declaration as well as in what the Rabenko
9 discusses it, going back to the same Paragraph 45,
10 in combination of 43, 44, 45, and I already
11 answered, the DOCSIS MAC/PHY 134 is a separate
12 circuit than a home PNA controller 138 which is
13 shown in Figure 1b.

14 And in reading those two or three
15 paragraphs, a person skilled in the art would know
16 that both by the figures that are shown in Rabenko
17 as well as reading the specification, those are
18 separate circuits.

19 BY MS. WOO:

20 Q. Looking at Paragraph 45 Rabenko also
21 mentions a proxy gateway. So I am still sharing
22 my screen. I'm not sure if you can see I have
23 highlighted two sentences. Can you see that
24 selection?

25 A. Yes, I see. That's 45, yeah, later on,

1 yes.

2 Q. Yes. Just because there are no line
3 numbers here. Rabenko also mentions a proxy
4 gateway.

5 "The proxy gateway 142
6 further determines whether the
7 packet is destined for home PNA
8 LAN 110 or the POTS telephone
9 108."

10 Is that proxy gateway in a separate
11 circuit from the DOCSIS MAC/PHY?

12 MR. FLEMING: Objection; form.

13 THE WITNESS: I would not characterize
14 it that way. And I also discuss this in my
15 declaration as well that the home PNA controller
16 circuit is separate and that -- than the DOCSIS
17 134 with 142 and 136. So Rabenko, I think,
18 looking at that, it describes then the DOCSIS
19 MAC/PHY including the proxy gateway 142 and the
20 voice data processor are the -- combined together
21 are the second circuit which are performing the
22 cable modem functions which is different than the
23 134, 138.

24 BY MS. WOO:

25 Q. You referred to cable modem functions.

1 To your understanding, what are cable modem
2 functions?

3 A. I meant to say that as a cable modem
4 engine -- I am glad you brought that up. I want
5 to -- correctly, I would say that it would be
6 that -- looking at that Figure 1b again is the
7 DOCSIS MAC/PHY block 134, as you can see in 1D,
8 the proxy gateway 142 and the voice data processor
9 136 are the cable modem engine that are
10 implemented in the second circuit performing cable
11 modem functions.

12 Q. So, in your opinion, DOCSIS MAC/PHY and
13 proxy gateway 142 are in the same circuit;
14 correct?

15 A. Along with the voice data processor
16 136.

17 Q. And what is the basis for your opinion
18 that the DOCSIS MAC/PHY, the proxy gateway, and
19 the voice data processor are in the same circuit?

20 A. I have outlined that. And, also, in my
21 declaration if we can bring that as an exhibit.
22 If not, I am going to -- is that possible?

23 Q. Why don't we stay here on Rabenko for
24 now. We can visit your declaration later. So
25 based on Rabenko, what is the basis for your

1 opinion that the DOCSIS MAC/PHY, the proxy
2 gateway, and the voice data processor are in the
3 same circuit?

4 A. My opinions are based on the fact that
5 these are performing -- these are within the cable
6 modem engine that are performing cable modem
7 functions and that Rabenko teaches that in
8 multiple different paragraphs in there, so --
9 which is discussing, in different places of
10 Rabenko, that these cable modem functions, they
11 interface with the cable media, which is the cable
12 head or upstream maps, or the cable central office
13 performing the cable modem or cable modem engines
14 performing cable modem functions. And I have gone
15 through that in details in many different
16 paragraphs as well in my declaration, which I
17 discussed those as well, but those are outlined in
18 various places in Rabenko as well.

19 MR. FLEMING: Counsel, just to be
20 clear, are you indicating that he is not allowed
21 to access his own declaration for today's
22 deposition?

23 MS. WOO: No, I am just saying that we
24 will go over his declaration later.

25 MR. FLEMING: But you do appreciate he

1 has every right to look at his declaration at any
2 time that he wants to, correct?

3 MS. WOO: Yes, but we are just going to
4 review that later.

5 BY MS. WOO:

6 Q. So you said that -- let's see. Your
7 opinion that the DOCSIS MAC/PHY, the proxy
8 gateway, and the voice and data processor, your
9 opinion that those aren't in the same circuit is
10 because those three components are within the
11 cable modem engine that are performing cable modem
12 functions; is that correct?

13 MR. FLEMING: Objection; form.

14 THE WITNESS: That's not the only thing
15 I said. I think you -- I think that I also
16 mentioned the fact that these are interfacing the
17 cable media, so the central office or the cable
18 head, as well as it discusses in Rabenko as
19 well -- so I guess your question is -- let me
20 understand your question again one more time.

21 Yeah, I believe that -- I also
22 discussed the fact that these are also interfacing
23 with the cable media as well, so those three
24 blocks are performing the modem -- those three
25 blocks are within the cable modem, in general,

1 that are performing cable modem functions in them.
2 And those are together in one circuit. That is my
3 opinion.

4 From my recollection of my declaration,
5 those are within the Circuit 2, the second
6 circuit, which I discuss as well in my
7 declaration. Since we are talking about the
8 patent, the claims language of the patent, since
9 you are bringing these up as a claim language of
10 the patent, we are talking very specific
11 terminology.

12 So I think that I really -- we need to
13 look at that in terms of what is my declaration,
14 what I discussed in the declaration, versus
15 general discussions of that. So I think my
16 opinions are based on the facts that are cited in
17 my declaration, which is specifically discussed
18 the reasons I do -- the reason that it's my
19 opinion that these are within the circuitry.
20 BY MS. WOO:

21 Q. So if two components are within the
22 same engine, are they part of the same circuit?

23 A. Depends on the situation. Not
24 necessarily.

25 Q. In what situation would they not be in

1 THE WITNESS: A person that's skilled
2 in the art, number one, would -- looking at
3 Rabenko and being familiar with -- not being
4 familiar -- being a person skilled in the art in
5 the area and reading the entire specification of
6 the patent and the paragraphs I discuss is not
7 just focused on 268, they would understand that
8 268 is a -- discusses that those skilled in the
9 art would understand the various illustrative
10 logical blocks, modules, circuits, and algorithms,
11 and algorithm steps described in connection with
12 the embodiments disclosed herein may be
13 implemented in any number of ways including
14 electronic hardware, computer software, or
15 combination of both.

16 The various illustrative components,
17 blocks, modules, circuits, and steps have been
18 described generally in terms of their
19 functionality. Whether the functionality is
20 implemented as hardware or software depends on the
21 particular application and design constraints
22 imposed on the overall system.

23 So a person skilled in the art reading
24 Rabenko and reading the fact that, what I
25 described earlier in terms of the blocks 134, 142,

1 the same circuit?

2 A. That's a broad, very broad question.
3 So really it depends on the implementation and --
4 depends on the implementation. I can't answer
5 that without details and the specifics.

6 Q. If two components together perform one
7 function, are they in the same circuit?

8 A. It could be and it could not be. Not
9 necessarily. I want to point out the fact that,
10 as I said earlier, the circuit -- and I read the
11 Paragraph 268, the circuit can be a combination of
12 those things I already stated earlier. So the
13 answer to your question, this question, is not
14 necessarily.

15 Q. Help me understand. I'm not sure how
16 268 informs whether two components that together
17 perform one function, whether those are in the
18 same circuit. Can you help me understand? So I
19 have scrolled to 268 since it's quite far away.
20 If you would like to look, I will make it big.

21 Can you help me understand how this
22 informs whether two components performing the same
23 function -- or together performing a function are
24 in the same circuit or not?

25 MR. FLEMING: Objection; form.

1 and 136, those will be in the second circuit or a
2 different circuit than the block 138 home PNA.
3 And it actually shows in Figure 1b that when a
4 determination is made, that's a data that is sent
5 separately in the line above to the proxy
6 gateway -- sorry -- to the -- I take that proxy
7 gateway back. Please strike that.
8 -- to the home PNA controller 138 as
9 well as the DOCSIS MAC/PHY as shown in Figure 1b
10 is connected to the -- the VoIP area network or
11 LAN on the left.

12 Q. So returning to Paragraph 268, just so
13 I understand its relevance to circuits, are you
14 saying because 268 teaches that the implementation
15 is purely functional and it can be either hardware
16 or software, two functional blocks may or may not
17 be in the same circuit?

18 MR. FLEMING: Objection; form.

19 THE WITNESS: No. That
20 paragraph doesn't say any of the -- it does not
21 say that. You are -- I don't understand by
22 "purely functional" means. And, also, I don't
23 understand what you mean that these two blocks may
24 or may not be in the same circuit.

25 What Paragraph 268 is, as I discussed

earlier, is that -- I don't think I want to, for sake of time, want to go and repeat myself, but a person that's skilled in the art understands that 268 is discussing that the various things I discussed above, as I already said that, would understand that those three blocks I mentioned under the second circuit, which is the 134 DOCSIS MAC/PHY 136 and 142, which are not the same circuit as the home PNA controller 138.

BY MS. WOO:

Q. I'm sorry. So I am just not understanding the relevance, I think, of Paragraph 268 to whether or not two particular components are in a circuit or not. Perhaps I am misunderstanding. Is 268 relevant to that determination?

MR. FLEMING: Objection; form.

THE WITNESS: I don't know what you mean by 268 is relevant in that determination. The relevancy of that, I discussed it in my declaration in multiple places, and I have also right now, and also in my declaration, discussed many different paragraphs within the Rabenko, which a person who is skilled in the art would understand those two circuits I just mentioned are

in a separate circuit than a home PNA controller.

So it's not just that, the paragraph, but the combination of other paragraphs and other statements I have made in my declaration I have shown is what the person skilled in the art would understand.

BY MS. WOO:

Q. Okay. So is it your opinion, then, if two or more components are working together to perform a function, those are in the same circuit?

MR. FLEMING: Objection; form.

THE WITNESS: No. I disagree with that statement.

BY MS. WOO:

Q. Why?

A. What you said is that two or more components are working together to perform a function, those are in the same circuit, the answer is no. Depends on many things. It's a hypothetical question. Depends on the function. Depends on what you mean "a function." Depends on working together. Depends on what is two or more components.

So we are not having a general discussion. We are actually very specifically

talking about a claim language here, which I have specifically gone through that analysis and shown it in my declaration. But going back to your question, the question is no, I disagree with you.

MS. WOO: Let's see. We have been going for about an hour. Why don't we take another break. Does ten minutes work again?

THE WITNESS: For me 15 minutes is probably better, but, also, if you are almost -- I don't know what time is it here? It's 2:00 locally? I would say 15 minutes is better for me if you don't mind so I can grab a quick something also.

MS. WOO: Yes, of course. 15 minutes is fine. So let's come back at 11:35 Pacific time.

THE WITNESS: Works for me, thank you. (Whereupon, a recess was held from 11:21 a.m. to 11:36 a.m.)

BY MS. WOO:

Q. Back on the record. I am going to share my screen again. We are still looking at Rabenko. Can you see my screen?

A. Yes, I do.

Q. It's okay if you want to look at your

soft copy as well. Just so we know we are looking at the same thing. Here is Rabenko Paragraph 33. Do you see that?

A. Yes, ma'am, I do.

Q. Okay. And so about four lines down, it says:

"In the described exemplary embodiment, a DOCSIS network is used for delivery of broadband services."

Do you see that?

A. Yes, ma'am, I do.

Q. To your understanding, what are broadband services?

A. Well, looking at Rabenko itself, broadband services, there is no grounds given in there in terms of the lower band or higher band and so on, but at the time of the -- Rabenko's patent application, they -- broadband services -- it also discusses it here, and other places in Rabenko, are services such as IP services, IP -- over the IP network, Internet protocol, voice, data, applications.

Q. Okay. Just taking a step back for my understanding, when Rabenko uses the word

"broadband," is it referring to frequency?

MR. FLEMING: Objection; form.

THE WITNESS: It really doesn't go into details to how is it defining the band and broadband because that could be defined many different ways in my field. In this field. So -- BY MS. WOO:

Q. Okay. We don't need to get into specifics. I just want to understand when you talk about band, you are talking about frequency, right, not some other measurement?

MR. FLEMING: Objection; form.

THE WITNESS: Again, not necessarily. Broadband is not necessarily just a frequency, but it could be other factors that would make a -- that would make it a broadband. And frequency, by itself, doesn't really mean anything by itself in related to broadband. There has to be a lot more specifics in terms of frequency of what. Frequency of -- so I need more specifics in there.

BY MS. WOO:

Q. I see. Going to Paragraph 34 now, so a little less than halfway down, the sentence that says:

"The first protocol is a

discussing it to be a broadband. Baseband is -- has to do with whether the signal is modulated to some carrier frequency instead of a different frequency. Broadband is the -- relates to other factors than just a modulated carrier frequency.

Q. And what are those other factors?

A. For the broadband?

Q. Yes.

A. Data rate, the signal itself.

Different signals have a different bandwidth, voice, or other applications or IP. Many other factors whether the modulation, the demodulation of the signal, and whether it has other things in the protocol that are added to the signal. So those are different factors.

Q. And what is a conventional telephone?

A. Well, with respect to -- in general or with respect to this patent 775? And with respect, I say 108 we are talking about.

Q. With respect to conventional telephone 108.

A. At the time conventional telephone was within the -- what it's discussing here is the conventional analog phones -- the conventional analog phones.

baseband protocol to deliver POTS to the conventional telephone 108."

Do you see that sentence?

A. Yes, ma'am, I do.

Q. What is POTS?

A. Plain old telephone system.

Q. And how can a telephone system be "plain old"?

A. I think it's just an acronym they use. It's for conventional telephone system that is a twisted pair, for example, as one of the implementation. But it's just general POTS, conventional telephone 108.

Q. And to your understanding, what is a baseband protocol?

A. A baseband protocol, in this particular case, what they are talking about is that the signal sends in a baseband, in a -- versus modulated to some higher carrier frequency. It's baseband signal.

Q. So to your understanding, what is the difference between baseband and broadband?

A. Nothing prevents baseband, not via broadband. There is nothing in baseband that is

Q. And what is an analog phone?

A. What is an analog phone?

Q. Yes.

A. It's a phone that is a conventional phone. I mean, it's a phone that carries the signal, the signals are sent in phone wires, which are typically a twisted pair of wires from the -- to the customer premise for the phone. So those are the conventional phones. And it talks about it also as an example for the Bellcore below and so forth.

Q. And are the conventional phones analog because they can only receive analog signals?

MR. FLEMING: Objection; form.

THE WITNESS: The conventional phones are phones that the signal sends from the phone box or from wherever it's coming in to the customer premise in a twisted pair in a -- in an analog form, yes. In an analog form. I will not say yes, but my statement that said that it sends a signal to the phone is coming to the customer in a twisted pair in an analog form.

BY MS. WOO:

Q. Okay. Can a conventional telephone receive and process packets?

1 A. This is a really broad question. First
2 of all, what do you mean by conventional phone?
3 Second of all, what do you mean by processing
4 packets?

5 Q. Okay. Can Rabenko's conventional
6 telephone 108, can it receive packets and process
7 them such that a user picks up the handset and
8 hears voice?

9 MR. FLEMING: Objection; form.

10 THE WITNESS: Again, this is a very
11 broad question. Receive packets. What do you
12 mean by packets, number one. Number two, hearing
13 voice, depends on what is sent. I mean, is it --
14 hearing voice is a very broad thing. Is it --
15 what do you mean by hearing voice? What is a
16 voice here?

17 BY MS. WOO:

18 Q. Can Rabenko's conventional telephone
19 108, can it receive data packets?

20 A. Again, very general question. My
21 answer is going to be very general. Receiving
22 data packets means -- I mean, it's a twisted pair.
23 I can -- that is connected to some other
24 components that is sending those data packets. If
25 it's connected by a pair of twisted pair wires,

1 the signal will travel through the wires
2 physically and get to the other end. I don't know
3 what you mean by this question.

4 Q. Okay. So if the data packet has
5 physically traveled across those wires to the
6 conventional telephone 108, can that conventional
7 telephone -- can that telephone process those data
8 packets such that if you pick up the handset, you
9 could have a phone call with whatever entity is on
10 the other end?

11 MR. FLEMING: Objection; form.

12 THE WITNESS: Again, the statements are
13 very, very broad here. You are talking about
14 physically you send two signals on a two-step
15 there. It gets on the other end. The other end
16 picks up the phone and answers. However, they
17 know or they don't know whether there is a call or
18 not. But very hypothetically, let's say they pick
19 it up -- could have a phone call. What do you
20 mean by a phone call?

21 They may hear something or nothing
22 depending on what is sent. Maybe just a bunch of
23 tones or garbage or some noise, but that
24 doesn't -- I don't know what you mean by phone
25 call.

1 BY MS. WOO:

2 Q. Okay. Let's go to Rabenko
3 Paragraph 44. And I will scroll there too. Can
4 you see Paragraph 44?

5 A. Yes, ma'am, I have it.

6 Q. Okay. So about halfway through the
7 paragraph there is a sentence that says:

8 "All packets that arrive to
9 or leave from the residential
10 gateway via the WAN must go
11 through the DOCSIS MAC/PHY 134."
12 Do you see that?

13 A. Yes, I do.

14 Q. So when Rabenko says "all packets," is
15 it referring to both voice and data packets?

16 A. Potentially, yes, it could have a voice
17 and data packets.

18 Q. Okay.

19 A. Packets. Packets are -- packets
20 are data packet units. So they are coming in as
21 packets.

22 Q. So you said packets are packet data
23 units. I am not very familiar with packet data
24 units. What is packet data unit?

25 A. Or data packet units. These are simply

1 packets that -- these are voice and data packets
2 coming in, in certain formats. In a format by the
3 DOCSIS as it requires it. Sorry, go ahead,
4 please.

5 Q. No, I thought you were done. Please
6 finish your answer.

7 A. For now, I just said that these are
8 packets which are voice and data packets coming in
9 from the network which is the media to the -- they
10 are coming from there. That's it.

11 Q. Okay. So moving on to the next
12 paragraph, so that's 45 in Rabenko. Okay. I'm
13 not sure I can make this big enough and show both
14 parts of the paragraph. Let me see. Maybe it's
15 better if you look at this in your own PDF copy.
16 In Paragraph 45 do you see the sentence that
17 says -- and it's a little less than halfway down.
18 It says:

19 "Conversely, if the DOCSIS
20 MAC/PHY determines that a packet
21 payload is voice, the packet is
22 routed to a proxy gateway 142 to
23 be processed in a manner to be
24 described in greater detail
25 below."

1 Do you see that sentence?

2 A. Yes, I do.

3 Q. To your understanding why do voice
4 packets get routed to proxy gateway 142?

5 A. So let me put a framework around this
6 paragraph before; is that, first of all, 45 is
7 talking about the downstream which is from the
8 media cable head media to the DOCSIS MAC/PHY, that
9 the signal comes to that. And then it says that
10 if that determines that the packet is data, then
11 the DOCSIS MAC/PHY routes the package directly to
12 home PNA controller 138.

13 So this is a home PNA controller in the
14 first circuit which is going to the -- the first
15 circuit which consists of the home PNA controller
16 138. And it goes on that the home PNA controller
17 translates the data, et cetera, et cetera. So
18 going to conversely now, if the DOCSIS MAC/PHY 134
19 determines that the packet payload is voice, the
20 packet is routed to the second circuit, and within
21 that it's the proxy gateway 142 and it's processed
22 in a manner to be discussed below. I am done.

23 Q. Okay. And to your understanding, why
24 is the voice packet not then -- not routed
25 directly to home PNA controller. Why is the voice

1 So one of the things it does is, after
2 that determination, whether it is either one of
3 them that performs that, then the rest of the
4 paragraph discusses other processes and
5 procedures.

6 Q. So why is it if the packet is a data
7 packet, it can skip the proxy gateway's
8 determination of whether the packet is destined
9 for the home PNA LAN 110 or the POTS telephone
10 108?

11 MR. FLEMING: Objection; form.

12 THE WITNESS: That is the functionality
13 of those blocks. If it is a data packet, it
14 routes it directly to home PNA controller which
15 then is transmitted to home PNA packet with a
16 customer equipment. If it's a voice, it goes --
17 then it goes a different route by being processed
18 in a manner appropriate for the voice in terms of
19 the procedures it talks about, which are for
20 the -- which are described in the -- what it does
21 in the proxy gateway 142.

22 BY MS. WOO:

23 Q. So, to your understanding, why do data
24 packets and voice packets have different routes
25 from each other?

1 packet routed to the proxy gateway?

2 MR. FLEMING: Objection; form.

3 THE WITNESS: Well, as it says here as
4 well, if the packet payload is voice, then the
5 packet, which still is in a packet as a voice,
6 meaning that there is still other processing that
7 it has to do to those packets, if it is, then it's
8 routed to the second circuit by the proxy gateway
9 142 to be processed in the details that discusses
10 below. So that is not a -- that's it. That's all
11 I am going to answer. So I am done.

12 BY MS. WOO:

13 Q. So what additional processing does the
14 voice packet need from proxy gateway 142 that the
15 data packet does not need?

16 A. I think the rest of that paragraph
17 describes this in detail. Some of it. First of
18 all, it says that the proxy gateway determines
19 whether the packet is destined for the home PNA
20 LAN, local area network, 110 or the POTS telephone
21 108. And then it discusses that if the packet is
22 destined for a POTS telephone, the packet is
23 routed to a voice and data processor for
24 decompression and depacketization as it describes
25 in later.

1 A. My understanding is that in the DOCSIS
2 MAC/PHY 134 that is shown in figure, I believe,
3 1b, it determines if the voice or a data packet.
4 If it's a data packet, then it's routed directly
5 to home PNA controller and then from there to the
6 customer premises. Or customer equipment, I
7 should say.

8 And it goes through that along with the
9 AFE226 as I have discussed it. Also, in my -- as
10 shown also in figures later on, and I have
11 discussed that as well, if it happens to be a
12 voice, it goes -- Rabenko discusses it. If it is
13 the voice, then that data -- sorry -- those
14 packets are routed to proxy gateway 142 which then
15 determines if those packets are for a POTS
16 telephone voice or if it's meant for the home PNA
17 110 or the LAN 110 -- sorry -- LAN 110 where those
18 voice packets are sent.

19 Q. So I understand that data packets and
20 voice packets have different routes. My question
21 is, why make that distinction? Why do the data
22 packets and voice packets have different routes?

23 A. Well, if it is a data packet going
24 through -- if it's a data packet going to 134 then
25 routes them directly to home PNA controller 138

1 which then goes down to LAN 110, those data
2 packets are meant for that and it doesn't require
3 any of the functionalities or processing that 142
4 and 136, for example, for voice is performing.
5 And, as it says here, is in terms of
6 decompression, et cetera.

7 So by doing that, it is avoiding the
8 blocks 142 and possibly 136 to avoid additional
9 processing that is not needed, increase the
10 through-port, as well as send the signal directly
11 to where it's intended, which is for the
12 downstream for the -- the data going from proxy
13 138 downstream.

14 If it is voice, it requires the
15 additional processing that it discusses here in
16 the Paragraph 45 -- I already talked about this --
17 and determines first if it's a LAN 110 signal or a
18 POTS telephone. And if it's a POTS telephone, it
19 performs certain operations such as decompression,
20 depacketization, et cetera.

21 And if it's meant for home PNA LAN 110,
22 then the packets are routed appropriately for the
23 home PNA controller connected via the AFE 268
24 going to the home PNA LAN.

25 Q. So I see that in Paragraph 45 it says

1 home PNA telephone get routed directly to the home
2 PNA controller and eventually to the home PNA LAN?

3 MR. FLEMING: Objection; form.

4 THE WITNESS: Well, as also described
5 in that paragraph, the same thing, is that if the
6 packet is determined that the packet payload is
7 voice, the packet is routed to the proxy gate 104.
8 And then it also looks at if the packet payload
9 where the proxy gateway 142 determines that it is
10 destined for a PNA LAN 110, then it sends the
11 packet to the home PNA 110, which is routed to the
12 home PNA controller for conversion to home PNA
13 format for transmission going to the MTA140 as
14 shown in Figure 1E to the right via the land lines
15 110.

16 BY MS. WOO:

17 Q. I'm sorry. Did you finish your answer?

18 A. Yes, I did. Please go ahead.

19 Q. So in Paragraph 45 it says:

20 "If the packet payload is
21 data, then the DOCSIS MAC/PHY
22 routes the packet directly to a
23 home PNA controller."

24 How does the DOCSIS MAC/PHY know that
25 the packet is destined for the home PNA

1 if the packet payload is data, then the DOCSIS
2 MAC/PHY routes the packet directly to the home PNA
3 controller. And then at the bottom of that
4 paragraph it says if the voice packet is destined
5 for the home PNA LAN, then it is routed to the
6 home PNA controller as well.

7 Why is the voice packet routed through
8 the proxy gateway instead of directly to the home
9 PNA controller like the data packet?

10 A. Well, an example is Paragraph 40 of the
11 Rabenko as well which is, in this case, home PNA
12 telephone 126 is connected directly to the LAN
13 110, and that is via the port 106b. And it
14 discusses that the home PNA telephone integrates
15 the function of the home PNA adapter and the
16 telephone and, in this case, the home PNA
17 interface here, it accomplishes voice transport
18 and signalling function instead of the POTS
19 interface. So it allows this flexibility to also
20 be able to connect via the LAN to the devices like
21 the home PNA 126.

22 Q. So if the packet is a data packet and
23 it can get routed directly to the home PNA
24 controller and then eventually to the home PNA
25 LAN, why can't voice packets destined for that

1 controller?

2 MR. FLEMING: Objection; form.

3 THE WITNESS: That determination is
4 made within the DOCSIS MAC/PHY layer which has a
5 content for the packets coming in that -- towards
6 the controller 138 which is going downstream as a
7 data to the customer equipment.

8 BY MS. WOO:

9 Q. And why does the DOCSIS MAC/PHY not
10 make that determination for the voice packet?

11 MR. FLEMING: Objection; form.

12 THE WITNESS: It does, actually,
13 because that's actually the paragraph that we were
14 discussing in Column 3, Paragraph 40 -- Page 3,
15 Paragraph 44. Paragraph 45, sorry. Paragraph 45.
16 It says that conversely if the DOCSIS MAC/PHY
17 determines that the payload is voice, the packet
18 is routed to the proxy 142 to be processed in a
19 manner of details discussed below.

20 BY MS. WOO:

21 Q. So the next sentence says that the
22 proxy gateway determines whether the packet is
23 destined for home PNA LAN or POTS telephone. So
24 are you saying that the DOCSIS MAC/PHY determines
25 that a voice packet is destined for the home PNA

1 LAN and the proxy gateway also makes that same
2 determination of whether it's destined for the
3 home PNA LAN?

4 MR. FLEMING: Objection; form.

5 THE WITNESS: No. That's not the case.

6 In the first case, top of the Page 3 is --
7 specifically says that the DOCSIS MAC/PHY routes
8 the packets, which are data packets, going down
9 the media terminal, MTA, over the land lines 110.

10 And then this is a separate case where
11 it looks at the proxy gateway 142 which determines
12 whether the packets are destined for the POTS
13 telephone or the home PNA 110 based on the second
14 determination which is then destined for the home
15 PNA 110. If it happens to be an analog voice, for
16 example, that is meant for the POTS telephone,
17 those are sent to the POTS telephone.

18 If the proxy gateway within these
19 payload is a voice, determines that the packet is
20 destined for home PNA 110, then the packets are
21 routed to the home PNA controller which goes down
22 via the home PNA LAN in that direction.

23 BY MS. WOO:

24 Q. And why is it a separate case for voice
25 packets versus data packets?

1 MR. FLEMING: Objection; form.

2 THE WITNESS: If you look at
3 Paragraph 34, that explanation is given. And
4 also -- so Paragraph 34, it talks about the
5 gateway, which is a cable modem used to describe
6 the CableLabs DOCSIS, Except that the telephony
7 and service delivery to the subscriber port 106b
8 are not limited to Ethernet, but rather can
9 support any physical media and protocol compatible
10 with a specification of LAN.

11 So, in this case, the residential
12 gateway 102 supports to protocols at the
13 subscriber ports which are connected to 106a and
14 106b. These protocols are -- one is the POTS,
15 which is the baseband protocol to deliver POTS to
16 the conventional telephone via the subscriber port
17 106a.

18 Skipping down a couple of lines, it
19 talks about (as read):

20 "To this end, the exemplary
21 residential gateway 102 may
22 include high voltage circuits
23 and processing elements to
24 convert packetized voice over
25 IP" -- which is a voiceover IP

1 coming in -- "IP network to the
2 contin continuous analog voltage
3 used for POTS."

4 The second protocol, which it describes
5 in here (as read):

6 "...is home PNA to deliver
7 telephony and services over LAN
8 via the second subscriber port
9 106, and is described in the
10 home PNA spec version 2.0..."

11 Which is discussed below and so on. So
12 in here in Paragraph 45 it's discussing the fact
13 that if the proxy gateway 142 determines that the
14 packet is destined for home PNA, then it is routed
15 to the home PNA controller 138 for the conversion
16 to home PNA, particularly for packets of voice
17 over the IP that it's discussing in paragraph
18 above I just mentioned. Was it Paragraph 34, I
19 believe? Yes.

20 So the data, which is discussing at the
21 beginning of the -- up top of the Page 3, that is
22 very clear that if data packet is a data, then
23 that descends to the home PNA controller and then
24 from there to the customer equipment over the LAN
25 110.

1 However, if it happens that the payload
2 is a voice, then the packet is routed to the
3 blocks 142 and 146; first for decompression and
4 depacketization. So unless it does that, after
5 performing that decompression and
6 depacketizations, then after that it determines if
7 any of these signals coming there, if it is
8 destined for a home LAN 110, then it makes the
9 second routing of that by the -- routed to the
10 home PNA controller 136 for conversion if it's
11 needed.

12 These are two separate cases and two
13 separate issues here.

14 BY MS. WOO:

15 Q. Okay. So back to Paragraph 45, you can
16 see the sentence about halfway down that says:

17 "If the packet is destined
18 for the POTS telephone, the
19 packet is routed to a voice and
20 data processor 136 for
21 decompression and
22 depacketization."

23 To your understanding, why does the
24 voice and data processor have to perform
25 decompression and depacketization?

1 A. That is the requirement within the
2 DOCSIS environment where the signals are sent. If
3 it is voice or if it is voiceover IP or voice in
4 the packet data, those are compressed for
5 compression and then it has to be decompressed as
6 well later. And same goes with the
7 depacketization because the signals coming in are
8 packetized signals. So those are the requirements
9 that is needed for the voice compression and
10 packetization.

11 Q. Okay. And then the next sentence says
12 that:

13 "The voice and data processor
14 136 generates an analog voice
15 signal from the decompressed
16 signal..."

17 Why does the voice and data processor
18 have to generate an analog voice signal?

19 A. There is more to that. It's not just
20 that. But I think the sentence goes on and says
21 that:

22 "The voice and data processor
23 136 generates an analog voice
24 signal from the decompressed
25 signal and delivers the analog

1 an hour again. Why don't we take another break
2 and then come back. Does another ten-minute break
3 sound okay?

4 A. For me it's -- yeah, it's fine.

5 Q. So let's come back in ten minutes then.

6 A. Thank you.

7 (Whereupon, a recess was held from
8 12:53 p.m. to 1:04 p.m.)

9 BY MS. WOO:

10 Q. What is a circuit in the context of the
11 775 claims?

12 MR. FLEMING: Objection; form.

13 THE WITNESS: Can you be more specific
14 which claim are we discussing?

15 BY MS. WOO:

16 Q. Claim 18. Let's see. I can share my
17 screen again. Is that big enough?

18 A. Thank you, yes.

19 Q. So in the context of Claim 18, what is
20 a circuit?

21 A. Okay. Thank you.

22 MR. FLEMING: Objection; form.

23 THE WITNESS: With respect to the
24 circuit in the 775, it is a claim element. And I
25 don't think that is discussed anywhere else in the

1 voice to the POTS telephone 108
2 via the SLIC 109."

3 Which is the protocol for generating
4 analog signal from the voice signals coming in
5 after decompression to be sent over the POTS phone
6 in an analog format. So the -- if you look at
7 Paragraph 47, that actually has a lot more clear
8 discussions in terms of what's going on there.

9 Because discussing it specifically that
10 when the signals are coming in that are meant --
11 that are coming to the voice and data processor
12 136 in Paragraph 47, it says that the analog voice
13 signal compresses -- this is an upstream fashion,
14 an upstream environment and so forth.

15 I guess -- let me look at your question
16 again. I guess your question is very broad. I am
17 looking at the question. You are saying that the
18 voice and data processor generates an analog voice
19 signal from a decompressed signal if that is done
20 correct, unless it is a voice signal. If it is a
21 voice signal, then it sends it via the ports 106a
22 to the analog POTS because the analog POTS, the
23 formats for those, the plain old telephone, is
24 analog signal which goes through that.

25 Q. Okay. So we have been going for over

1 patent but besides the claims. So there are --
2 with respect to Claim 1 is discussing two
3 circuits; the first circuit and the second
4 circuit. It's discussing these circuits perform
5 certain -- it discusses them in these two claims.

6 So would you like me to give you a
7 general definition of the circuit as I discussed
8 before or is there anything specific?

9 BY MS. WOO:

10 Q. Well, maybe remind me of the general
11 definition you gave before, please.

12 A. It's a very, very broad definition of
13 it being -- I discussed it as a passive or active
14 circuits and having a -- being an analog with
15 digital circuit. There are a variety of different
16 circuits that we have in the art; a processor
17 circuit with the software associated with it,
18 which is part of that circuit, or a controller
19 performing with the software.

20 So there is a variety of different -- a
21 person skilled in the art would understand that
22 the circuit will have all these different -- in
23 general, very generally, will have these different
24 things are circuits. Or circuit.

25 Q. And what is a circuit as used in

1 Claim 18?

2 MR. FLEMING: Are you asking with
3 respect to his declaration, counsel?

4 MS. WOO: I am asking with respect to
5 the claim that is in front of him. But if he
6 would like to look at his declaration, he may.

7 THE WITNESS: So are you putting that
8 as an exhibit, the declaration then?

9 MS. WOO: It already is an exhibit.

10 THE WITNESS: I am going to open up
11 declaration Exhibit 1002. So 18b limitation
12 discusses a data networking engine implemented in
13 the first circuit.

14 BY MS. WOO:

15 Q. I'm sorry, if you are looking at a
16 specific paragraph, do you mind directing me to
17 where you are looking?

18 A. Sure, absolutely, yes, I will. So I
19 was just looking at Page 36, Limitation 18b, which
20 is above Paragraph 85. So I discuss that the
21 circuit, with respect to 775, and in terms of what
22 Rabenko discusses that in Paragraph 88, is that
23 the first circuit, as I am looking at Figure 2, is
24 the home PNA controller coupled to the analog
25 front end 226 and that the -- which is both shown

1 in Figure 2 as well as in Figure 11a where the
2 analog front end 226 couples to the home PNA
3 controller.

4 And it is my opinion that, in this
5 case, it's a combination of the controller 138 and
6 the AFE 226 which is the first circuit.

7 Q. And why are home PNA controller 138 and
8 AFE226 in the same circuit?

9 A. And the reason is that they are both
10 performing functions for -- in terms of the home
11 PNA data coming in, going to the LAN 110, together
12 with the LAN, in combination of them together,
13 provides the signalling for the LAN 110 of the
14 home PNA LAN, which is connected then to the MTA
15 140.

16 Q. So is it the fact that they are both
17 performing functions and providing the signalling
18 for the LAN 110 what makes those two components
19 comprise a circuit?

20 MR. FLEMING: Objection; form.

21 THE WITNESS: No, I do not agree with
22 that characterization. But the fact that a
23 circuit, as I discussed earlier, in this case, the
24 circuit 1 is performing certain functionalities
25 which are a home PNA and a conversion of the

1 signalling into a format for a LAN 110.

2 Then a person skilled in the art, in my
3 opinion, as I mentioned in Paragraph 93 as well,
4 they would understand that the home PNA 138 would
5 be implemented in a circuit that includes a
6 processor and would be programmed into such a
7 processor and then to perform those functions, and
8 also those functions are then a conversion of that
9 to the signalling for 110, and is part of that
10 operation, which is combination of these two, I
11 believe is the first circuit.

12 BY MS. WOO:

13 Q. If I have two components that are
14 merely interconnected, are those one circuit?

15 MR. FLEMING: Objection; form.

16 THE WITNESS: No, I don't disagree
17 (sic) with that necessarily.

18 BY MS. WOO:

19 Q. I'm sorry, did you finish?

20 A. Yes, yes, I did. Sorry. No, I
21 disagree with you, yes.

22 I should add, I disagree with you based
23 on what -- based on the claim language and based
24 on the specification of the 775. So within the
25 775 patent, a person who is skilled in the art

1 would understand that these two blocks are the
2 circuit, the first circuit.

3 Q. I'm sorry. Are you looking at
4 something in the 775 when you referred to these
5 two blocks?

6 A. Actually, I am not. I was looking at
7 the claim language itself in my -- in my
8 declaration. Item D, Limitation 18b, above that
9 Paragraph 85.

10 Q. Okay. And when you say these two
11 blocks, what in the claim language are you
12 referring to?

13 A. I am referring that the data networking
14 engine implemented in the first circuit includes
15 at least one processor, the data networking
16 engine, programmed with the software, and then
17 executed by at least one processor of the first
18 circuit, causes data networking engine to perform
19 home networking functions, including -- including
20 interfacing with the customer equipment --
21 provided equipment.

22 So looking at that, it is my opinion a
23 person skilled in the art reading this would
24 understand that a home PNA controller, including
25 the AFE 226, which is interfacing with a customer

1 program provided equipment are the first circuit.

2 Q. So why is the home PNA controller and
3 the AFE in the same circuit?

4 MR. FLEMING: Objection; form just
5 based upon what's written as the question.

6 THE WITNESS: I mentioned that that is
7 the circuit, the first circuit. So -- and I have
8 also discussed earlier the circuit, a person
9 skilled in the art reading this 775 patent claims
10 and this specification, as well as I also have
11 discussed an example, which is the Holloway
12 example, would understand, which is indicating
13 that the person skilled in the art would also
14 understand this, they would understand Rabenko's
15 home PNA 138 in Paragraph 89 include a processor,
16 which can be a fully integrated MAC/PHY device to
17 include a processor, and I talk about the details
18 of that there.

19 BY MS. WOO:

20 Q. You referred to a Holloway example? I
21 am not quite sure what you are talking about. Is
22 there a specific paragraph in your declaration I
23 should be looking at?

24 A. Sure. Yes. Paragraph 94.

25 Q. So perhaps I am a little confused. I

1 with the AFE 226 is providing a bidirectional
2 communication with the customer premises or the
3 customer devices, and those are providing home
4 networking functions including interfacing with
5 the customer premise network equipment.

6 So, in my opinion, this is a circuit
7 that is per circuit that's performing these two
8 components. 138 and the analog 110 are the first
9 circuit as it is in the Claim 18b of the 775. And
10 a person who is skilled in the art would
11 understand that it's a combination of these two
12 which are performing the data networking engine,
13 which is programming software, and that processor
14 includes a -- with it including the interface with
15 the customer-provided equipment is the first
16 circuit, which is the AFE 226.

17 BY MS. WOO:

18 Q. You mentioned that you had given a
19 general definition of "circuit" earlier. What is
20 a specific definition of circuit as used in
21 Claim 18?

22 MR. FLEMING: Objection; form.

23 THE WITNESS: Well, as I discussed
24 earlier, the specification of the patent outside
25 the claims, it does not define what is a circuit.

1 don't see in Paragraph 94 any explanation of why
2 Rabenko's MAC/PHY and AFE are in the same circuit.
3 Can you please explain?

4 A. I think we are mixing up things
5 together here. The home PNA controller is a --
6 the data networking engine along with the AFE 226.
7 So the fully integrated MAC/PHY device, which can
8 be a fully integrated MAC/PHY device, is not a
9 MAC/PHY device of the DOCSIS, but it is the
10 interface to the customer equipment devices.

11 Q. So earlier you mentioned a general
12 definition of "circuit" that could be passive
13 components and another one that could be active
14 components. Why then is Rabenko's home PNA
15 controller 138 not itself a circuit?

16 MR. FLEMING: Objection; form.

17 THE WITNESS: As I also describe in
18 Paragraph 87, first of all, the definition of the
19 circuit I gave was a broad definition and I was
20 very specific about that. And I also mentioned
21 that the circuit would be hardware combined with
22 software or a processor with software and the
23 analog or digital components within that circuit.

24 The Rabenko, as I discuss in
25 Paragraph 87, is that a home PNA controller along

1 I am, based on the analysis that I have done and
2 looking at Rabenko and looking at 775, a person
3 skilled in the art will have the understanding of
4 the circuit as I described earlier, which is in
5 the Circuit 1 is the home PNA controller along
6 with the AFE 226, is the first circuit. And it
7 meets the claim element 18b.

8 BY MS. WOO:

9 Q. Okay. So I understand what you are
10 mapping to be in the first circuit. But, to your
11 understanding, what is a circuit as used in
12 Claim 18?

13 MR. FLEMING: Objection; form.

14 THE WITNESS: I already answered that
15 question. So the Claim 18 talks about the first
16 circuit which causes the data networking engine to
17 perform home networking functions including
18 interfacing with the customer-provided equipment.
19 And I have already said what those are, how it
20 maps through Rabenko.

21 BY MS. WOO:

22 Q. So I didn't ask how the claims mapped
23 to Rabenko. I asked, to your understanding, what
24 is a circuit as used in Claim 18 in the context of
25 the 775 removed from the context of Rabenko?

MR. FLEMING: Objection; form.

THE WITNESS: What do you mean by a circuit? Do you mean the first circuit?

BY MS. WOO:

Q. I mean just circuit. Claim 18 refers to a first circuit and a second circuit. What is a circuit?

A. A circuit, as I already discussed as well before, is a -- can be a -- as also I talked about it in Rabenko 268 as well -- performs certain functions and processing and, as I also discussed earlier in 268, it can be a different form. Meaning that it can be a processor with a hardware running on it including -- sorry -- processor with a software running on it, not a hardware running on it -- including the software and interfaces.

It would have -- so that circuit is a -- what I also discussed in several places in my declaration could be designed as a -- it includes at least one processor with the software running on it, it would include other components to perform the operation or the processing that is doing it.

So looking at, for example,

circuit is a processor with the software including the AFE, which a person skilled in the art would understand these are circuits, which are performing certain functionalities.

Q. So I'm not sure how Rabenko informs what a circuit, as you say, Claim 18 means. So without referring to Rabenko, what is a circuit as used in Claim 18?

MR. FLEMING: Objection; form.

THE WITNESS: A person skilled in the art looking at Claim 18 as a circuit, they would understand that the circuit could include a processor, a software, and other components that performs the functions required and those are circuits. That is a circuit.

Based on the claim language, a person skilled in the art knowing what the circuit is and based on understanding what 775 is discussing in the claim language, that would be their understanding of what the circuit would entail in the Claim 18.

BY MS. WOO:

Q. Okay. So the claim also recites the second circuit being separate from the first circuit. To your understanding, how is one

Paragraph 95, at the end of it I say that -- I discuss that it would have been obvious to a person skilled in the art. As an example, the Rabenko's home PNA controller can be implemented in a circuit that includes at least one processor. And, also, in Paragraph 99 I talk about the Paragraph 268, as well, of Rabenko that depending on the application, upon the application -- depending upon the particular application and design constraints imposed on the overall system, the circuit may be implemented a number of ways. It could be electronic hardware, computer software, or combination of both, et cetera.

Q. I don't know if you misspoke or not, but did you say that a circuit may be implemented in a number of ways; it could be electronic hardware, computer software, or combination of both, et cetera?

A. I was referring to Rabenko's Paragraph 268. And in there it talks about a person skilled in the art would understand the implementation could be in any number of ways including electronic hardware, computer software, or combination of both and so forth.

Where I am discussing the claim, the

circuit separate from another circuit?

A. Well, first of all, a separation is not necessarily physically separate, but they are functionally separate, as also was -- my understanding is that that was also part of the claim construction.

So when you are talking about being separate, they are functionally separate and are such that the functionalities of cable modem function are performed by the cable modem engine and the home networking functions are performed by the data networking engine.

I believe I answered your question. Or I am done.

Q. Okay. Why don't we take a quick five-minute break.

A. Sounds good. Thank you.

(Whereupon, a recess was held from 1:47 p.m. to 1:52 p.m.)

BY MS. WOO:

Q. Dr. Kiaei, at any time today either during a break or during your testimony, did you talk to anyone about the IPR or the 775 patent?

A. No.

Q. At any time today either during a break

1 or during your testimony, did you send an
2 electronic message to anyone or read an electronic
3 message from anyone about the IPR or the 775
4 patent?

5 A. No. My phone has been on airplane mode
6 and I have not used any of that.

7 Q. Okay. Thank you. I have no further
8 questions at this time.

9 A. Thank you, counsel. I appreciate it.

10 MR. FLEMING: Can we take another just
11 five-minute break quickly?

12 MS. WOO: Of course.

13 (Whereupon, a recess was held from
14 1:52 p.m. to 1:53 p.m.)

15 MR. FLEMING: We have no additional
16 questions ourselves.

17 MS. WOO: Okay. Thank you. Is there
18 anything else that you need?

19 MR. FLEMING: I don't believe so.

20
21 (Whereupon, at the hour of 1:54 p.m., the
22 proceedings were concluded.)

23 oo0oo
24
25

1 REPORTER'S CERTIFICATION

2
3
4
5 I, Megan Grossman-Sinclair, Certified
6 Shorthand Reporter, in and for the State of
7 California, do hereby certify:

8
9 That the foregoing witness was by me duly
10 sworn; that the deposition was then taken before
11 me at the time and place herein set forth; that
12 said testimony and proceedings were reported
13 stenographically by me and later transcribed into
14 typewriting under my direction; that the foregoing
15 is a true record of the testimony and proceedings
16 taken at that time.

17
18 IN WITNESS WHEREOF, I have subscribed my name
19 this 11th day of November 2024.

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23 Megan Grossman-Sinclair, CSR No. 12586
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4 vs. ENTROPIC COMMUNICATIONS, LLC

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8 the entire transcript of my Deposition taken in
9 the above captioned matter or the same has been
10 read to me, and the same is true and accurate,
11 save and except for changes and/or corrections, if
12 any, as indicated by me on the DEPOSITION ERRATA
13 SHEET hereof, with the understanding that I offer
14 these changes as if still under oath.

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