1
2 UNITED STATES PATENT AND TRADEMARK OFFICE
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4 _____
5 COMCAST CABLE)
6 COMMUNICATIONS, LLC)
7 Petitioner,)
8 vs.)
9 ENTROPIC COMMUNICATIONS, LLC,)
10 Patent Owner.)
11 _____
12
13 Case IPR2024-00441
14 Case IPR2024-00442
15 Patent No. 8,792,008
16 Patent No. 9,825,826
17
18 Deposition of David Lett
19 October 8, 2024
20 9:04 a.m.
21
22 Reported by: Bonnie L. Russo
Job No. 6945802

Deposition of David B. Lett held at:

Banner Witcoff
1100 13th Street, N.W.
Suite 1200
Washington, D.C. 20005

Pursuant to Notice, when were present on behalf of the respective parties:

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C O N T E N T S

EXAMINATION OF DAVID B. LETT PAGE
BY MR. GALLUZZO 5

EXHIBITS

Exhibit 2011 Drawing 162
Exhibit 2012 Drawing 169

PREVIOUSLY MARKED EXHIBITS:

Exhibit 1002 Declaration of David B. Lett US 8,792,008 117
Exhibit 1009 Kamieniecki Reference 56
Exhibit 1010 Konstantinos Reference 136
Exhibit 1011 Renken Reference 144

(Exhibits bound separately.)

P R O C E E D I N G S

(9:04 a.m.)

DAVID B. LETT,

was called for examination by counsel and, after having been duly sworn by the Notary, was examined and testified as follows:

EXAMINATION BY COUNSEL FOR PATENT OWNER

BY MR. GALLUZZO:

Q. Good morning, Mr. Lett.
A. Good morning.
Q. Could you please state your full name for the record.
A. David Lett.
Q. Do you have a middle name?
A. Bradley.
Q. And where do you currently reside?
A. Duluth, Georgia.
Q. Today, we are taking a deposition in two different IPRs. We have agreed to consolidate the deposition for both IPRs. I'm

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1 going to refer to them as the '008 and the '826
2 IPR.
3 Does that make sense to you?
4 A. Sure.
5 Q. I see in front of you, you have
6 copies of your declarations in both of those
7 IPRs and it looks like all the exhibits. We
8 also have copies of all of that, so if there is
9 anything you want to refer to in answering any
10 of my questions today that you don't have, just
11 ask.
12 A. Okay. Thank you.
13 Q. Also, I will do my best to ask you
14 questions generally that will apply to both
15 IPRs.
16 If your answer would be different
17 for one IPR or one patent over the other, can
18 you specify that for me?
19 A. I think so, yes.
20 Q. And if I am asking you about a
21 specific IPR as opposed to the other, I will
22 try to specify as well, but in case I don't, if

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1 my question doesn't make sense, will you ask me
2 for clarification?
3 A. Yes.
4 Q. Have you been deposed before?
5 A. Yes.
6 Q. How many times?
7 A. Maybe -- maybe five or so.
8 Q. Have you testified at trial before?
9 A. I testified in an arbitration, so I
10 don't know if that is considered a trial or
11 not, but I did that.
12 Q. When was the last time you testified
13 either at deposition or in trial?
14 A. Let's see. I can't remember if it
15 was like the latter part of last year or the
16 first of this year. I can't remember, but I
17 did one, you know, within a year.
18 Q. For today's deposition, is there any
19 reason why you can't give full, fair and
20 accurate testimony here today?
21 A. No.
22 Q. Just a couple of ground rules

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1 although you probably know them. I'm going to
2 try to go maybe an hour between breaks, but if
3 you need a break sooner, please feel free to
4 ask.
5 I'm going to try to ask clear
6 questions. If you don't understand my
7 questions, can you ask for clarification?
8 A. Yes.
9 Q. And the official report of the
10 deposition is going to be a written one, so I
11 just ask that we try not to talk over each
12 other and that also you give verbal answers to
13 my questions. Is that okay?
14 A. Yes.
15 Q. All right. I would like to first
16 start by talking about your background. Feel
17 free to review your CV if you need to in
18 answer, but I would like to talk generally
19 about development of set-top boxes or STBs.
20 Are you familiar with the
21 development of set-top boxes?
22 A. Yes.

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1 Q. Do you have experience in that?
2 A. Yes.
3 Q. How much experience?
4 A. 27 years, I think.
5 Q. How many set-top boxes have you been
6 involved in the design of?
7 A. It is hard to say. Many generations
8 of set-top boxes at Scientific Atlanta and
9 Cisco and also satellite set-top boxes at
10 EchoStar for addition at work, and also the
11 business entity of -- it was a separate
12 business in Mexico, I think, and Brazil, that
13 were perhaps joint ventures but basically, they
14 had the dish name.
15 Q. Would you consider that all
16 EchoStar?
17 A. Yes.
18 Q. If I remember right, was that all
19 after 2011?
20 A. I started at EchoStar in 2011, yes.
21 Q. While you were at EchoStar for that
22 first year in 2011, did you work on the

development of any set-top boxes?
A. Let me just double-check --
Q. Please.
A. -- my date here on my resume to make sure I got that correct. I want to make sure it is perfectly accurate.
Yeah, in 2011, I worked on some set-top boxes at EchoStar.
Q. Did you work on the ground-up development of any set-top boxes in that year?
A. I'm not sure what you mean by ground-up development. I participated and led an organization in the design of new products, if that's what you mean.
Q. Sure. What new products did you work on or assist in the design of in 2011?
A. I don't remember what I worked on in 2011 at Cisco, because I did go straight from Cisco to EchoStar. I had a month break.
I don't remember exactly what I was working on my last -- during 2011 at Cisco exactly. Perhaps if I thought about it more, I

could recall.
But at EchoStar, when I first started, I was working on one of the products -- I think the name was 2011 -- 211 I think, and I can't remember exactly the model number. Maybe it was VIP 211.
I can find that if I really needed to, if it's important, but basically, a satellite set-top box that was kind of considered a basic box. It had program guide and, you know, the ability to connect an external hard drive for DVR capability, but, yeah, that was the first project I started on at EchoStar.
Q. Did you work on any other set-top box projects in 2011 at EchoStar?
A. I don't remember. You know, I ran the -- I was in charge of the engineering organization in Atlanta. We had many projects that we were working on simultaneously, so I don't remember exactly, you know, in that time frame, if we were working on other set-top

boxes.
Q. Is it fair if I refer to that product as the 211 product since we don't know the exact name?
A. Yes, and again, I may have the model number wrong and if I do, I apologize.
Q. That's fine. We'll just use it for identification in discussion today.
A. Okay.
Q. You said it was a basic box.
What did you mean when you said that?
A. Essentially, it had the ability to watch and record one channel.
Q. Any other reasons it was a basic box?
A. Well, when I say "basic," I am talking about in comparison to a more elaborate product. It would have, you know, the ability to tune and record, watch and record multiple channels simultaneously and to have built-in DVR capabilities, although this box did support

DVR with an external hard drive, and it did have a program guide and a full user interface -- graphical user interface supporting all the features of the box.
Q. Did the box have analog tuners in it?
A. No.
Q. Did the box have any kind of tuner in it?
A. Yes.
Q. What kind of tuner?
A. Satellite tuner.
Q. How many satellite tuners did it have in it?
A. One.
Q. For satellite feeds, is there a distinction between in-band and out-of-band frequencies?
A. That terminology is not used so much in the satellite world. You know, because the upstream is provided through other means, other than through the satellite in general, like,

through Ethernet port through the Internet.
Q. For the 211 product, did it use that satellite tuner to support DVR?
A. The programs, the videos delivered through the satellite tuner, yes, and you could record that program using the DVR feature if you have an external hard drive connected and, of course, if it was the right compatible hard disk drive.
Q. Did the 211 product support simultaneous watching of a channel and recording of a channel?
A. I don't remember. I don't remember.
Q. Given that it only had one satellite tuner, do you have a guess as to whether it supported it or not?
A. I just -- I don't remember.
Q. Would it have been possible to support simultaneous watch and record with a single satellite tuner?
A. One can watch and record the same channel certainly with that product.

Q. Could one watch and record different channels at the same time with that product?
A. I don't remember.
Q. Do you have any reason to think today that one could, in fact, watch and record different channels at the same time with that product?
A. I don't remember.
Q. So you don't have any reason to think that today?
A. I said I don't remember.
Q. Can you think of any reason -- withdrawn.
Can you think of any way that a single satellite tuner could permit simultaneous watching and recording of different channels?
A. I think it's possible, yes.
Q. How?
A. The tuner could receive more than one channel in the same band, let's call it, that includes more than just one television

program.
Q. Did the tuner in the 211 product permit the reception and selection of more than one channel?
A. Do you mean that -- can I change channels and watch different programs?
Q. Yeah, thank you for the clarification. That wasn't what I intended.
Did the tuner in the 211 product -- withdrawn.
Was the 211 product's tuner able to select and output more than one channel at the same time?
A. I don't remember. I'm sorry.
Q. Did the 211 product have any monitoring functionality?
A. What do you mean by "monitoring functionality"?
Q. Could the 211 product run any diagnostic or wellness checks on the satellite channel reception?
A. Yes.

Q. What kind of diagnostics or wellness checks?
A. There were many, many checks that were supported, you know, having to do with signal level and, you know, which satellites have what performance, reception quality. As far as all the different parameters, I don't remember them all.
Q. Let's talk about reception quality.
How would the 211 product determine reception quality?
A. The tuner would tune to the appropriate transponder or look at the different transponders and different satellites that were supported, and essentially, come up with a metric that indicated how good a quality was being received on those transponders and those satellites.
Q. Because the tuner had to tune to that specific transponder or satellite, would that 211 product permit reception quality determinations and user viewing at the same

time?
A. I don't remember.
Q. During the reception quality determinations, was the 211 product tuner occupied?
A. What do you mean "occupied"?
Q. Was it in use?
A. It was in use to tune to the particular transponder and satellite upon which the signal quality determination was being made.
Q. If a user wanted to watch a channel through a different transponder or a different satellite, could a user do that at the same time?
A. As the same time of -- as what?
Q. As the 211 product's tuner had determined reception quality of a different transponder and different satellite.
MR. QUALEY: Objection to form.
THE WITNESS: I'm a little confused. Would you mind just restating that question.

BY MR. GALLUZZO:
Q. Yes. Well, I will give you some background and then I will ask my question.
A. Okay.
Q. What I am trying to understand is, the 211 product's tuner sounds like it had some functionality, it could give a display to a user of a channel it received from a satellite, it could send a channel to a DVR or at least to a hard drive for DVR purposes, and it could be used to assist in determining reception quality.
So here is my question: Could the 211 product's tuner do any of those three things -- I'm sorry, any two of those three things at the same time?
A. So just for clarification, the tuner by itself could not accomplish any of those things. The software and the processing in the set-top box were needed to accomplish any of those functionalities.
Q. Fair enough. I will ask it a

different way.
Could the 211 product do any two of those three things at the same time?
MR. QUALEY: Objection to form.
THE WITNESS: I think it could show the video to the user and record that program at the same time.
BY MR. GALLUZZO:
Q. The same channel, the same program?
A. That's what I mean, yes.
Q. Let's go a little further back in time to your days at Scientific Atlanta.
Did you work on development of any set-top boxes there?
A. Yes.
Q. How many?
A. It's hard to say, you know. I was there for -- from 1990 until 2011 and before that, I was there from 1982 to 1985, so I would say several generations. I can't remember how many generations of set-top boxes that I worked on and led the development of at Scientific

Atlanta and Cisco, because Cisco bought Scientific Atlanta in 2006.
Q. Do you remember any work on the 2100 series?
A. I remember the 2100, yes.
Q. What is the 2100?
A. Boy, I am going back in my memory archives here.
Actually, it was 2010, right, or -- it was 2010 series? I can't remember.
Q. My understanding is it was the 2100 series but if you remember it as the 2010 series, we can go with that.
A. You know, it's been so long ago. For me to testify as to the features and functionalities for a specific model, I just -- I'm sorry. I just don't feel comfortable with that on the record.
I, of course, know in general about all the set-top boxes and have memories of some of the functionalities, but to answer your question, I would really like to be totally

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accurate and I probably would need to think about it and perhaps reference some documents to refresh my memory.

Q. Do you remember the 2100 or the 2010 series at all?

A. Yes. I remember the number. 2010, I certainly remember, and we may have done a 2100. I don't remember.

Q. What else do you remember about that project?

A. I'm sorry. It's been so long ago, that I just don't have much recollection of the features and functionalities or the project.

Q. Do you remember whether it had a single tuner or more than one tuner?

A. I don't remember.

Q. Do you remember whether it had a CAN tuner?

A. I don't remember. I don't remember.

Q. Do you know what a CAN tuner is?

A. Not exactly. Why don't you define that for me.

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Q. You never heard the term CAN tuner?

A. I might have, but I don't think it's one that is just -- I would use normally or hear normally. I want to make sure I understand what we are talking about, so that's why I asked you to explain it to me.

Q. Do you remember if the 2100 did any channel selection in analog?

A. I don't remember.

Q. Do you remember if the 2100 had any monitoring functionality?

A. I don't remember.

Q. Do you remember if the -- or how long the 2100 took to develop?

A. I don't remember.

Q. Do you remember how many people worked on the 2100 to develop it?

A. I don't remember.

Q. Other than what you've stated here today, do you remember anything else about the 2100?

A. At this moment, I can't really think

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of anything else.

Q. Do you remember the 8300 series?

A. I remember the model number, yes.

Q. What else do you remember about it?

A. It was a DVR. I remember that.

Q. Anything else?

A. Not really the specifics of the features and functionalities of the product.

Q. Do you remember whether it had two in-band tuners?

A. I don't remember.

Q. Do you remember whether it had any monitoring functionality?

A. I don't remember.

Q. Do you remember whether it had silicon tuners?

A. I don't remember.

Q. Do you remember how long it took to develop the 8300 series?

A. I don't remember.

Q. Do you remember who was on the team?

A. I don't remember.

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Q. What set-top box developments do you remember from your time at Scientific Atlanta?

A. I mean, I vaguely remember some of the model numbers and some of the products, but as to the specific model numbers and functionalities, I would need more time to look at documents to refresh my memory I think.

Q. Sitting here today, can you remember the amount of time it took to develop any one particular set-top box for any of your projects prior to 2011?

A. I mean, in a range of maybe six months to a year from first silicon was kind of the, in general, you know, I could be off a little bit on that, but that's kind of the range of time that it took from -- let's call it first silicon, meaning the chip sets are available to release the product for production.

Q. In general, what would you all do in that six to 12 months?

A. Well, many activities, including

building prototypes and writing software and testing the hardware and the software and preparing for factory tests so that the product could run in production. Perhaps there is a lot more, but that's the basic, you know, kind of activities that were involved.

Q. During the six to 12 months of development, was the cost of the product a concern?

A. Yes, the cost of the product was very important so that our customers would find the value acceptable, and it was a very competitive sales experience, let's call it, for us to keep the cost down so that our customers would -- could afford a good price.

Q. Would you consider your role part of the engineering function, generally speaking?

A. Yes, I was VP of engineering at Scientific Atlanta and Cisco.

Q. Was there also a separate role for business and sales?

A. Yes.

Q. Did the business or sales functions increase the cost consciousness that you had in your engineering functions?

A. I mean, it's hard to say. I mean, it was well-understood that we needed to keep costs down as much as possible and that was always the case, and not only for our margins to be, let's call it as good as it could be, but also for competitive sales prices to our customers.

Q. When we're talking about cost consciousness or competitive sales prices, I would like to get a little more precise, so here is my question.

On average, prior to 2011, how much difference in price would create a problem either for your engineering function or for the business and sales functions that were involved?

A. That's a very difficult question to answer.

We had competition that were selling

products or attempting to sell products to our customers, and our customers, in general, let's call it, were the big cable operators, the MSOs, right, like Comcast, Cable Vision, Time Warner, et cetera, and a large part of their decision I think was from which company, whether it be ours or another one, they could purchase many, many, many set-top boxes and achieve their lowest cost for the purchase of those many set-top boxes.

So I have trouble answering, you know, specifically how much cost difference would make a big difference, right? So essentially, our job was to try to produce the lowest cost product that we could for the functionality that we were offering.

Q. I have heard the statement that -- in this industry, pennies matter.

Do you disagree with that statement?

A. I think that's a fair statement.

Q. So going back to your general development experiences, how many people would

be on a team dedicated to developing either a new generation of set-top box or a new model version in that generation?

A. Early on, you know, the teams were smaller. As the boxes and the software and the functionality became more complicated, let's say, and also, the testing requirements and the qualification requirements to provide data for our customers so that they could qualify and approve the purchase of our product increased dramatically over the years.

So, you know, early on, I probably had teams of maybe -- let's call it on the order of ten, right? Later on, the teams were much, much bigger, like, you know, in the hundreds. That's about as precise as I can be because -- that's just kind of the general guideline.

Q. Can you give me any more specificity for the time you mean by "earlier on"?

A. So I started to work there in 1982 and our team was small, and so that's what I

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1 mean by early on.
2 Q. And then when you referred to later,
3 are you talking later in your time at
4 Scientific Atlanta or are you talking later in
5 your career?
6 A. It is kind of the same, right? So I
7 was later -- so I stayed at Scientific Atlanta
8 from '82 through '85 and then I went -- I have
9 to look, '90 through 2011, 1990 through 2011,
10 right?
11 So, you know, at the end of that
12 2011 period, that would be the other end of
13 the -- let's call it progression of the team
14 size to the larger at the later times.
15 Q. Fair to say that a development
16 project for a set-top box in 2009, 2010, 2011,
17 would have hundreds of people or a hundred
18 people?
19 A. At least a hundred, yes.
20 Q. In that later time -- so for the
21 next few questions, I'm going to focus on that
22 later time. I might not say it every time, but

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1 I would like you to focus your mind on that
2 later time, okay?
3 And here is my first question: Was
4 there a consistent problem in the engineering
5 development that always became either the
6 hardest issue in development or the thing that
7 took you all the most time?
8 A. One clarification I want to make --
9 Q. Sure.
10 A. -- on my previous answer.
11 When I said at least a hundred, I
12 probably should have said around 100. Okay.
13 Q. That's fine. That's how I
14 understood your answer.
15 A. Okay. Thank you.
16 Q. Do you need me to reask my question?
17 A. Okay, if you like.
18 Q. Well, I see you have it there in
19 front of you, but I am happy to reask.
20 So again, we are putting our minds
21 in the later time period, let's call it 2009 to
22 2011.

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1 A. Okay.
2 Q. In that period, was there a problem
3 across development of STBs that kept being the
4 most difficult problem to get through, or a
5 problem that took you all the most time to
6 solve?
7 A. I am having trouble identifying "a
8 most difficult problem."
9 Q. Were they all difficult?
10 A. There were many challenges to
11 developing a new product, especially as the
12 complexity was more -- higher complexity.
13 Q. What kind of problems do you
14 remember? Again, that later time period.
15 A. Well, I am having trouble
16 remembering, you know, what exactly in that
17 time period were the issues, so I am having
18 trouble answering the question.
19 Q. Can you think of one problem that
20 springs to mind or complexity that you had to
21 deal with in that later time period?
22 A. I don't remember.

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1 Q. In that later time period, in those
2 -- around a hundred people on the development
3 team, did anybody have Ph.D.s?
4 A. Yes.
5 Q. Who had Ph.D.s generally? By "who,"
6 I don't mean names, I mean functional roles.
7 Which functional roles generally had
8 Ph.D.s on your team?
9 A. One of the team leaders on my team
10 had a Ph.D., and one of the managers on one of
11 my development teams had a Ph.D. That's all I
12 remember I think.
13 Q. Do you remember the name of that
14 team leader or that manager of the development
15 team?
16 A. Yes.
17 Q. What was the name of the team leader
18 that had the Ph.D.?
19 A. Bohdan Prus.
20 Q. Would you mind spelling that for the
21 record if you know how?
22 A. I hope it is correct.

MR. QUALEY: Make a stab at it.
THE WITNESS: I think it is B-O-H-G-O-N -- no wait. It might by B-A --
BY MR. GALLUZZO:
Q. Do you need to write it down?
A. Yeah. It might be B-O-H-G -- B-O-H-G-D-O-N, I think. I might be A-N. Prus, P-R-U-S. Last name is easier.
Q. What was the name of the manager of your development team who had a Ph.D.?
A. Mike Woods.
Q. I don't think we need to spell that one.
Are there any other Ph.D.s on your team that you can remember?
A. I can't remember any others.
Q. Do you remember anybody who had master's degrees?
A. I don't remember who had master's degrees and who did not at this time.
Q. Did at least some of your members of your teams have master's degrees?

A. I think, yes, that's fair to say.
Q. Do you remember what function or roles those people might have had?
A. No.
Q. In those later years, about how many years of experience did your team members have in the industry?
A. I mean, it was varied. Some had very little experience and some had, let's call it 15 years or more. There was a range of experience levels in my organization.
Q. For the folks who had less experience in the industry, what functional roles would they generally have?
A. I don't think we necessarily had different functional roles per se. I think that -- instead, the more complicated or complex functionality, in general, was with the more experienced people. Whereas the simpler tasks, as part of the development were, in general, done by some of the less experienced people. Although, I had some really smart new

grads that were perhaps the exception to the rule.
Q. Did you ever work on the development of any full-band capture set-top boxes?
A. I don't remember.
Q. Do you know anything about the cost of full-band capture set-top box components?
A. Not at this time, I don't remember.
Q. Do you think you did at some point?
A. I probably had a general idea of the cost at some point.
Q. Do you remember whether the cost of a full-band capture tuner was more or less than a silicon tuner?
A. Well, full-band capture tuner is a silicon tuner.
Q. Fair enough. Let me ask it a different way.
Do you know whether the cost of a full-band capture tuner would be more or less than a single-channel silicon tuner?
A. It depends, because the silicon

geometry that was used to produce a particular chip could have a dramatic effect on the cost, so it is hard to make a general statement like that.
Q. Did you ever use any tuners that were not silicon tuners?
A. Yes.
Q. What kind of tuners?
A. It was very much built with analog and RF components, you know, the front-end functionality, including AGCs and mixers, and, you know, filters and all this kind of thing to produce the signal with an output.
Q. You used the phrase or the acronym AGCs. What is that?
A. Automatic gain control.
Q. What did you call those tuners? Is there a phrase or an industry name for them?
A. We called them tuners.
Q. Do they look like sardine cans?
A. I'm not sure I know. I don't even remember what a sardine can looks like.

Q. It's a thin metal box.
A. Some of the tuners that we used were in the -- let's call it rectangular shape with a metal shield built all around it. But the shapes and sizes and so on changed over the years.
Q. That tuner you were just talking about, that type of tuner with the metal shield around it in a rectangular shape, was it also one of those RF analog tuners we were just talking about?
A. At least the one I was thinking about, yes.
Q. Do you remember which set-top boxes or which products that you might have used these types of tuners in?
A. In general, you know, early on, like, and again, my career as I described it, you know, started in 1982 through 2011 at Scientific Atlanta and Cisco. I use them interchangeably because Cisco bought Scientific Atlanta.

I don't remember, again, specific model numbers but early on, we used tuners similar to what I described.
Q. Were you ever involved in a project to develop a set-top box that had a silicon tuner based on the design of a set-top box that had a non-silicon tuner?
A. I'm sorry. I am a little confused.
Each new project was to produce a product with a certain functionality. So I'm not sure I remember an exact example that you refer to in your question.
Q. When was your first project to develop a set-top box that had a silicon tuner?
A. I don't remember.
Q. Can you say whether it was in your time with Scientific Atlanta in the '80s or whether it was in your time with Scientific Atlanta in the '90s and 2000s?
A. It was the second tenure at Scientific Atlanta where we developed products with silicon tuners.

Q. Do you remember when silicon tuners came out in the market approximately?
A. I'm sorry, I would need to review some other materials to find the time frame that you are asking about.
Q. Do you remember whether silicon tuners were more or less expensive than the previous non-silicon tuners?
A. I don't remember if they were cheaper or more expensive at the beginning.
Q. How about around 2011, do you remember if they were cheaper or more expensive than each other?
A. No.
Q. The non-silicon tuners, we talked about some of the components earlier. What was their output?
A. I mean, we probably had different tuners with different outputs through the evolution of the set-top boxes. I mean, at least some of them output an IF signal, and I can't remember what IF signal they were. Some

of them might have output a baseband signal, but I'm having trouble remembering exactly if we implemented products with any of those. I can't remember.
Q. In all cases, would those tuners output an analog signal?
MR. QUALEY: Objection to form.
THE WITNESS: I don't remember.
BY MR. GALLUZZO:
Q. Did you ever work with a non-silicon tuner that output a digital signal?
A. I don't remember.
Q. Did you ever work with a silicon tuner that output a digital signal?
A. Yes.
Q. When?
A. I don't remember.
Q. Was it at Scientific Atlanta?
A. Yes, at Scientific Atlanta, Cisco.
Q. Do you remember what product that was?
A. No.

Q. What were the components of the silicon tuner that output a digital signal?
A. Well, I don't remember all the components. Certainly, there was an integrated circuit that provided some of the functionality of the silicon tuner.
Q. What components were used to digitize the signal?
A. The integrated circuit of the silicon tuner.
Q. What it have an analog-to-digital converter?
A. I think, yes.
Q. Would it have a demodulator?
A. It might or might not.
Q. Would it have a decoder?
A. It might or might not.
Q. You just don't remember?
A. No.
Q. Same is true for the demodulator, you don't remember whether it had one or not?
A. There were many different

instantiations of integrated circuits to support tuning, and so it is hard to say, unless we are looking at a specific chip or integrated circuit what was included in the integrated circuit.
Q. Sticking with the silicon tuner that output a digital signal that you were thinking of, do you know what that signal would output to?
A. So the integrated circuit that supports tuning, in general, outputs a digital signal. However, some integrated circuits that support tuning functionality have other components that process the digital signal and perhaps output an analog signal.
So there are many, many different instantiations of integrated circuits that support tuning and unless we are talking about a specific chip, I can't really say that all integrated chips that support tuning have certain functionalities or not.
Q. My question was what the silicon

tuner that output a digital signal outputted the signal to in the set-top box?
Where did the signal go after the tuner?
A. Did I -- did I talk about any specific problem -- products in my declaration that you can point me to?
Q. No. Just earlier in your testimony, you had said pretty emphatically that you had worked with a silicon-based tuner that outputted a digital signal.
So let me maybe ask to be clear: Do you have any specific recollection of having worked with a silicon-based tuner that output a digital signal?
A. I don't have any specific recollection. Again, there were many products that I led the development of and many different instantiations of products.
Q. I think that clears up the confusion then.
A. Thank you.

Q. So just so I am clear, and only because I think I misunderstood one of your earlier answers, it is true that you do not remember having worked with a silicon tuner that output a digital signal?
You may have, you might not have, but today, you don't know; is that right?
MR. QUALEY: Objection to form.
MR. GALLUZZO: I'll withdraw it.
BY MR. GALLUZZO:
Q. It is true that you do not remember having worked with a silicon tuner that output a digital signal; is that correct?
A. I don't remember the specifics about any particular implementation, so it is difficult for me to remember that detail about the product to answer your question.
Q. Okay. I just -- what I am trying to get at is just clarification, because I think this is a relatively important point, so let me try one more time.
Is it true that you have no specific

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1 recollection of using a silicon tuner that
2 output a digital signal?
3 A. I think that's true.
4 Q. Then we can move on from that.
5 Do you have any specific
6 recollection of using a silicon tuner that
7 output an analog signal?
8 A. I don't have any specific
9 recollection, no.
10 MR. GALLUZZO: Let's go off the
11 record.
12 (A short recess was taken.)
13 BY MR. GALLUZZO:
14 Q. Mr. Lett, earlier today, we talked
15 about the 2100 and the 8300 series set-top
16 boxes, and if I remember right, you didn't have
17 much specific recollection about those. That's
18 not my question.
19 So -- but I wanted to reframe us
20 because I am going to ask you some follow-ups
21 about each of those.
22 So here is my first question: Do

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1 you have any reason to dispute that the 2100
2 series set-top box had tuners that output
3 analog signals?
4 A. I don't remember.
5 Q. I understand you don't remember, but
6 do you have any reason to doubt or to dispute
7 that statement?
8 A. I am not sure I know how to answer
9 the question because I don't remember.
10 Q. Sitting here today, can you give me
11 any reason why that statement might be
12 incorrect?
13 A. I'm not sure I know how to answer a
14 question when I don't remember.
15 Q. So you cannot give me any reason?
16 A. I don't remember.
17 Q. Same questions for the 8300 series.
18 Do you have any reason that you can
19 give me today to dispute that the tuners of the
20 8300 series set-top box output an analog
21 signal?
22 A. I don't remember.

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1 Q. Can you give me any reason why that
2 statement might be incorrect?
3 A. I don't know how to answer the
4 question because I don't remember.
5 Q. And therefore, you cannot give me
6 any reason?
7 A. I cannot think of the answer because
8 I do not remember.
9 Q. In preparing your declaration in
10 these IPRs, you reviewed a lot of material that
11 happened -- or related to things that happened
12 in the late 2000s and early 2010s, right?
13 A. I reviewed a lot of materials, but I
14 don't know if it's fair to -- without looking
15 at them, state the dates of those documents.
16 Q. In coming to the opinions in your
17 declaration, did you consider your own personal
18 experience?
19 A. I looked at the materials as a
20 POSITA would look at the materials.
21 Q. By "the material," do you mean the
22 materials that were included as exhibits or

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1 cited by your declarations?
2 A. Yes, there is a materials considered
3 list, I think is what it's called, in both of
4 the declarations that included a list of all
5 the documents that I reviewed.
6 Q. In addition to those documents, did
7 you consider your own personal experiences?
8 A. I put myself in the persona of a
9 POSITA as defined in the declaration.
10 Q. Did you, as part of that, consider
11 your own personal experiences?
12 A. I don't know how to answer that
13 question. I put myself in the position of a
14 POSITA as defined in the declaration.
15 Q. Well, I think it's a pretty simple
16 question, so I will try to ask it a different
17 way.
18 Yes or no, did you consider your own
19 personal experiences in coming to any of the
20 opinions you are giving in these IPR
21 declarations?
22 A. I would say I worked with people

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that met the criteria of a POSITA at this time, and considered what a POSITA would know at the time and, yes, I think that -- because I worked with people that met the criteria of a POSITA as defined, I am relying on my personal experience of working with and knowing the level of individual and the person as a POSITA.

Q. Other than that, did you rely on your personal experiences to come to any of the other opinions you are giving in these cases?

A. I think that I did not -- perhaps, if there is somewhere in the declaration where you think I did, I would be happy to look at it, but I was careful I believe to consider the knowledge and experience of a working person as a POSITA as defined.

Q. What did you do to refresh yourself on your personal experiences before giving the opinions in these declarations?

A. I'm sorry. I don't remember doing anything to refresh myself about my personal experiences.

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Q. So you didn't review any materials related to your time at Scientific Atlanta?

A. I might have, but one of the materials considered is my CV. That is Exhibit 1003, and so it's in the materials considered list.

Q. Apart from the items cited in your materials considered list, did you consider any other materials from your time at Scientific Atlanta?

A. Not that I'm aware of.

Q. Could you have?

A. I don't know.

Q. Well, for example, if you wanted to be able to answer -- withdrawn.

If you wanted to have more knowledge about the 8300 series set-top box, could you have reviewed materials, prior to submitting your declaration, to give you that information?

A. I mean, I don't know why we would want to know for the purpose of this declaration, knowledge about the 8300 series

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set-top box.

Q. Do you think the 8300 set-top box is irrelevant to these proceedings?

A. I don't know the answer.

Q. Well, if you did want to know about the 8300 set-top box, could you have reviewed materials about it prior to submitting your declarations in these proceedings?

A. I suppose I could have reviewed online documents or whatever, about any set-top box model made by any manufacturer if I wanted to or if I needed to, but I did not, that I'm aware of, for the purpose of this declaration.

Q. Did you review any DOCSIS standards, D-O-C-S-I-S?

A. I'm not aware that I did.

Q. That's because it is not cited on your materials considered list?

A. That's right.

Q. Are you familiar with DOCSIS?

A. Yes.

Q. In 2011, was DOCSIS being used for

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television or for data or for both?

A. I don't remember.

Q. In 2011, did DOCSIS require simultaneous monitoring and processing?

MR. QUALEY: Objection to form.

MR GALLUZZO: I'll withdraw and reask.

BY MR. GALLUZZO:

Q. In 2011, did DOCSIS require simultaneous monitoring and processing of television channels?

A. I don't remember.

Q. Do you know when DOCSIS first started requiring -- withdrawn.

Do you know when DOCSIS standards first discussed simultaneous monitoring and processing of television channels?

A. In order to answer your question, I think I would need to review the DOCSIS standards -- DOCSIS standards.

Q. That is not something you did prior to today in relation to these cases?

A. That's correct.
Q. And just to be clear, you haven't reviewed any DOCSIS best practices documents, correct?
A. I might have at some point in my career.
Q. I'm sorry. Yeah. I will ask a more precise question.
You haven't reviewed any DOCSIS best practices documents in coming to your opinions in these proceedings; is that correct?
A. Not that I am aware of.
Q. For the record, what is -- do you know what the acronym DOCSIS, what it stands for?
A. I don't remember.
Q. Data over cable, do you recall the rest?
A. No.
Q. Okay. Fair enough.
A. I'm curious. What is it?
MR. QUALEY: Why don't we spell the

acronym for the court reporter.
MR. GALLUZZO: We did, yes. D-O-C-S-I-S.
MR. QUALEY: It just wasn't showing up on my screen.
MR. GALLUZZO: Oh, okay.
(Discussion was had off the record.)
BY MR. GALLUZZO:
Q. Let's talk about some documents you did review.
I would like to start with the Kamieniecki reference, which I think is how you pronounce it. But I am curious, how do you pronounce that reference?
A. That sounds close enough for me.
Q. I don't know whether it is accurate but that's what I have in my head, so if I call it Kamieniecki, is that okay with you?
A. Yes.
MR. GALLUZZO: And for the record, it is K-A-M-I-E-N-I-E-C-K-I.
BY MR. GALLUZZO:

Q. The Kamieniecki reference has been previously marked as Exhibit 1009. I believe it's the same number in both proceedings.
(Deposition Exhibit 1009 was previously marked for identification.)
BY MR. GALLUZZO:
Q. Feel free to look at either version.
I would like to clarify some things about Kamieniecki or make sure I understand the reference the same as you do.
So my first question is: Kamieniecki relates to a set-top box, correct?
A. It's entitled: "Monitoring Signal Quality on a Cable Network."
Q. Does it also relate to a set-top box for a cable network?
A. A set-top box is shown in Figure 1.
Q. That set-top box shown in Figure 1 and described in Kamieniecki, that receives an analog carrier signal in the downstream direction, right?
A. Well, as stated in the declaration

and also in Paragraph 4 of Kamieniecki, set-top can receive analog or digital transmissions.
Q. What do you mean by "digital transmissions"?
A. Not an analog channel but a digital channel.
Q. You mean digital information modulated onto an analog signal, right?
A. Of course.
Q. But the signal itself, the carrier signal received by the set-top box is analog, you agree?
A. Yes.
Q. And that's in all cases?
A. I'm not sure what you mean by "all cases."
Q. In all cable set-top boxes receiving a signal from a headend via coaxial or hybrid fiber-coax plant, is it receiving an analog carrier signal?
A. So a digital signal is a signal where the modulation on the cable set-top box

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1 -- excuse me, scratch that -- on the cable
2 system is modulated in some way so as the
3 digital information can be recovered.
4 Q. You're talking about digital
5 content, right?
6 A. Not exactly.
7 Q. In your career, have you ever worked
8 on a cable set-top box that received a signal
9 that was something other than an analog carrier
10 signal?
11 A. I might have.
12 Q. In what case?
13 A. Where a digital signal was received
14 by the set-top box.
15 Q. A physical layer digital signal?
16 A. I might have, yes.
17 Q. In real-world applications?
18 A. I don't remember.
19 Q. Was this a prototype?
20 A. I don't remember.
21 Q. Can a coax cable transmit a physical
22 layer digital signal?

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1 A. A coax cable by itself can't
2 transmit anything.
3 Q. Can a physical layer digital signal
4 be transmitted across a coaxial cable?
5 A. Yes.
6 Q. Does that happen in any cable plants
7 which actually exist?
8 A. Not that I am aware of.
9 Q. In the set-top box of Figure 1,
10 there are listed OOB and IB.
11 What are those?
12 A. As described by Kamieniecki, an
13 in-band tuner and an out-of-band tuner.
14 Q. What is the difference between
15 in-band and out-of-band?
16 A. So there was certain portion of the
17 spectrum that was not considered a normal
18 television channel, and by that I mean, that
19 historically, from the analog days, television
20 content was not transmitted in that frequency
21 range, and as I recall, it's around a hundred
22 and something megahertz that we, you know, the

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1 industry started calling that out-of-band but
2 sort of technically, it's in the middle of the
3 band, right?
4 So television channels, you know,
5 typically started around 54 megahertz and went
6 up over the years to, you know, 550 megahertz,
7 650, 750, 850, 1 gigahertz. But -- so that
8 about a hundred -- I think it's 108 megahertz
9 or something like that, around that section,
10 you know, it just became to be called
11 out-of-band in the industry.
12 Q. What kind of information was
13 transmitted on those out-of-band frequencies?
14 A. There was, you know, it could be
15 anything. A lot of time sit was command and
16 control information and, you know,
17 configuration information. We probably
18 transmitted some content out-of-band, but I
19 don't recall exactly if that was true or not.
20 Q. Would the out-of-band frequency
21 information control pay-per-view?
22 A. So command and control is required

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1 for some pay-per-view functionality so yes, I
2 think to authorize a pay-per-view event, it
3 could come in-band or out-of-band but, you
4 know, sometimes it was out-of-band, sometimes
5 it was in-band, I think, depending on what
6 generation of set-top boxes and so on we are
7 talking about.
8 Q. What other set-top box functionality
9 required command and control?
10 A. I think any set-top box that have --
11 has connectivity to, let's call it the headend,
12 so that, you know, channels are authorized from
13 the headend. You know, we started calling them
14 addressable set-top boxes along the way that,
15 you know, were not just dumb, dumb is not the
16 right word, but boxes that didn't have
17 connectivity were before those that had
18 connectivity.
19 You know, like they used to sell
20 set-top boxes that were, let's call them basic
21 set-top boxes, that essentially, once they were
22 installed at the customer's home, they did what

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1 they did and, you know, were not controlled or
2 commanded by, you know, a server at the
3 headend.
4 Q. When you said -- talk about the
5 channels are authorized, are you referring to
6 premium channels like HBO?
7 A. I think, yes, but also, you know,
8 tiers of channels, so suppose you may have a
9 basic tier and you would be -- you could send
10 authorization information to allow you to watch
11 the basic tier of channels and you may have
12 another authorization to let you watch, let's
13 call it an extended tier of channels and this
14 kind of thing.
15 Q. Without authorization, could a user
16 watch any of those channels, those tiered or
17 extended channels?
18 A. Well, again, we are talking about an
19 addressable set-top box, so in general, they
20 were not supposed to. However, there were some
21 pirating, let's call it, of content, where
22 there were a number of tricks that were used by

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1 would-be cable stealers to watch those signals.
2 Q. Apart from pirating and misusing of
3 devices, if a device didn't have authorization,
4 could it -- could the viewer watch those
5 extended or tiered channels?
6 A. No. Without any authorization, the
7 box should not have shown content. Although,
8 some of the early set-top boxes, you know, that
9 used for example analog scrambling, you know,
10 one could tune to that channel with a
11 cable-ready television, for example, and you
12 could hear the audio.
13 So in some -- so in that instance,
14 you could actually receive some of the content,
15 right? You were not supposed to be able to see
16 the video but, you know, those analog
17 scramblers were not very sophisticated let's
18 say, and sometimes you could make out the
19 picture a little bit as you were watching it.
20 Q. The picture would be scrambled,
21 wavy?
22 A. Right. Or whatever version of

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1 scrambling was used. The picture was obscured
2 in a way so that you shouldn't be able to see
3 it in the clear.
4 Q. In your later time at Scientific
5 Atlanta, were you working on the set-top boxes
6 that were still using those kinds of analog
7 scramblers?
8 A. There was a transition period where,
9 you know, it was all analog and then it was a
10 combination of analog and digital, and then
11 eventually, it was all digital channels. I
12 worked on all of those.
13 Q. Is the frequency range for the
14 out-of-band channels affected by the cable
15 plant just like in-band channels?
16 A. I'm not sure I understand the
17 question.
18 Q. Are you familiar with interference
19 in the cable plant or impairment?
20 A. Sure.
21 Q. Television channels in the in-band
22 frequency range, those are affected by

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1 interference and impairment in the cable plant?
2 A. There is a lot of interference and
3 impairments, to use your words, in the cable
4 plant and would affect all of the frequencies,
5 depending on what the impairment is. It could
6 be, you know, anywhere in the range of the
7 receive spectrum.
8 Q. And that would include the receive
9 spectrum at the out-of-band range?
10 A. Yes, you could certainly have
11 impairments on out-of-band as well as in-band.
12 Q. Are impairments on in-band
13 potentially detrimental to user -- to the user?
14 A. I'm not sure what you mean by
15 "detrimental."
16 Q. For example, could it create a less
17 than optimal viewing experience for the user?
18 A. Yes. Impairments can cause a less
19 than optimal viewing experience.
20 Q. Can impairments on in-band channels
21 or in-band frequency range also cause a less
22 than optimal viewing experience for the user?

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A. I'm sorry. I thought I was just answering that question.
Q. Oh, the previous one, you thought was about out-of-band?
A. No, I thought it was about in-band.
Q. I might have asked a bad question because -- let me clarify.
The question I asked earlier that you answered yes, that was intended to be about in-band, so let me now ask about out-of-band.
Can impairments on out-of-band channels cause a less than optimal viewing experience for the user?
A. I would need to think about that. That sounds like an opinion that I didn't really consider in my declaration.
I probably would like to think about that, rather than answering right now, because I am not sure the implications of just answering on the fly.
Q. Can you agree with me today, that an impairment on an out-of-band frequency range

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could create a problem with authorization of channels?
A. Yes. One could perhaps not receive an authorization or a deauthorization, you know, if it was an impairment on an out-of-band channel that would, an example we just talked about, perhaps not receive an upgrade or downgrade of service tier.
Q. Okay.
A. In other words, they may not receive the signal.
Q. Thank you for completing your answer, and if I -- I didn't mean to cut you off there, so if in the future, you are not finished with an answer and I move on, please just stop me like you did.
Let's go back to Figure 1 of Kamieniecki. We started talking about those in-band and out-of-band tuners marked as 112 and 114.
Would you agree with me that these are analog tuners?

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A. It says: "The set-top box can receive analog or digital transmissions."
Q. Does Kamieniecki disclose whether these are analog or digital tuners?
A. Kamieniecki is talking about the monitoring capabilities. Monitoring the signal quality on a cable network, and -- and he does not restrict it to be analog or digital. In fact, he says it could be either one.
Q. But specifically for the tuners, does Kamieniecki say that those tuners could be analog or digital?
A. Well, so he talks about analog or digital tuning.
Q. Where?
A. Paragraph 4.
Q. Which portion of Paragraph 4 talks about analog or digital tuning?
A. It says: "The set-top box can receive analog or digital transmissions on in-band channels."
Q. And that's your basis for saying

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that the in-band or out-of-band tuners can be analog tuners or digital tuners?
A. That's one of the citations that I used. Perhaps there were more.
Q. Which ones were those?
A. In Paragraph 68, I cite --
Q. I'm sorry, Paragraph 68 of your declaration?
A. Of my declaration. And which -- which declaration are we talking about, '008 or '826?
Q. Whichever one you want. Which one do you have in front of you?
A. Okay. For example, the '826 declaration, Paragraph 68, I cite Paragraph 4 of Kamieniecki and state: "Kamieniecki describes set-top boxes as having in-band tuners for receiving analog or digital transmissions, such as MPEG-2 transport streams and tables according to DVB or digital video broadcast DVB, or" advanced television system standards -- "advanced television systems

1 committee ATSC standards" to be exact.
2 Q. Do you have any other support for
3 your opinion that Kamieniecki discloses both
4 out-of-band and in-band tuners that can be
5 analog or digital, or can you point me to
6 anywhere else in your declaration where you say
7 that more specifically?
8 A. In Paragraph 2, it talks about
9 digital cable systems, but I don't know if I
10 cited that in my declaration or not. Perhaps I
11 did, but I mean, I can read the whole thing and
12 see if I can find it.
13 Oh, wait, hang on. I see something
14 here.
15 On -- yes, on Paragraph 136 of the
16 '826 declaration, I cite Paragraph 2, and
17 Paragraph 2 of Kamieniecki states that he is
18 talking about digital cable systems.
19 There may be more. I can read the
20 whole thing and see if I can find anything
21 else, if you like. Do you want me to do that?
22 Q. Well, you have stated today that

1 Kamieniecki discloses that its tuners could be
2 analog or digital.
3 My question is: What support do you
4 have for that in Kamieniecki? So far, you've
5 pointed to Paragraphs 2 and 4.
6 Do you have any other support?
7 A. I will keep looking if you like.
8 Are you talking about support in
9 Kamieniecki?
10 Q. Support in Kamieniecki.
11 A. Okay. Thank you for clarification.
12 So Paragraph 9 is talking about:
13 "Ping messages may be transmitted from the
14 set-top box to the headend and returned back to
15 the set-top box." That is, in general, a
16 digital signal. And so I need to see if I
17 cited Paragraph 9.
18 Q. I tell you what. We can just
19 focus --
20 A. Yes, I did. In Paragraph 142 of the
21 declaration.
22 Q. To be clear, my question is about

1 support in Kamieniecki. We can refer to your
2 declaration next.
3 A. Okay.
4 Q. Other than Paragraphs 2, 4 and 9, do
5 you have any other support in Kamieniecki to
6 support what you have said today that the
7 out-of-band and in-band tuners can be analog or
8 digital?
9 A. Just for clarification, I was
10 reading the statement in Kamieniecki that talks
11 about: "Set-top box can receive analog and
12 digital transmissions on in-band channels."
13 I don't know if he states anything
14 about an analog transmission on an out-of-band
15 channel. I don't know if that's true.
16 So can you ask that question again,
17 please.
18 Q. Other than Paragraphs 2, 4 and 9 in
19 Kamieniecki, is there any other support in
20 Kamieniecki that you can point me to that would
21 substantiate your claim that the out-of-band
22 and in-band tuners of Kamieniecki can be

1 digital or analog tuners?
2 A. Again, I don't think I stated that
3 the out-of-band tuner can be digital or analog.
4 Q. Okay, let's go back and clarify
5 then.
6 Is it your opinion that Kamieniecki
7 discloses a digital out-of-band tuner?
8 A. So Paragraph 4 of Kamieniecki talks
9 about a second tuner -- well, let me just cite
10 it: "A second tuner can be included in a STB
11 if use of the cable return path is desired or
12 where out-of-band channels will be used for
13 communications between the headend and the
14 set-top box."
15 To me, that indicates that the
16 out-of-band tuner is receiving digital content.
17 Q. Does a tuner that receives digital
18 content make it a digital tuner in your mind?
19 A. Let me clarify my answer. It seems
20 that Kamieniecki is describing digital signals
21 sent on the out-of-band channel. It is
22 certainly possible that one could send analog

content in digital form over a digital channel.
Q. A physical layer digital channel?
A. We are talking about a modulated digital channel that would be demodulated into 1s and 0s.
Q. Maybe this is a terminology question.
When you say "digital channel," do you mean digital data modulated onto an analog signal?
A. In the context of the cable television system that we are talking about, in a channel that's a digital channel, it is modulated in general on a carrier that, when demodulated, generates digital signals. In other words, 1s and 0s.
Q. But prior to demodulation, it is simply digital data carried on an analog signal. Is that what you mean by "digital channel"?
A. It's an analog carrier, so in other words, it is modulated on a certain frequency

to get on the RF frequency that we are interested in transmitting that channel.
Q. So yeah, I think we might just have a terminology crosstalk here, so let me try to back up and see if we can come to an agreement on baselines.
When you've been talking about a digital tuner and that Kamieniecki discloses a digital tuner, do you mean a tuner which tunes in a digital domain or do you mean a tuner which tunes a signal that carries digital content?
A. I'm sorry. I don't understand what you mean by "a signal that tunes in a digital domain."
Q. Do you understand the difference between a signal and content of a signal?
A. I think so.
Q. Content can be digital, but the signal can still be analog.
Do you understand that?
A. I mean, even digital signals are

analog, so they are above or below a certain voltage level to indicate a 1 or a 0.
Q. Do you understand when I -- okay, let me say it this way.
When I am talking about analog signals, I am talking about signals that have amplitude and phase.
Can we agree on that?
A. I'm sorry. I don't understand the question.
Q. What is amplitude? You know what that is, right?
A. Yeah. It's the -- the basic level of -- of something.
Q. And you know what phase is?
A. Yes.
Q. And analog wave forms have amplitude and phase?
A. I guess so, yes.
Q. Digital wave forms do not have both amplitude and phase?
A. They have amplitude and phase.

Q. Okay. We will come back to that.
A. Okay.
Q. Do you agree with me that the in-band and out-of-band tuners of Kamieniecki are single channel tuners?
A. Yes. In fact, Kamieniecki describes, as is shown in Figure 2, the in-band tuner being used to tune different channels in the channel map so as to gather channel statistics on each channel one by one, and there is a loop where he explains and shows, stepping through the channels and gathering that statistics information such as error counts, signal levels, et cetera.
Q. How wide is the channel that is output by the in-band tuner of Kamieniecki? How many megahertz wide?
A. I don't know if he says. Perhaps he does, but I don't know.
Q. How wide is the typical in-band tuner's output prior to 2011 -- withdrawn.
How wide is the typical television

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1 channel prior to 2011?
2 A. Well, in North America, it is
3 generally 6 megahertz wide.
4 Q. Any reason to doubt that the in-band
5 tuner of Kamieniecki has a 6 megahertz-wide
6 channel output?
7 A. A POSITA would certainly understand
8 that that's one of the possibilities.
9 Although, you know, he talks about DVB and ATSC
10 and one could, you know, be in a different
11 country and have a different, you know, channel
12 width, channel bandwidth.
13 Q. What is the channel bandwidth for
14 DVB?
15 A. I don't remember. Sorry.
16 Q. Is it more or less than 6 megahertz?
17 A. I don't remember.
18 Q. What is the channel bandwidth for
19 ATSC?
20 A. I don't remember. I probably need
21 to look at the spec just to make sure I don't
22 give an answer that is incorrect.

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1 Q. Do you remember whether it's more or
2 less than 6 megahertz?
3 A. I would need to look at the spec.
4 Q. How about the out-of-band tuner?
5 Would a POSA understand it outputs a 1.5
6 megahertz-wide channel?
7 A. I don't know that there was a
8 standard about an out-of-band channel being a
9 certain width.
10 Q. During your time at Scientific
11 Atlanta, how wide would the out-of-band tuners
12 in your set-top boxes output?
13 A. I don't remember.
14 Q. Do you have any reason to doubt that
15 it was 1.5 megahertz?
16 A. Might have been. I don't know.
17 Q. In general, how wide of a channel
18 bandwidth does an out-of-band tuner output
19 prior to 2011?
20 A. I don't remember.
21 Q. How wide would a POSITA understand
22 the out-of-band tuner of Kamieniecki to output?

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1 A. I don't remember.
2 Q. Is Kamieniecki a DOCSIS reference?
3 A. What do you mean?
4 Q. Is it a cable modem?
5 A. He is talking about a set-top box.
6 He may talk about a cable modem, but I don't
7 recall.
8 Q. And if we could assume that he
9 doesn't talk about a cable modem, is
10 Kamieniecki disclosing a cable modem?
11 A. Did I render an opinion on that in
12 my declaration?
13 Q. I don't believe so. But you did
14 review it, so I am asking you whether you think
15 it disclose a cable modem to a person of
16 ordinary skill in the art at the time.
17 A. So I would think the way a POSITA
18 would read Kamieniecki is that, one can monitor
19 the signal on a cable network, and I don't know
20 that a POSITA would preclude there being a
21 cable modem.
22 Q. Does Kamieniecki disclose any cable

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1 modem capabilities?
2 A. I don't remember.
3 Q. Kamieniecki doesn't disclose a
4 DOCSIS tuner, does it?
5 A. I don't remember.
6 Q. Kamieniecki doesn't disclose that it
7 receives DOCSIS data?
8 A. I don't remember.
9 Q. Kamieniecki doesn't disclose that it
10 has to comply with DOCSIS standards?
11 A. I don't remember.
12 Q. Well, the reference isn't very long,
13 so I would like you to review and let me know
14 whether Kamieniecki is or is not a DOCSIS
15 reference.
16 A. What do you mean by "DOCSIS
17 reference"?
18 Q. A reference that has to comply or
19 could comply with DOCSIS standards.
20 A. So Kamieniecki is talking about
21 receiving a signal and looking at channel
22 statistics, such as error count, signal levels,

and so on with that signal, and then tuning to another signal and receiving channel statistics, error count, signal quality levels and storing all of those in NVM and then, you know, so essentially monitoring the signal quality on multiple channels.

It is not discussing the detailed implementation of the tuners. It is basically saying it could be analog or digital with an in-band tuner, as we talked about.

And so looking at this patent of Kamieniecki, the scope is about monitoring the channel, and so I don't know if it mentions DOCSIS or not, but to me, that is out of scope for what we are talking about in Kamieniecki. We are talking about monitoring signals.

Q. When you say "it is out of scope," are you testifying that -- whether Kamieniecki is or is not a DOCSIS reference is out of scope of the reference?

MR. QUALEY: Objection to form.

MR. GALLUZZO: Withdrawn.

BY MR. GALLUZZO:

Q. When you say "it is out of scope," can I take that to mean that Kamieniecki or that DOCSIS is out of the scope of the disclosure of Kamieniecki?

A. In my declaration, I didn't talk any about DOCSIS related to Kamieniecki, I don't think.

Q. I think I agree with you there.

A. So I think what you are asking me for is to render a new opinion with your question, and I would really not feel comfortable doing that on the fly without thinking about it more.

Q. I don't know whether I am asking you to render a new opinion or not, but my understanding from reading your declaration is that you understood Kamieniecki well enough to opine that patent claims issued by the U.S. Patent Office should be rendered invalid over that reference and others.

I assume that you came to quite a

bit of reflection on that point and reviewed the reference thoroughly, and that's why I am asking you questions about what the reference means to a person of skill in the art.

So here is my question: In 2011, would a person of skill in the art understand Kamieniecki to be a DOCSIS reference? Yes or no.

MR. QUALEY: Objection to form.

THE WITNESS: It sounds like that is a new opinion that I did not consider in my declaration. I don't feel comfortable answering that.

BY MR. GALLUZZO:

Q. So you are unwilling to answer that question today?

A. I am willing to answer the question, but I need more time to study that to answer that question.

Q. What would you need to study?

A. Well, I can read Kamieniecki end to end.

Q. Please do.

A. Okay. So in Paragraph 2 of Kamieniecki: "Digital cable systems can make the use of a cable return path and a cable modem in the set-top box to manage all downstream and upstream traffic in the set-top box."

So it's talking about cable modem in Paragraph 2.

Q. In the background of Kamieniecki?

A. That's right, Paragraph 2 of Kamieniecki.

Q. Does Kamieniecki disclose anything like that in its summary of the invention or detailed description or claims?

A. I will keep reading. I just got to Paragraph 2 so far.

So I believe that every time Kamieniecki uses the word "set-top box" or the acronym "STB," it includes by reference the statement that cable modem is in the set-top box per Paragraph 2.

Q. You read that from the sentence that starts: "Digital cable systems" in Paragraph 2?

A. Right. "Digital cable systems can make use of a cable return path and a cable modem in set-top box,"
and thus -- excuse me, "to manage all downstream and upstream traffic to the set-top box."

So to me and I think to a POSITA, one would read that sentence and include a cable modem in every set-top box potentially, in the patent -- that is mentioned in the patent.

Q. Does Kamieniecki disclose a tuner for receiving such data, such as Internet data through a cable modem?

A. I don't think so. I can look.

Q. Please.

A. Okay. We can spend the whole day searching for things in the patent.

Do you mean -- is your question,

does Kamieniecki disclose receiving Internet data? Is that what you mean?

Q. Do you understand how a DOCSIS -- a DOCSIS enabled set-top box works?

A. In general, yes.

Q. Do you understand that it has to have a separate DOCSIS tuner?

A. Not necessarily.

Q. In which case does it not have a separate DOCSIS tuner?

A. So in the case of full-band capture.

Q. Does Kamieniecki have a full-band capture reference?

A. I don't think it talks about a full-band capture. In fact, it does not, because it describes taking a tuner and cycling through all the different channels to receive channel statistics.

And so there was a need, I think, or a market desire to be able to not only monitor more than one channel but also to watch more than one channel, so Kamieniecki is somewhat

limited, that it is talking about one channel -- excuse me, one tuner that is cycling through all the different frequencies.

MR. GALLUZZO: Objection. Nonresponsive starting with the words "and so there."

THE WITNESS: I'm sorry?

BY MR. GALLUZZO:

Q. It's for record-saving purposes, not for you.

A. Okay. I didn't understand what that meant. Thank you.

Q. So other than full-band capture, you do understand that a DOCSIS enabled set-top box has to have a separate DOCSIS tuner?

A. Perhaps there were other ways for a DOCSIS enabled set-top box to do tuning. I don't know.

Q. Other than having a separate DOCSIS tuner or as part of full-band capture, can you tell me any other way for a DOCSIS enabled set-top box to do tuning?

A. Do you want me to invent one?

Q. I am asking you what existed in 2011.

A. Oh. I don't remember.

Q. So you can't think of one?

A. I don't remember.

Q. You also understand, because you know how DOCSIS works, you understand that the DOCSIS tuner essentially tunes to a specific channel frequency as a pipe, right?

A. It can, yes.

Q. And if you have to change that channel frequency for some reason, it's quite complex, and you have to obtain new permissions and reconnect to that same pipe, correct?

A. I think I would be more comfortable if I had the DOCSIS spec to go through to make sure that your exact statement is correct.

Q. Do you have any reason, sitting here today, to dispute my characterization?

A. I don't know if I have any reason.

Q. Given that, because Kamieniecki

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1 discloses only one in-band tuner and one
2 out-of-band tuner, would you agree with me that
3 Kamieniecki does not disclose a DOCSIS tuner?
4 A. No.
5 Q. Why not?
6 A. Because as I have stated in
7 Paragraph 2, Kamieniecki is stating the cable
8 modem can be in the set-top box.
9 MR. GALLUZZO: Let's go off the
10 record.
11 (A short recess was taken.)
12 BY MR. GALLUZZO:
13 Q. Mr. Lett, before the break, we were
14 talking about Kamieniecki. I would like to go
15 back to that, please.
16 Does Kamieniecki have an
17 analog-to-digital converter?
18 A. It could. It doesn't talk about the
19 details of the tuners, other than they could be
20 digital or analog.
21 Q. Is there a disclosure in Kamieniecki
22 that supports your statement that it could have

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1 an analog-to-digital converter?
2 A. Not that I'm aware of.
3 Q. If it did have an analog-to-digital
4 converter, where would it be?
5 A. I mean, it could be inside that
6 set-top box, Box 110.
7 Q. Would it be on the signal path prior
8 to the tuners?
9 A. Could be, yes.
10 Q. Where else could it be?
11 A. Well, you know, the set-top could
12 have the capability to receive a baseband input
13 signal and it could have an ATD converter on
14 that. It could also, in the circuitry for
15 processing any signal, use digital signal
16 processing. And in order to use digital signal
17 processing would require an analog-to-digital
18 converter.
19 Again, the patent is talking about
20 monitoring the signal quality. There is a lot
21 of things in the set-top box that are not shown
22 in this picture, because it is talking about

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1 monitoring the signal quality on the cable
2 network, you know.
3 For example, it doesn't show a video
4 output, and so the point is that it's not
5 really talking about the guts of the circuitry.
6 It is talking about the monitoring of the
7 signal quality on a cable network.
8 Q. Earlier, you had testified that your
9 read of Kamieniecki is that it could receive a
10 digital signal.
11 Do I have that right?
12 A. Yes, it can receive a digital
13 signal.
14 Q. And if Kamieniecki is receiving a
15 digital signal, must it also have an
16 analog-to-digital converter in the set-top box
17 somewhere?
18 A. So let's define what is -- what
19 digital signal are you talking about?
20 Q. What did you mean when you used the
21 phrase "digital signal" earlier today?
22 A. I would need to look back at the

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1 record to see exactly what that was.
2 Q. What does that term mean to you when
3 you use it generally?
4 A. I think a digital signal, in
5 general, outputs 1s and 0s.
6 Q. Can you tell me anything about the
7 physical characteristics of the digital signal
8 as you understand that term?
9 A. So generally, digital signals have a
10 DC voltage that over time varies between a high
11 level and a low level. Let's call it 0 to 5
12 volts for example, although it doesn't have to
13 be, and where a 1 is the 5 volts and the 0 is
14 the 0 volts.
15 Q. So I have it clear, it's your
16 testimony that Kamieniecki's set-top box could
17 receive such a digital signal?
18 A. Well, you asked me what is a digital
19 signal in general.
20 Q. So the way we started was, you
21 confirmed that Kamieniecki could receive a
22 digital signal.

I am trying to understand what you mean when you testified that Kamieniecki, "yes, it could receive a digital signal."

A. So Kamieniecki says a set-top can receive analog or digital transmissions.

Q. Yes, and earlier, five questions or so, you answered that Kamieniecki could receive a digital signal.

My question is: What did you mean when you said "digital signal"?

A. So a signal that, after processing, or after, let's say -- not processing, after demodulation, outputs 1s and 0s to the next stage of the circuitry, I think is what Kamieniecki is referring to.

Q. Is that the same as the digital transmission that Kamieniecki is referring to?

A. I think so, yes.

Q. And if Kamieniecki is receiving such a digital signal or digital transmission, would it require an analog-to-digital converter somewhere in the set-top box?

A. One would generally need an analog-to-digital converter to receive a digital signal that outputs 1s and 0s.

Q. The other option in Kamieniecki that you referred to earlier is an analog transmission.

How does an analog transmission differ from a digital transmission as we were just talking about?

A. So after demodulation, the analog signal would perhaps output a waveform that is not just 1s and 0s as I described with one voltage level versus another voltage level, you know, binary data. In the case of a digital signal, it would output an analog waveform after demodulation.

Q. And if Kamieniecki is receiving such an analog transmission or analog signal, does it also require an analog-to-digital converter somewhere in the set-top box?

A. It doesn't require it, but you could certainly use an analog digital converter and

digitize the analog signal so that the analog waveform was represented in binary digital words.

Q. That would be a step after demodulation?

A. It could be a lot of different places, so not necessarily. If you want to use digital signal processing techniques, right, which -- a lot of the classic analog processing circuitry, you know, was being done with digital signal processing, one would generally need an analog-to-digital converter in order to process that traditional analog signal using digital circuitry.

Q. There were a couple of terms we were using earlier as well: Digital tuner and analog tuner.

When you were using the phrase "digital tuner" earlier, what did you mean?

A. So I think in the context of Kamieniecki, what he is talking about is, you can receive either analog or digital

transmissions as he states. So it's digital transmissions in the case of a digital tuner.

Q. So a digital tuner would be a tuner that receives a digital transmission. Is that what you are saying?

A. Well, let me take that back.

Q. Let me withdraw the question.

All I am trying to do is understand when you say "digital tuner" what you mean, and then I will follow up and ask you when you say "analog tuner" what you mean.

So first question: When you have used the term "digital tuner" today, including in relation to Kamieniecki, what you meant.

A. So I think as I stated earlier, the output of what is defined -- I am not here to define terms, but for what we are talking about here is a tuner that receives a signal and it outputs binary data, 1s and 0s.

Q. That's a digital tuner as you have been using the term?

A. Sure. We could call it that.

Q. Can I then take it to mean that an analog tuner is a tuner that receives a signal and outputs a waveform?

A. I think we can -- yeah, we can define it that way if you like.

Q. Okay.

A. You know, but in general, you could -- there is a lot of different ways to define analog and digital tuner but for the context -- to a narrow context of this discussion, right? I am okay with defining it as we just talked about.

Q. And are those the two ways that you have understood those terms as you have testified here today about those two terms?

So, like, if you used the term "analog tuner," I can take it to mean that that understanding is what you understood, or when you have used the term "digital tuner," I can take the previous understanding you just testified to as being what you meant.

Do you follow what I am saying?

A. Yes, but I, you know, we've talked about a lot of different things, right? So until now, we haven't really defined a term for the sake of this discussion, right?

And as I said earlier, you know, digital tuner could mean an analog tuner that outputs -- that outputs a waveform that is analog, that's implemented with digital signal processing circuitry, right? And then it has a D-to-A on the other end, right, or not.

So I don't think until now, we defined, you know, we want -- I think you are wanting us to define a term, right?

Q. What I am wanting to do is to try to get on the same level with you in term usage, so I am trying to understand, as you have used the digital tuner term today, I think we have come to an understanding of what you meant.

A. I think that, until the point of just a few minutes ago where we defined -- where we agree, okay, let's call this the definition, right, of a digital tuner. Until

we defined that, I may not have been talking about the digital tuner in the way that we just defined it as.

Q. How else would you have been talking about a digital tuner?

A. I mean, I suppose I could look back at the record and read them all and see which one, you know, what we were talking about.

Q. Is there another way that you use the term "digital tuner" to mean something else other than a tuner that receives a signal and outputs a series of 1s and 0s?

A. I think I just answered that question a minute ago.

Q. And I am trying to get clarification so we don't have to go back and look at every other use of the term.

Other than that usage, is there another way you have used the term "digital tuner"?

A. I don't remember. I will have to go back and look at the record. Unless you want

to just say, let's start from the point where we just defined it, I probably need to go back and look at the record to answer your question.

Q. Can you think right here, today, of a way that you have thought of the term "digital tuner" to mean something different than what I just said?

A. I think I answered that just a few minutes ago when I described the implementation of a tuner using digital circuitry.

Q. Can we then assume a broader definition, that when you have used the term "digital tuner," it is a tuner that is using digital circuitry?

A. I am okay with defining it however you want to. What do you prefer?

Q. I think we have been kind of all over the map today on digital analog, and what I am trying to do rather than go and recount all of our previous testimony is understand what you have meant when you said those words.

A. Well, again, what I have meant was

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1 before we attempted this definition. So I
2 don't -- I will have to look at all those to
3 see what I meant.
4 Q. You can't remember what you meant?
5 A. We have been all over the map and I
6 don't think I can remember them all.
7 Q. Okay. During the break, did you
8 discuss the substance of your testimony with
9 counsel or with anybody else?
10 A. No.
11 Q. You will get a chance at some point
12 to review the testimony for an errata.
13 Do you know what that is?
14 A. Yes.
15 Q. But rather than going through all of
16 our testimony from here today, can you give me
17 any definition for a "digital tuner" that
18 wouldn't be a tuner that uses digital circuitry
19 to output 1s and 0s?
20 A. Yes.
21 Q. What's that?
22 A. As I answered a few minutes ago, it

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1 could be a tuner that is meant to tune analog
2 channels and uses digital circuitry for
3 processing those analog channels. And has a
4 D-to-A converter that converts it back to
5 analog on the output.
6 Q. Meaning, it would have an
7 analog-to-digital converter on the front end,
8 do some processing and revert back to analog?
9 A. Correct.
10 Q. Some of that processing was done
11 with digital circuitry?
12 A. When -- what do you mean by "was
13 done"?
14 Q. Some of that processing in the -- in
15 the tuner is done with digital circuitry?
16 A. You asked me what could be done, and
17 I don't know what you mean by "what was done."
18 Q. Okay. Let's go through all the
19 potential definitions of a digital tuner that
20 you can think of.
21 First one I have is, a tuner
22 receives a signal, outputs 1s and 0s.

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1 Do you agree that that is a
2 potential definition for a digital tuner as you
3 might have used it today?
4 A. Yes, but I don't think that I am
5 here to define terms. I think you are the one
6 that wants to define the term and I am
7 basically, you know, letting you choose which
8 definition that you want to use going forward.
9 Q. That's not what I am doing. What I
10 am trying to do is understand what you mean
11 when you say certain things, and so we are
12 going to go over all potential definitions you
13 could have used.
14 Do you agree that the first one, one
15 of those potential definitions that you could
16 have used, what you could have thought in your
17 head as you said digital tuner, is a tuner that
18 receives a signal and outputs 1s and 0s?
19 A. Yes.
20 Q. The second one is a tuner that
21 receives a signal and has circuitry that
22 performs digital processing.

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1 Do you agree with that?
2 A. No. I think I said that performs
3 digital signal processing.
4 Q. Thank you for clarifying.
5 Second is a tuner that receives a
6 signal and has circuitry that performs digital
7 signal processing; is that correct?
8 A. Yes.
9 Q. Are there any other ways that you
10 might have used the term "digital tuner" here
11 today?
12 A. So Kamieniecki doesn't, I don't
13 think, get into the details about how the
14 signal is processed. It is possible that
15 Kamieniecki's tuner blocks, like 112 for
16 example. It could include some additional
17 processing depending on whether the signal is
18 analog or digital, for an analog or digital
19 channel, and again, he says that the tuner is
20 -- can receive analog or digital transmissions
21 and then we talk about signal monitoring.
22 So it's possible that, you know, his

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1 tuners, there's some other definition other
2 than the two we talked about.
3 Q. While it's possible in your mind
4 that Kamieniecki might be describing some other
5 type of tuner, at least in the way that you use
6 the term "digital tuner," can you think of
7 another way that you might have used it other
8 than the two that we have already gone over?
9 A. I would like more time to think
10 about that rather than rendering a new opinion
11 that that's all there is, right? There might
12 be other definitions that I really haven't
13 thought about, because I thought I was going to
14 be testifying on my declaration. None of this
15 stuff is in my declaration.
16 Q. To be clear, I am not asking you for
17 a new opinion. I am asking you about what we
18 have talked about here today. So let me ask a
19 follow-up.
20 Here it is: Sitting here today, can
21 you think of another way to describe a digital
22 tuner in a way that you might have used it in

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1 your testimony today, than the two we already
2 talked about?
3 A. I can't think of any other
4 definitions of a digital tuner that I might
5 have used today, except those two. Perhaps I
6 have, but I don't remember.
7 Q. For the record, what were you doing
8 in the ten minutes or so between the question
9 and the answer?
10 A. I was looking at my previous
11 testimony.
12 Q. On the realtime transcript?
13 A. Yes.
14 Q. Okay. With digital tuner in hand,
15 now let's go to analog tuner.
16 Again, the goal here is to try to
17 understand what you might have meant when you
18 used that term today.
19 So what is the first description of
20 what an "analog tuner" is in the way you might
21 have used it today?
22 A. In the context of Kamieniecki,

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1 analog tuner is generally a tuner that receives
2 an analog video signal.
3 Q. Are there any other understandings
4 of what that term means, separate from
5 Kamieniecki, in a way you might have used that
6 term today?
7 A. I don't think so.
8 Q. In your understanding, what is an
9 analog tuner output? And just -- what does an
10 analog tuner output? I'm not sure if I said
11 that correctly.
12 A. Well, sometimes it outputs an IF
13 signal that is -- let's call it a lower
14 frequency signal than the channel that was
15 received to get it in a band that is
16 appropriate for processing at the next stage.
17 Q. Is the output of an analog tuner
18 also an analog video signal?
19 A. It could be, but not necessarily.
20 It could be an IF signal representing the
21 analog signal that was modulated now at an IF
22 frequency as opposed to an RF frequency.

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1 Q. Other than an IF signal or an RF
2 analog video signal, are there any other
3 potential outputs for an analog tuner as you
4 understand that term?
5 A. I mean, one could output the
6 baseband signal I suppose from an analog tuner.
7 Q. Would that baseband signal be an
8 analog signal?
9 A. Yes, I think so.
10 Q. Going back to Kamieniecki, does
11 Kamieniecki have any decoders?
12 A. It refers to, the in-band tuner
13 receives MPEG-2 transport stream and that's in
14 Paragraph 4, and it has -- it is a set-top box,
15 so if one were to receive MPEG transport
16 streams and be a set-top box, a set-top box
17 generally is used to recover and display video
18 to a television. It would have an MPEG
19 decoder.
20 Q. Where would that MPEG decoder be?
21 A. In that box, it's labeled set-top
22 box.

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Q. Can you describe for me any more specifically where it would be?

A. So, in general, you know, a set-top box receives the signal and processes it in such a way that it could be delivered to the MPEG decoder, so that the MPEG decoder could then decode the MPEG transport streams and process the video so that it could be displayed on the screen, and that could be either outputting it in a digital form like an HDMI or firewire or something like that, or it could output with a digital encoder, an analog signal to a, you know, baseband output which would go to an analog TV or it could remodulate the video onto a channel.

It was typically done in the United States to output the video on Channel 3 so that the cable-ready television could tune to Channel 3 -- 3 or 4 usually, Channel 3 or 4 typically, so the cable-ready TV could display the video.

Q. In relation to the components shown

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on Figure 1 of Kamieniecki, can you tell me any more specifically where inside the set-top box the decoder would be?

A. So the -- so it shows the boxes connected together right at the in-band tuner and the module -- excuse me, the monitor, 116. You would have a similar box that would come from the output of the in-band tuner that would process the video so it could be displayed.

Q. Where would that similar box sit in relation to the monitor?

A. Probably -- well, again, there is no line shown between the in-band tuner and the monitor, but it would probably be -- the output of the in-band tuner would go to that box.

Q. Go to the decoder?

A. Go to -- the box containing the decoder functionality.

Q. And then would it go to the monitor?

A. No. Well, it could. So -- so he is talking about that you could monitor signals, right, so -- and he talks about that -- I am

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waiting for an idle state to monitor a channel, and the way I read Kamieniecki is that -- that tuner is either used for displaying video, but -- or, if it is not being used for displaying video, meaning it is in an off state, the set-top box is turned off and nobody is watching video, right, or wants to watch video, the monitoring occurs.

So instead of that tuner providing signals to a box that contains, like an MPEG decoder, for example, for displaying video, during the time that it's off, the output of that tuner would be -- would be collecting channel statistics. It would tune to a channel, collect channel statistics, error count, signal level, et cetera, and it would then store it in the memory and it would do that to the next channel. It would gather statistics, tune to the next channel, gather statistics, each time storing the results in NVM.

So until somebody turned the set-top

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box back on, meaning that the set-top box is no longer in an idle state, the channel monitoring would be going on, scanning through the channels one by one.

Q. When the set-top box is off or in the idle state and doing the monitoring as you described, would the output of either of the tuners go through the decoder or the box that contains the decoder as you called it?

A. Kamieniecki doesn't address that. It could, but I think it's not, because I think -- I think that in general, Kamieniecki is describing that you are either watching television on that channel it's tuned to and that's when it's in the on state, or you are monitoring the channel, collecting channel statistics when it is in the idle state or the off state.

Q. So when it is in the idle or off state, is the decoder or the box that contains the decoder being used at all?

A. It could be, but he doesn't address

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that I don't think in this patent.
Q. And where in the disclosure of Kamieniecki does your understanding of the use of a decoder and where the decoder might be come from?
A. Kamieniecki doesn't show the decoders. What he is talking about, as I described previously, is that you can receive an MPEG-2 transport stream and a POSITA would totally understand that if I receive an MPEG transport stream, that there must be a decoder in the set-top box.
There's a lot of other things that must be in the set-top box other than the small amount of blocks that are shown in this diagram and -- for the purpose of describing monitoring signal quality on a cable network.
Q. And your reference to the MPEG-2 transport stream and therefore your understanding of what a POSITA would think about decoders from that, is based on Paragraph 4 of Kamieniecki; is that right?

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A. At least Paragraph 4. There might be others but that's the one that I see quickly.
Q. Sitting here today, can you think of any others?
A. There may be others, but I don't see them off the top of my head.
Q. Okay. I would like to go back to that discussion we just had about idle.
Is it your understanding that Kamieniecki has to wait for the set-top box to be idle or off before it can monitor?
MR. QUALEY: Objection to form.
THE WITNESS: Well, I think that, you know, he is talking about this one embodiment as illustrated in Figure 2 but, you know, he says that: "Any modification and adaptations might be made thereto without departing from the spirit and scope of the invention as set forth in the claims."
BY MR. GALLUZZO:
Q. That comes from Paragraph 26?

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A. Correct.
Q. Is that the understanding you had prior to issuing your declarations in these cases?
A. Well, I had the patent, yes. The materials considered, the Kamieniecki patent.
Q. Maybe that was a bad question. Let me try again.
Isn't it true that it was your understanding when you issued the declarations in these cases that Kamieniecki had to wait for idle before it could monitor?
A. I don't think it had to wait for idle. The embodiment as described was for idle, and it has the statement that you can adapt it and modify it without departing from the spirit and scope of the invention as set forth in the claims.
Q. So I've got the '008 declaration in front of me.
If you want to look at the '826, that is probably in there as well. I'm just

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not going to have the exact paragraph.
A. Let me just switch to the '008 then.
Q. Sure. Could you please turn to Paragraph 149.
A. 140?
Q. 9. 149.
MR. GALLUZZO: For the record, this is Exhibit 1002.
(Deposition Exhibit 1002 was previously marked for identification.)
MR. QUALEY: We are looking at the '008 version?
MR. GALLUZZO: Correct. In Case 441.
THE WITNESS: Okay. I'm on that page.
BY MR. GALLUZZO:
Q. About halfway down the page, you will see a sentence that starts: "As discussed."
A. Okay.
Q. It says: "As discussed above,

1 regarding Limitation 1E and the description of
2 Kamieniecki, Kamieniecki waits for an idle
3 period because its STB 110 has only one IB
4 tuner."
5 Do you see that?
6 A. Yes.
7 Q. Do you agree with that statement?
8 A. I do agree. The context here is, we
9 are talking about the desire to monitor all
10 channels and we are talking about the
11 embodiment that Kamieniecki described uses one
12 tuner, and so the paragraph is in the context
13 of, we need more tuners so that we can monitor
14 more channels and watch more video and that's
15 what this is about.
16 Q. You wrote this statement?
17 A. I did.
18 Q. You chose the words to put in that
19 statement?
20 A. Right.
21 Q. You didn't leave any out that you
22 wanted to put in?

1 A. I wrote the statement.
2 Q. It was truthful when you wrote it?
3 A. I haven't finished answering yet --
4 the other question.
5 So Kamieniecki states that
6 information related to the signal quality,
7 in-band and out-of-band could be monitored, and
8 so what I am talking about in this section that
9 you referenced is, that we would like to have
10 more in-band channels so that we could do more
11 monitoring and more channel watching or
12 recording or whatever.
13 Q. The statement: "Kamieniecki waits
14 for an idle period because its STB 110 has only
15 one IB tuner" was truthful when you wrote it,
16 isn't it?
17 A. That's right.
18 Q. And you didn't leave out any words
19 that you wanted to put in that statement?
20 A. I am talking about the in-band
21 tuners, so no.
22 Q. If you flip to the last page, 124 of

1 the declaration, that's your signature signed
2 on February 16, 2024?
3 A. Yes, it is.
4 Q. On the previous paragraph, 253, you
5 were making this statement that every -- let me
6 quote it: "All of the statements made in this
7 declaration of my own knowledge are true. All
8 statements made based on information and belief
9 are believed to be true. I declare under
10 penalty of perjury that the foregoing is true
11 and correct."
12 That's all right, right?
13 A. Yes.
14 Q. So you made this statement on
15 Paragraph 149 under penalty of perjury?
16 A. I made all the statements under
17 penalty of perjury.
18 Q. Okay. This statement in Paragraph
19 149 doesn't contain any modifier or reference
20 to just an embodiment, does it?
21 A. Well, it's -- it's talking about an
22 embodiment, right, which Kamieniecki is waiting

1 for the tuner to be idle, for -- waiting for
2 the in-band tuner to be idle to monitor.
3 Q. This doesn't say Kamieniecki, in one
4 embodiment, waits for an idle period, right?
5 A. No, it doesn't say that, but the --
6 I am talking about the need -- Kamieniecki does
7 say that there is a desire to monitor more
8 channels, and that's what I am trying to
9 discuss here is that, there is a need to have
10 more channels. The marketplace was basically,
11 at this time, seeing the need for more
12 channels.
13 And so -- that's where I talk about
14 the next reference, Konstantinos would provide
15 the capability to provide more channels to the
16 Kamieniecki embodiment.
17 MR. GALLUZZO: Objection.
18 Nonresponsive starting with "the marketplace."
19 BY MR. GALLUZZO:
20 Q. Your previous answer said:
21 "Kamieniecki does say that there is a desire to
22 monitor more channels;" is that accurate?

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A. Let me find it. So I think it may be a better description of what I was just saying is that Kamieniecki is describing that with a single in-band tuner, you are having to cycle through all the channels as I described, and so that alludes to the problem that more channels would solve.

Q. Okay. So we are both on the same page, that it is not true that Kamieniecki says there is a desire to monitor more channels. That is not a true statement, correct?

A. I think he does disclose a desire to monitor all channels by describing that you are having to cycle through all the channels.

Q. The question was monitor more channels, because those are the words you used.

Can you point me to where in Kamieniecki, if you believe it to be true, that Kamieniecki discloses a desire to monitor more channels?

A. All channels are more channels, right?

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Q. Are you asking me? I am asking you what your understanding is of the statement you just made, sir.

A. So I could have just as easily said "all channels." As in the declaration, Kamieniecki discloses a desire to monitor all channels.

Q. So when you said "more," you meant to say "all"?

A. Either one works because more channels is better than one channel. All channels are even better than more channels.

Q. We agree that Kamieniecki can only monitor one channel at a time, though, right?

A. On the in-band tuner.

Q. Also on the out-of-band?

A. No. One on the out-of-band, one on the in-band.

Q. Kamieniecki can monitor one channel on the in-band band and one channel on the out-of-band at the same time?

A. Correct.

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Q. Where is that in Kamieniecki?

A. I think I just stated that a minute ago. My screen went blank again.

Paragraph 14, it says: "Either or both in-band and out-of-band." IB and OOB. The top sentence, Column 2 -- well, no. We don't go by columns. We go by paragraph numbers.

Q. Top of Page 2 is what you are talking about?

A. Yes.

Q. Which is Number 4 at the bottom of the page?

A. Correct.

Q. Your read of that is that Kamieniecki's monitor can monitor two channels at the same time?

A. It can monitor both, an in-band channel and an out-of-band channel.

Q. You agree that Kamieniecki doesn't monitor any out-of-band channels until the in-band tuner is idle?

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A. It doesn't say, but a POSITA would understand that an out-of-band channel could be monitored all the time.

Q. Do you state that in your declaration?

A. I do not.

Q. Why would a POSITA understand that the out-of-band could be monitored all the time?

A. Because the out-of-band in general was fixed on a particular channel and receiving signals from that channel all the time, whether the set-top box is on or off.

So his statement that says "both," to me means that you could receive both in-band and out-of-band and monitor it at the same time.

Q. But as we've established, that is not something you said in your declaration so, therefore, it is not one of the basis for your opinions that the patent claims are invalid.

MR. QUALEY: Objection to form.

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THE WITNESS: You asked me about a lot of stuff today that was not in my declaration.

BY MR. GALLUZZO:

Q. I am asking you about this very one specific instance here. Perhaps I can reask it.

Do you agree with me that the statement you made about the out-of-band tuner being monitored at the same time as the in-band tuner is both not in your declaration and does not form a basis for your opinions about obviousness in this case?

MR. QUALEY: Objection to form.

THE WITNESS: Can you break it down a little bit for me so I can understand it better.

BY MR. GALLUZZO:

Q. If I refer to "statement," do you understand the statement I am referring to? Guess not. Let me try.

You have just given some testimony

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that the out-of-band tuner could be monitored -- withdrawn.

That the monitor of Kamieniecki could monitor out-of-band channels at the same time it monitors in-band channels.

You have also given testimony that Kamieniecki's monitor could monitor out-of-band channels even when the in-band tuner is not idle.

For either of those pieces of testimony, you would agree with me that they are not in your declaration, correct?

A. That's correct.

MR. QUALEY: Objection to form.

BY MR. GALLUZZO:

Q. You would also agree with me that neither of those pieces of testimony formed the basis for any of your opinions in this case that the challenged claims of the '008 or '826 patent are obvious or otherwise invalid?

MR. QUALEY: Objection to form.

BY MR. GALLUZZO:

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Q. And if you're reading the realtime, I think either should be neither.

A. The capability for Kamieniecki to monitor both in-band and out-of-band tuners is not necessary for supporting my opinion, because we brought in Konstantinos and we replaced the in-band and out-of-band tuners with the Konstantinos multi-channel receiver.

Q. You agree that the in-band tuner channels are only monitored when the in-band tuner is idle, right?

MR. QUALEY: Objection to form.

MR. GALLUZZO: Is the form objection because I am not specific about the reference?

MR. QUALEY: (Nodding head.)

MR. GALLUZZO: Yeah?

MR. QUALEY: Yeah.

MR. GALLUZZO: Thank you. I will withdraw it.

BY MR. GALLUZZO:

Q. You agree in Kamieniecki, that the in-band tuner channels are only monitored when

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the in-band tuner is idle, right?

A. Yes, except that, you know, there is that general statement about modification and adaptations may be made. The instantiation or the embodiment that he is describing with the searching through channels, as we have talked about in Figure 2, seems to -- seems to only occur when the set-top box is in the off or idle state for monitoring.

Q. There is no disclosure in Kamieniecki of how to monitor in-band channels, other than when the in-band tuner is idle, right?

A. I think that's correct.

Q. If we look at Figure 2, it is not permissive. Step 204 requires the set-top box to be in an off or idle state before doing any monitoring, right?

A. On the in-band channel, correct.

Q. Does Figure 2 specify in-band channel?

A. Well, the text is talking about

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in-band channels.
You are going to ask me to find it, aren't you?
Q. I will represent to you I am looking at Paragraph 15 right here that describes those steps and I don't see a reference to in-band channels.
A. Okay. Let me take a look.
Well, the implications is that it is in-band because a POSITA would know that the out-of-band tuner doesn't step through channels. Out-of-band tuner is essentially fixed, and so when it is talking about stepping through all the channels, it must be talking about the in-band tuner. A POSITA would totally understand that.
Q. Is the -- withdrawn.
Is the out-of-band tuner channel part of the channel map referenced in Paragraph 15?
A. No.
Q. What do you base that on?

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A. A POSITA would understand that a channel map refers to in-band channels, because there is no need for a channel map for a single out-of-band channel. It's fixed, in general, in a certain location. There is no -- so there is only one and there is no need for a channel map.
MR. GALLUZZO: Let's go off the record.
(A short recess was taken.)
BY MR. GALLUZZO:
Q. In Kamieniecki, the in-band and out-of-band tuners each can only select one channel at a time; is that right?
A. That's right. In the embodiment, he describes, with the exception of the adaptation as he describes in Paragraph 26.
Q. Do you cite to Paragraph 26 anywhere in your declarations in this case?
A. No.
Q. I'm sorry. To make sure the record is clear, can you give the answer again?

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A. It's on there. It says no.
Q. All right. Thank you.
In Kamieniecki, the out-of-band and in-band transmissions are received simultaneously by each tuner; is that right?
A. I better correct that one statement that I just made a minute ago.
No, I don't think, should have been my answer to the last question.
Q. To the one about Paragraph 26 of Kamieniecki?
A. Yes. Okay.
Q. I will reask the next question.
A. Okay.
Q. In Kamieniecki, you agree that the out-of-band and in-band communications or transmissions are received simultaneously?
A. Yes.
Q. And the out-of-band and in-band tuners can select different channels simultaneously?
A. Well, in-band selects one channel

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and the out-of-band channel is what it is, right? So...
Q. So at the same time, the in-band can select a different channel from what the out-of-band tuner selects?
A. Yes.
Q. If Kamieniecki wanted to monitor in-band channels while the in-band tuner was being used, Kamieniecki could have added another in-band tuner to the architecture, right?
A. I suppose so, yes.
Q. Kamieniecki didn't do that?
A. He doesn't describe it.
Q. There is no suggestion to do that in the reference?
A. Other than the fact that we got all this trouble to cycle through all the channels, and at this time, there was a market need and desire to have more channels to not only watch, but to monitor.
Q. There is nothing in Kamieniecki you

1 can point to that suggests adding a separate
2 dedicated in-band tuner, right?
3 A. Not that I can recall, other than
4 the fact that he went to all this trouble to
5 talk about scanning through channels with the
6 one in-band tuner.
7 Q. Well, if it was so simple just to
8 add another in-band tuner, why didn't he do it?
9 A. I don't know.
10 Q. It would have made his channel
11 surfing or channel monitoring easier, right?
12 A. Well, again, more tuners would allow
13 more watching of content of television and
14 monitoring more channels when those tuners were
15 not being used for monitoring, as he described
16 in the embodiment about the in-band tuner.
17 Q. If Kamieniecki added an additional
18 in-band tuner, would that increase the cost of
19 the set-top box to be developed?
20 A. It depends. You know, as silicon,
21 geometries and other progressions in the state
22 of electronics went along, it could be cheaper

1 or it could be more expensive, you know. If
2 you are going to redesign something, right,
3 then, you would obviously use the newer
4 components that may be more integrated and they
5 could be the same or less cost.
6 Q. In 2005, when Kamieniecki was
7 published, would it have been more expensive to
8 have two in-band tuners in a set-top box than
9 to have one?
10 A. I think I answered that question
11 with the discussion just now, about the
12 integration of functionality in silicon, as
13 well as the progression of technology. So I
14 mean, we are all familiar with the fact that
15 electronics seem to get lower cost as time goes
16 along.
17 Q. Can you answer my question in
18 relation to the year 2005 when Kamieniecki was
19 published?
20 A. I think I did. What can I clarify?
21 Q. Are you able to say whether the cost
22 would be higher or lower or are you just unable

1 to say?
2 A. I am unable -- I mean, I am able to
3 say that it could be higher or lower depending
4 on the things I just described.
5 Q. Okay. Let's talk about Konstantinos
6 which is Exhibit 1010 to the record. I think
7 it's the same in both proceedings.
8 (Deposition Exhibit 1010 was
9 previously marked for identification.)
10 BY MR. GALLUZZO:
11 Q. You agree with me that Konstantinos
12 is a DOCSIS reference?
13 MR. QUALEY: Objection to form.
14 THE WITNESS: So Konstantinos is
15 talking about DOCSIS. Konstantinos is what I
16 said, right?
17 BY MR. GALLUZZO:
18 Q. Yes.
19 A. Okay.
20 Q. That's in paragraphs 11 and 12 at
21 least?
22 A. At least.

1 Q. That is different from Kamieniecki
2 which doesn't explicitly refer to DOCSIS,
3 right?
4 A. Correct, although Kamieniecki talks
5 about cable modems, so one would understand it
6 to be, you know, cable modem -- that was a
7 standard for cable modems, was DOCSIS.
8 Q. Now, Konstantinos's architecture in,
9 for example, Figure 2, is one of a
10 multi-channel selector having a coarse
11 multiband selector and fine channel selectors,
12 right?
13 A. I need to see if that's exactly how
14 he describes it. I don't know that he uses the
15 word "fine channel band selector." He might,
16 but I don't recall.
17 Q. I am not trying to be tricky with
18 the language, I guess I was trying to create a
19 synopsis of it.
20 A. Oh, yeah. Okay. Paragraph 78 of my
21 declaration: "Multiband selector, coarse
22 selection performed by the multiband selector

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205 and then a fine channel selection performed by channel selectors 207A to N."

Q. A through N?

A. A through N, yes.

Q. Now, that number N, that's dictated by the number of channels you want the user to be able to access, whether through viewing or recording, right?

A. Yes. Or monitoring.

Q. What do you mean, "or monitoring"?

A. So -- so in the instantiation where we -- where we put the multi-channel receiver in, Kamieniecki is what I was talking about.

Q. Is it your opinion that in your proposed combination, one of the channel selectors, 207, would be dedicated to channel monitoring?

A. At least. I think that as Kamieniecki describes, you can monitor or output video on a particular -- with a particular tuner, right? So when we select channels, we could be monitoring multiple

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channels and/or watching and recording multiple channels with multiple channel selectors.

Q. When I used the word "dedicated," I meant that's it only did channel monitoring. It didn't do decoding or watching TV or recording, so let me reask.

Is it your opinion that in your proposed combination of Kamieniecki and Konstantinos, that at least one of the channel selectors, 207, from Konstantinos, would be used only for selection of channels to be monitored, not for user viewing, not for recording, not for any other purpose.

A. You could have one of the channel selectors dedicated for monitoring, right, or you could have more than one channel selector dedicated for monitoring and the other tuners used for processing and watching television or recording or whatever.

Q. Where do you say that in your declaration, either of them?

A. So in Paragraph 146 of my '008

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declaration, it says: "In the combination, since many channels can be simultaneously selected and output by the Konstantinos multi-channel receiver, it would have been obvious to a POSITA to select one or more channels, first portion of said digitized signal to be output." "One or more" is the key word -- "to be output to the Kamieniecki monitor for monitoring and select one or more channels to be output for normal usage."

So we are saying that we could have more than one monitor and more than one for watching television.

Q. You don't state in this Paragraph 146 that any of those channel selectors would be dedicated to monitoring, do you?

A. I don't know. I have to look.

So no, I don't. But in Paragraph 145, in talking about, since Kamieniecki expressly states that: "It wishes to perform monitoring in the background without disturbing user experiences," and this is not in my

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testimony, a POSITA would understand that, you know, one way to do that is to dedicate one or more of the channels for monitoring.

Q. Going back to Konstantinos's Figure 2, the output of multi-channel selector 206 is multiple channels, right?

A. Yeah. It's multiple bands that are going to each channel selector.

Q. That's true, even in the single chip implementation 212 shown in Figure 2?

A. I think that is what Figure 2 shows, yes.

Q. Each of these channel selectors 207, am I right in saying that they output a 6 megahertz-wide channel?

A. I mean, that would be the normal understanding of it, yes. I mean, you can see from Figure 3 that the result is desired channels coming out, right?

And so those could be 6 megahertz wide, those desired channels, C 1 through 4, for example.

Q. Is that true of the approximately 100 megahertz bandwidth that used to be known as the out-of-band channel?

MR. QUALEY: Objection to form.

THE WITNESS: Is what true?

BY MR. GALLUZZO:

Q. In Konstantinos, as I understand it, it can select channels from 50 megahertz to 1 gigahertz or as high as you would need, right?

A. Correct.

Q. And in that range, is what Kamieniecki calls the out-of-band channel, and I think you said at about a hundred megahertz; is that right?

A. No, I don't think I said that. I think the location in the spectrum was about a hundred megahertz, 108 typically, and that was for the systems I am familiar with. Our competitors may have had a different frequency that they used.

Q. So for the systems that you are familiar with that have the approximately 108

megahertz portion of the spectrum for the out-of-band communications, if Konstantinos wants to select that portion of the bandwidth, its channel selector is selecting a 6 megahertz-wide portion of bandwidth, right?

A. No. No. The out-of-band signals were not that wide. They were typically a lot less than that and I can't remember how much.

Q. One and a half?

A. Maybe. I don't know.

Q. Are you aware of anything in Konstantinos that says that its channel selectors can select channel sizes of varying bandwidth?

A. I don't think there was a need to. He was talking about receiving DOCSIS and DOCSIS channels were 6 megahertz, right, so I can look, but the way I understand Konstantinos, and this is probably not in my testimony because I didn't go down this path, right, is I believe that the multi-channel selector was capable of outputting a smaller

bandwidth than 6 megahertz.

Q. I don't know whether that's true or not, but since I don't -- I also don't think it's in your testimony, I think we can move on.

A. Okay. Fair enough.

MR. GALLUZZO: Let's talk briefly about Renken. I believe it is Exhibit 1011.

(Deposition Exhibit 1011 was previously marked for identification.)

THE WITNESS: Okay.

BY MR. GALLUZZO:

Q. I will focus on Figure 3.

A. Uh-huh. Okay.

Q. Figure 3 of Renken shows the downstream receiver circuit, and it has a number of downstream receivers, 21.

Do you see that?

A. Yes.

Q. Those downstream receivers have componentry to select channels; is that right?

A. And processing of some of those channels, yes.

Q. Even though Renken has multiple of these downstream receivers, it is true that Renken still waits for idle to monitor; is that right?

A. I don't think Renken says that. Perhaps you can point to me -- point to my declaration and see if I said differently.

Q. Yeah. Let's look at Paragraph 90.

A. Okay.

Q. I'm still on the '008 declaration. I believe this is identical in '826 as well.

A. Okay.

Q. The first sentence of Paragraph 90 says: "Renken describes that the MCCM 100 may receive a request from a central management controller, CMC 7, to perform measurements using one or more idle receivers, and the MCCM 100 may send its measurement results back to the CMC 7."

A. Okay. I stand corrected on the idle part that I just said.

Q. Understood. Again, this isn't meant

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1 to be a trick. I am trying to make sure we
2 agree on that point and then I will ask a
3 follow-up.
4 A. Okay.
5 Q. Do we grow that even though Renken
6 has multiple downstream receivers, that it
7 still performs measurements using idle
8 receivers?
9 A. Yes.
10 Q. It waits for those receivers to be
11 idle before using them for monitoring?
12 A. Let me read that section just to
13 make sure.
14 Q. You cite to Column 9, Lines 5 to 18.
15 A. Yes. So I think you are correct, it
16 waits for those to be idle --
17 Q. Renken?
18 A. -- for monitor in Renken.
19 Q. Renken uses the phrase "unused
20 receivers" in that portion that you cited?
21 A. That's right.
22 Q. Even though Renken has multiple

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1 downstream receivers, why does it still wait
2 for idle to monitor?
3 A. Well, a POSITA would understand that
4 you -- it might be desirable to use all of the
5 -- all of the -- what do you call it?
6 Q. Downstream receivers.
7 A. Thank you. All the downstream
8 receivers for watching video at a particular
9 time. So, you know, it doesn't say
10 specifically how many of these are in here, how
11 many of the downstream receivers, 21 receivers,
12 21, are in a particular implementation, so, you
13 know, if it was two, for example, or three, for
14 example, or four, you know, somebody -- a user
15 might want to watch two, three or four channels
16 at any particular time, whereas if you had like
17 50 of them, right, it's likely that you would
18 have a downstream receiver idle pretty much all
19 the time. No desire to use all 50 for watching
20 content.
21 Q. Why doesn't Renken just use a
22 downstream receiver while it is in use to do

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1 monitoring?
2 A. Well, it does not preclude from
3 using a single downstream receiver for both
4 watching video and measuring and monitoring.
5 But if you notice that each one of the boxes,
6 each one of the downstream receiver circuits
7 outputs data packets to -- for purposes, like,
8 you know, DOCSIS or watching video or whatever,
9 and simultaneously, that same box can output
10 measurement data.
11 See the arrows on the bottom of
12 Figure 3?
13 Q. I do. I think I am asking a
14 slightly different question.
15 A. Okay. So I could -- I mean, the way
16 I read it is, you can be on a single downstream
17 receiver, be watching TV and measuring data.
18 Q. That is not what Renken says though.
19 Renken said you have to wait for an
20 idle downstream receiver to monitor?
21 A. It says: "May receive requests to
22 perform measurements using one or more idle

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1 receivers." I mean, I don't think this is
2 important anyway, right, whether a single
3 receiver can output both.
4 Q. Okay. Maybe I am just going down
5 the wrong path.
6 Let me pause there and we can --
7 A. Okay.
8 Q. I will talk to my colleague and we
9 can maybe revisit that later if necessary.
10 A. I don't think I talked about that in
11 my declaration, but the way I understand the
12 invention is a single receiver could do --
13 could have two purposes.
14 Q. I would like to talk now about your
15 proposed combination of the Kamieniecki and
16 Konstantinos references.
17 A. Okay.
18 Q. I think this discussion applies
19 equally to both cases. If you think your
20 answer would change, let me know. I don't
21 think any of my questions are inapplicable.
22 So in your proposed combination of

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1 Kamieniecki and Konstantinos, I understand that
2 you are saying to take the in-band and
3 out-of-band tuners of Kamieniecki and replace
4 that with the multi-channel receiver of
5 Konstantinos; is that correct?
6 A. That's right.
7 Q. If we go back to Konstantinos and
8 look at that multi-channel receiver, there are
9 channel selectors A through N.
10 In your proposed combination, what
11 is that number N?
12 A. I didn't give a number, I don't
13 think in my declaration.
14 Q. I didn't see one either, which is
15 why I am asking.
16 So in your opinion, in your
17 combination that you believe renders the
18 asserted claims obvious, what is that number N?
19 A. I don't know. I would need to think
20 about that.
21 Q. In your proposed combination, which
22 part of Konstantinos's multi-channel receiver

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1 is connected to Kamieniecki's monitor?
2 A. So -- so the output from
3 multi-channel selector or multi-channel
4 receiver 200, those outputs go to the
5 monitoring.
6 Q. Where do you say that in your
7 declaration?
8 A. I knew you were going to ask me
9 that.
10 Q. I think you're getting a feel for my
11 questioning.
12 A. So in Paragraph 131, I say: "It
13 would be obvious to a POSITA to use
14 Konstantinos' multi-channel receiver in place
15 of in-band and out-of-band tuners in
16 Kamieniecki 110, as doing so merely combines
17 prior art elements according to known methods
18 to yield predictable results."
19 So if you look at the out-of-band
20 and the in-band tuner in Kamieniecki, it
21 connects to the monitor. So if you take that
22 box, the Kamieniecki's -- the Konstantinos

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1 receiver and you put in place the out-of-band
2 and in-band tuners, then it connects to the MON
3 box in Konstantinos.
4 Q. For the record, what you are
5 referring to is Paragraph 131 in the '826 IPR?
6 A. Yes, that's correct.
7 Q. And that's your support for where
8 you opine that Konstantinos's multi-channel
9 selector and its multiple output streams
10 connect to Kamieniecki's monitoring box?
11 A. At least. There may be other places
12 also.
13 Q. Do you opine that there are other
14 places?
15 A. I don't remember, but I can look for
16 it if you like.
17 Q. I don't believe it's there, but yes,
18 please look.
19 A. I mean, in Paragraph 151, it says --
20 Q. Before you go on, Paragraph 151 of
21 which declaration?
22 A. '826. The bottom of the page there,

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1 75, Paragraph 151: "A POSITA would have known
2 how to incorporate Konstantinos' ADC 204 and
3 multi-channel selector 206 in place of
4 Kamieniecki's in-band and out-of-band tuners,"
5 so to me, that means it connects to the MON,
6 because looking at the block diagram of
7 Kamieniecki.
8 Q. That to me seems consistent with the
9 Paragraph 131 we were previously looking at.
10 My question was whether there were
11 any other places where the multi -- multiple
12 output streams of Konstantinos would connect to
13 Kamieniecki's monitoring box. I guess I meant
14 in other places in the set-top box you were
15 proposing to combine, not other places in your
16 declaration.
17 A. I'm sorry. I misunderstood your
18 question. I was looking for other places in
19 the declaration.
20 Q. Okay. Let's pause. I'm sorry. It
21 was my lack of clarity.
22 Other than connection between

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1 Konstantinos's multiple output streams to
2 Kamieniecki's monitor, as described in
3 Paragraph 131 and now 151, are there any other
4 connections between Konstantinos's
5 multi-channel receiver and Kamieniecki's
6 monitor that you opined about?
7 A. No. I think we are talking about
8 just simply replacing the out-of-band and
9 in-band tuner of Kamieniecki with the
10 downstream receiver.
11 Q. You don't opine that there needs to
12 be additional --
13 A. Sorry. I used the wrong word.
14 Excuse me.
15 Q. Please restate it.
16 Multi-channel receiver I think is
17 what you are looking for.
18 A. Thank you. Digital multi-channel
19 receiver.
20 Q. Yeah. Sorry. You might be able to
21 see your answer in front of you. It starts at
22 Line 108/15.

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1 Just please restate your answer to
2 correct it the way you would like.
3 A. We talked about simply replacing the
4 out-of-band and in-band tuners of Kamieniecki
5 with the Konstantinos digital multi-channel
6 receiver.
7 Q. You are not opining that additional
8 hardware is necessary between the multi-channel
9 receiver of Konstantinos and the monitor of
10 Kamieniecki, correct?
11 A. Correct.
12 Q. If you go to -- with apologies, the
13 '008 declaration and you go to Paragraph 136.
14 Are you there with me?
15 A. Yes.
16 Q. Here, you talk about decoders as you
17 understand it in Kamieniecki and decoders that
18 are disclosed in Konstantinos.
19 And my question is: For purposes of
20 your combination, whose decoders are in the
21 combined set-top box, Kamieniecki or
22 Konstantinos?

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1 MR. QUALEY: Objection to form.
2 THE WITNESS: So multiple decoders
3 were required to watch multiple television
4 channels, and in this section, we are talking
5 about -- we obviously have to have decoders and
6 they even cite Ota, describe a system of
7 multiple decoders are added, so one certainly
8 understand -- a POSITA would certainly
9 understand that decoders are needed for, you
10 know, each television channel you wish to
11 recover.
12 So to correct my previous answer,
13 you would also need multiple decoders in the
14 Kamieniecki set-top box as described by
15 Konstantinos and Ota.
16 BY MR. GALLUZZO:
17 Q. Are you relying on Ota for the
18 decoders to meet limitation 1D?
19 A. It's just another example of
20 multiple decoders, so...
21 Q. This is -- might not seem like an
22 important point but it is a relatively

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1 important point for these proceedings. So I am
2 hoping I can get a yes or a no to be clear.
3 Are you relying on Ota to provide
4 decoders that you opine meet limitation 1D?
5 MR. QUALEY: Objection to form.
6 THE WITNESS: I mean, I say that:
7 "MPEG decoders would have been necessary for
8 decoding the MPEG stream that Kamieniecki and
9 Konstantinos describe," and so it would be
10 obvious to a POSITA that you need multiple MPEG
11 decoders to display multiple channels, and Ota
12 is just cited as an example of a system with
13 multiple MPEG decoders. It was well-known to a
14 POSITA.
15 BY MR. GALLUZZO:
16 Q. Konstantinos discloses a
17 multi-channel decoder, right?
18 MR. QUALEY: Objection to form.
19 THE WITNESS: It discloses a
20 multi-channel receiver architecture.
21 BY MR. GALLUZZO:
22 Q. It also discloses a multi-channel

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1 decoder, correct?
2 A. Right. In Figure 9 of Konstantinos,
3 940: "A multi-channel decoder receives the
4 output of the multiband selector, performs
5 baseband signal operations on all or some of
6 the streams, channel decoder."
7 Q. So my question is: For purposes of
8 meeting limitation 1D of the '008 patent and 1F
9 of the '826 patent, you have opined that
10 decoders meet those limitations.
11 My question is: In your proposed
12 combination, which reference are those decoders
13 coming from?
14 A. So Konstantinos has a multi-channel
15 decoder that performs channel decoding on all
16 or some of the streams. So it's in
17 Konstantinos.
18 Ota is just cited as another example
19 of what was going on in, you know, in the
20 industry with multiple MPEG decoders.
21 Q. If one of skill in the art were
22 putting together your proposed combination

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1 set-top box, they are doing what you say they
2 would do, which is replace the in-band and
3 out-of-band tuners of Kamieniecki with the
4 multi-channel receiver of Konstantinos, the box
5 would have to have decoders.
6 So would that person of skill in the
7 art take the decoders from the Konstantinos
8 disclosure or would it take the decoders from
9 what you say would be obvious in the
10 Kamieniecki disclosure?
11 A. It could be either. It is just
12 obvious that we need multiple decoders and --
13 and Kamieniecki doesn't go into much detail
14 about MPEG decoding, right, so one would, you
15 know, he could -- he just knows that you have
16 to have multiple MPEG decoders if you are going
17 to output and view multiple channels and so,
18 you know, more details of that could be
19 rendered from Konstantinos and/or Ota or
20 perhaps a million other references.
21 Q. In putting together your proposed
22 combination set-top box, if a person of skill

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1 in the art did not use the Konstantinos
2 multi-channel decoder, where would those
3 decoders sit in the box?
4 MR. QUALEY: Objection to form.
5 BY MR. GALLUZZO:
6 Q. I guess I could specify.
7 Where would they sit in relation to
8 the monitor and the multiple -- I'm sorry, the
9 multi-channel receiver?
10 A. I think I need you to break the
11 question down for me a bit so I understand it
12 better.
13 Q. Earlier, you testified it could be
14 either, and I understood that to mean that the
15 decoders could either come from obviousness,
16 based on person's reading of Kamieniecki, or it
17 could come directly from Konstantinos's
18 multi-channel decoder.
19 Am I correct in that understanding?
20 A. That sounds correct.
21 Q. So what I am trying to imagine is,
22 in the processing stack, or if you want to call

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1 it the processing steps of an incoming signal,
2 where do the decoders sit, now that you have
3 replaced in-band and out-of-band tuners with
4 the multi-channel receiver of Konstantinos?
5 A. So it would be after the
6 multi-channel receiver so that you could decode
7 and display the channel selected with the
8 channel selector 207 A through N.
9 Q. Would it also be before the monitor
10 from Kamieniecki?
11 A. So the monitor is different than the
12 MPEG decoder. So the MPEG -- there is no MPEG
13 decoder in the monitoring path of Kamieniecki.
14 Does that answer your question?
15 Q. Give me a moment.
16 MR. QUALEY: Can we take a break.
17 MR. GALLUZZO: Yeah, let's take a
18 break.
19 (A short recess was taken.)
20 BY MR. GALLUZZO:
21 Q. Mr. Lett, are you ready to go back
22 on or do you need more time?

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A. Give me just a second.
Q. Sure.
A. Okay.
Q. What were you reviewing?
A. I was looking at my declaration.
Q. Anything in particular?
A. I was just rereading that section about the MPEG decoding.
Q. Okay. So I hope that pictures can help here.
(Deposition Exhibit 2011 was marked for identification.)
BY MR. GALLUZZO:
Q. What I am going to hand you is what I've marked as Exhibit 2011, which I have used blue pen to try to indicate what I think I am hearing you say, but I want you to tell me whether I am right or not, and if I am not right, I'll give you an opportunity to further display it for me.
But I will hold this up so that I can explain and then I will give it to you.

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A. Okay.
Q. On the left, I have drawn the headend. There is a right-facing arrow that goes to Exhibit 1010, Number 212, that is meant to represent Konstantinos's multi-channel receiver.
Then there's multiple arrows to the right just like in the diagram on Figure 2, there's multiple output streams below that. To the right of that, I have decoders. To the right of that, I have the multiple output streams again, and then to the right of that, I have Exhibit 1009, Number 116 is meant to represent Kamieniecki's monitor.
I'm going to hand this to you. You can continue to study it and let me know when you are ready for me to ask you questions.
A. Okay.
Q. Is this -- withdrawn.
When you are opining about the combination of Kamieniecki and Konstantinos that a person of ordinary skill in the art

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would make, and that there would be decoders in the system, at a high level, is this the architecture of the multi-channel receiver, the decoders and the monitor that you are opining on?
MR. QUALEY: Objection to form.
THE WITNESS: Can you please ask the question again. Some of the words are not spelled out correctly, so I don't quite understand it reading it.
BY MR. GALLUZZO:
Q. Sure. The realtime is a very good version of the transcript. The final will be checked over later. But trust me, this is much better than it used to be without the realtime.
Here is my question: You are giving opinions about the combination of Kamieniecki and Konstantinos and how a person of ordinary skill in the art would combine them as of the critical date.
Is it your opinion that that combination would include decoders in the place

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I have put it in Exhibit 2011, and the overall architecture of those three components, as I have drawn them?
MR. QUALEY: Objection to form.
THE WITNESS: So what do you mean by "MON"?
BY MR. GALLUZZO:
Q. If you look at Exhibit 1009, that is Kamieniecki.
A. Right.
Q. And you look at Figure 1, it says "MON," and has the number 116.
A. Right.
Q. I mean that box to represent the same thing, Kamieniecki's monitor.
A. So what do you mean by "decoders" here?
Q. The decoders that we have been discussing that you said a person of skill in the art would understand, had to be in the set-top box or would have been from Konstantinos's multi-channel decoder.

A. You mean the MPEG decoders we have been talking about?
Q. Yes.
A. So the MPEG decoders are generally for the purpose of displaying video, recovering video and audio, as I state in my '826 declaration, Paragraph 163, so they can be displayed for a user.
So this diagram that you are showing is monitoring a channel, I think is what you are intending to show here. There probably is not an MPEG decoder in between the -- what is the right word, multi-channel receiver and the MON.
In general, the -- one of the outputs, it's one or more of the outputs, right, go to one or more decoders for the purpose of displaying video. In that functionality, if it's for the purpose of displaying video, you don't have to have an MPEG decoder.
So it's possible that one could also

have an MPEG decoder in that path if you wanted to measure something that had to do with the video channel after decoding. But if we are talking about monitoring something, like signal noise ratio, or I mean, even error rate for the visual stream, you don't have to have a MPEG decoder.
So I would probably draw this a little differently than what you drew.
Q. I'm going to give you a chance to do that in a moment. Let me ask one follow-up first.
Would you need a MPEG decoder to monitor channel absence or presence?
A. Not necessarily.
Q. What do you mean?
A. The channel could be absent as a result of low bit error rate that could be measured before the MPEG decoder, or it could be a result of low modulation error ratio, MER, and that would be measured before an MPEG decoder, and so either one of those signal

characteristics could determine the absence or the -- or the parameter that indicates there is an absence of signal. And then you would -- could communicate the absence of that channel to the headend.
Q. Could you also measure channel absence or presence after an MPEG decoder?
A. I am trying to think about that, and I think, in general, the absence and presence that we are talking about in this context has to do with the quality of reception of the signal at the set-top box, and that can be determined normally before MPEG decoding.
Q. Would you need an MPEG decoder to monitor error count?
A. No.
Q. Would you need an MPEG decoder to monitor signal level estimates?
A. No.
Q. You had testified that you would draw the drawing slightly differently so what I am about to hand you is Exhibit 2012.

(Deposition Exhibit 2012 was marked for identification.)
BY MR. GALLUZZO:
Q. I again used a blue pen. To make it easy for the record, I'm going to hand you a red pen, and so if you make any modifications, we'll know whose is whose.
Really, the only difference between Exhibit 2011 and 2012 is, I've added a box for TV up top, in case you wanted to show signals going to the user, and I haven't included a decoder or any lines going into the monitor.
But what I would like you to do for me is to indicate your opinion that you stated in your declaration about where the decoder would go and how the multiple output streams from Konstantinos's multi-channel receiver could make their way presumably both to the TV and the monitor.
MR. QUALEY: I'll put an objection on the record that you are almost creating -- asking a witness to create evidence.

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BY MR. GALLUZZO:
Q. To be clear, I am asking you to depict what you have described in your declarations as your opinions in this case.
If you believe that you haven't given such opinions, please state so and I will withdraw.
A. So I did not, I don't think, in my declaration lay out a block diagram for the system. Instead, I think what I did was, as in Paragraph 163 of the '826 describes, it says that: "After an MPEG stream is received, it will need to be decoded to recover the video and audio so it can be displayed for a user."
I didn't draw a diagram of where is the MPEG decoder, I don't think, and so I believe this might be a new opinion that I would like to not do on the fly. I would like to think about it and make sure it is accurate.
Q. So it's your testimony that it's a new opinion where the decoder would be positioned in relation to the multi-channel

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receiver, the monitor and the TV?
MR. QUALEY: Objection to form.
THE WITNESS: Perhaps I missed it, but did I point out where the decoder was positioned in relation to the multi-channel receiver and the monitor and the TV in my declaration?
BY MR. GALLUZZO:
Q. No, I don't think you did.
A. So it sounds like it would be a new opinion for me to draw that diagram.
Q. So you haven't provided any opinions in this case about where the decoder would be --
MR. QUALEY: Objection to form.
BY MR. GALLUZZO:
Q. -- is that right?
A. I don't remember.
Q. You haven't provided any opinions about how the multiple output streams of the multi-channel receivers somehow get both to the monitor and the TV?

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A. I believe I described how the output stream gets to the monitor.
Q. I believe you testified that the output stream does get to the monitor, yes. You've also testified that the output stream in some way gets to the TV for viewing.
My question is a little different. My question is: You haven't provided any testimony in your declaration and you are unable to provide testimony here today claiming it to be a new opinion, about how the output streams get both to the monitor and the TV; is that right?
MR. QUALEY: Objection to form.
THE WITNESS: I have said in my declaration that digitized signals are output to both the -- the processing and the monitor simultaneously.
BY MR. GALLUZZO:
Q. How?
A. So the section starting with Paragraph 139 of the '008 declaration,

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Paragraph 146, for example.
Q. Was your answer finished or do you still have more?
A. I'm ready for the next question.
Q. You cite to Paragraph 146. You say: "It would have been obvious to a POSITA to select one or more channels to be output to the Kamieniecki monitor 116 for monitoring, and select one or more channels to be output for normal usage, such as watching a television channel, thereby showing the concurrently output recited in element 1E."
A. Correct.
Q. But you don't testify how the POSITA or the combined set-top box would select such channels to go to two different places, do you?
A. Well, there is some examples in, you know, the channel selector process as described in Paragraph 140 and through the examples shown in Figure 3 of Konstantinos that the channel selector outputs can go two places, and then I describe in 146, that one of the places is, you

1 know, for watching a television channel and the
2 other one is for monitoring.
3 Q. If it's your testimony that it is
4 possible to send those channels that are
5 selected to two different places and that it is
6 supported by the references, I would like you
7 to try to fill in my diagram, Exhibit 2012.
8 Are you able to do that?
9 A. I would not like to do that on the
10 fly.
11 Q. If it is something that you've
12 opined on in this case, I think you should do
13 it. If you are unable --
14 A. You want me to design your set-top
15 box for you in this declaration -- in this
16 deposition?
17 Q. I would like you to show me visually
18 how you understand your written opinions to be
19 related to this issue.
20 A. My written opinions are as stated.
21 Q. Sir, are you unwilling to fill in
22 Exhibit 2012?

1 A. I do not feel comfortable creating
2 evidence at this time.
3 Q. So you are unwilling?
4 A. I am here to answer questions about
5 my declaration.
6 Q. And I think your declaration is
7 hopelessly ambiguous on this point and my
8 attempt is to try to figure out visually what
9 you are trying to get across and give you an
10 opportunity to show me because I am failing to
11 understand.
12 So here is my question: Are you
13 able to fill in Exhibit 2012 at a high level to
14 depict how the multiple output streams from
15 Konstantinos's multi-channel receiver can go to
16 both the monitor and/or the TV?
17 MR. QUALEY: Objection to form.
18 We lost the realtime again.
19 MR. CHANG: The computer is asleep
20 again.
21 THE WITNESS: I believe it would be
22 a new opinion for me to draw this block diagram

1 and I am not comfortable with it at this time,
2 because I need to think about all the details
3 that are required to draw that block diagram.
4 BY MR. GALLUZZO:
5 Q. You haven't already thought about
6 all those details that are required?
7 A. I haven't drawn a schematic diagram.
8 Q. You say you need time to think about
9 all the details that are required to draw that
10 block diagram.
11 You agree with me that you have not
12 yet already thought about all those details?
13 MR. QUALEY: Objection to form.
14 THE WITNESS: No. I need more time
15 to think about those details in order to
16 complete this drawing.
17 BY MR. GALLUZZO:
18 Q. Sticking with the '008 declaration,
19 go to Paragraph 145, please.
20 Are you there?
21 A. Yes.
22 Q. This is a long paragraph. I'm going

1 to focus on -- looks like it's the second
2 sentence from the bottom. It starts with:
3 "Kamieniecki described waiting."
4 Do you see that sentence?
5 A. Yes.
6 Q. I will just read it into the record.
7 "Kamieniecki described waiting until
8 the STB 110 was idle before performing its
9 monitoring, but this was only needed because
10 Kamieniecki's STB 110 had only one IB tuner,
11 112, and only one OOB tuner, 114, because
12 Kamieniecki wished to avoid disturbing users."
13 Do you see that?
14 A. Yes.
15 Q. This part about "wished to avoid
16 disturbing uses," I would like to focus on.
17 My first question is: You would
18 agree with me that a person of skill in the art
19 in 2011, when designing a set-top box, would
20 still wish to avoid disturbing users, right?
21 A. I'm not sure I understand.
22 Q. Would you agree with me that in

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2011, those in the art designing set-top boxes had as one of their goals, don't disturb a user when monitoring?

A. Kamieniecki said that he wished to avoid disturbing users.

Q. Generally, was it a goal of those skilled in the art in 2011 when designing monitoring functionality, not to disturb users as part of that functionality?

A. I think that is fair, yes.

Q. I would like to talk about -- oh, sorry, I moved too quickly.

Your proposed combination of Kamieniecki and Konstantinos, a person of skill in the art putting that combination together would still have a desire not to disturb users when designing the monitoring functionality, right? Your combination doesn't change that general motivation?

A. Well, it actually makes it less disturbing, to avoid disturbing users because there is more tuners available.

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Q. Yeah, my point was maybe adjacent to that, so let met try to ask it a different way.

The person of skill in the art you opine that, who would combine Kamieniecki and Konstantinos as part of that combination, would they still be motivated not to disturb users with the final result they came up with?

A. That's one of the main reasons that they would want multiple receives so that they would have more tuners available so that they could allow the user to watch more channels and/or have more -- have a channel available for monitoring because of the multiple channels that were being used for watching television.

Q. I would like you to go to the next paragraph, 146. And again, I am using the '008 declaration. I think it's identical in the '826, but feel free to refer to that if you want. There just might be a different paragraph number.

Are you there with me?

A. Yes.

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Q. So first off, I am just trying to understand how many arguments you are putting up in this Paragraph 146. I can't tell if it is one or two. Let me explain and then I will ask my question.

It's possible to read this paragraph as being one argument from the words "in the combination" to the words recited in element 1E. And then to read as a second argument, starting with "Konstantinos also describes" to the end.

So here is my question. Was it your intents in this paragraph to have one cohesive argument or to have two separate arguments?

MR. QUALEY: Objection to form.

THE WITNESS: I'm just describing an additional capability, as described by Konstantinos in the second half of that section, starting with "Konstantinos also describes an interface circuit."

What it's saying is that you could output the multi-channel selector to a device

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that's not -- to a component or device that is not part of the single chip to be further processed.

So it's adding that one or more channels could be processed somewhere else, other than the data processor or the MPEG decoders that's within the single chip.

BY MR. GALLUZZO:

Q. So is your interface circuit argument part of your obviousness combination or is it ancillary or extra?

MR. QUALEY: Objection to form.

THE WITNESS: It's described by Konstantinos, you know, in Figure 9 and in Paragraph 121. He is outputting these streams to be further processed with channel and source decoders.

THE COURT REPORTER: I'm sorry. I didn't hear the end.

MR. GALLUZZO: With channel and source decoders.

THE COURT REPORTER: Thank you.

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BY MR. GALLUZZO:
Q. Let me ask it a different way.
If I were to say that your interface circuit argument was necessary for your opinion on Claim 1 of this patent, the '008 patent, would you have any reason to disagree with me?
MR. QUALEY: Objection to form.
THE WITNESS: Kamieniecki states this is an optional --
BY MR. GALLUZZO:
Q. Konstantinos?
A. I'm sorry. Konstantinos, thank you, states that it's an optional feature.
Q. Even though Konstantinos states it's an optional feature, is it optional for your opinions?
MR. QUALEY: Objection to form.
THE WITNESS: The declaration is talking about two ways to achieve the functionality of outputting to an MPEG decoder in the box or component and that also, to give the output to another place that could also

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decode and process the video to be watched as normal, so I think, you know, both achieve the same result that -- of the claim element.
BY MR. GALLUZZO:
Q. You say here: "Konstantinos also describes an interface circuit that would allow for outputs from the multi-channel selector to be sent to a monitoring unit that was not a component of Konstantinos's single chip implementation."
A. Right.
Q. You cite to Konstantinos, Paragraph 121.
A. Right.
Q. You are not quoting Konstantinos here, right? That's your summary?
A. It's not a quote, it doesn't look like, no.
Q. It is actually imprecise because that is not what Konstantinos says, does it?
A. I think it does.
Q. Well, if you go to Paragraph 121 of

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Konstantinos, you'd agree with me that it refers to outputs, not from the multi-channel selector, but from the multiband selector or the multi-channel decoder, right?
A. So it says: "An interface circuit receives outputs from the multiband selector and/or the multi-channel decoder. So you've got those. The interface circuit receives those two, right?
Then we can potentially multiplex streams for data transmission from component IC to the off-chip environment, so I don't know what is the difference in that and what I said.
Q. You used the element multi-channel selector.
You would agree with me in Paragraph 121, there is no reference to any outputs being sent from the multi-channel selector to the interface circuit, but instead, from the multiband selector and/or the multi-channel decoder which are different things.
A. So you're questioning whether it's

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called multiband selector or --
Q. Let's see if we can --
A. -- or multi-channel selector?
Q. Let's see if we can agree on some basics.
You agree that nowhere in Paragraph 121 of Konstantinos is the term "multi-channel selector"?
A. Correct.
Q. You agree that the multi-channel selector is something different from the multi-channel decoder?
A. Say that again, please.
Q. Do you agree that the multi-channel selector is something different from the multi-channel decoder?
A. Yes.
Q. Do you agree that the multi-channel selector is something different from the multiband selector?
MR. QUALEY: Objection to form.
THE WITNESS: If the band was one

1 channel, it's the same.
2 BY MR. GALLUZZO:
3 Q. Where in Konstantinos is there any
4 disclosure of a band of one channel? Sounds
5 like we are just making stuff up here.
6 A. So Konstantinos describes that the
7 size of the block of channels for the multiband
8 tuner or multiband selectors, excuse me, is
9 variable and so a POSITA would understand that
10 variable means it can be one, it can be five,
11 it could be ten, whatever.
12 He shows an example, you know, with
13 more than one in that diagram, but that is just
14 one example.
15 Q. Is it your opinion that in a
16 real-world situation, a multi-channel receiver,
17 such as depicted and disclosed in Konstantinos,
18 would receive a band of a width of a single 6
19 megahertz channel from a headend?
20 MR. QUALEY: Objection to form.
21 THE WITNESS: Can you read that
22 back.

1 (The record was read as requested.)
2 THE WITNESS: No, you wouldn't
3 transmit just one channel from a headend.
4 BY MR. GALLUZZO:
5 Q. And so, therefore, the multiband
6 selector would receive more than one channel,
7 correct?
8 A. Yeah, if you are sending more than
9 one channel, it would receive more than one
10 channel.
11 Q. And so, therefore, can you think of
12 a single real-world situation with a
13 multi-channel receiver, such as depicted and
14 disclosed in Konstantinos, where the multiband
15 selector would select only a single 6 megahertz
16 channel?
17 A. So what Konstantinos is describing
18 here is sending that stream somewhere other
19 than this single channel receiver, so that it
20 could be -- multi-channel receiver, I should
21 say, so it could be processed by something
22 else.

1 So if one were to want to send that
2 video to, let's say a baby set-top box that is
3 in another room, one could envision where one
4 would send the channel that is desired to be
5 watched in another room via this feature.
6 Q. By the multiband selector?
7 A. Yes.
8 Q. If you are only selecting a single
9 channel, what is the purpose of any of the
10 channel selectors to 207?
11 A. Again, so what we are talking about
12 is outputting from the multiband selector
13 somewhere else, and if you were using that
14 feature or your system wanted to implement that
15 feature, one could say, okay, I'm going to take
16 one of these and I'm going to make it 6
17 megahertz and I'm going to output to a baby
18 set-top box maybe in another room or something,
19 via this path. He's just saying things like
20 that are supported.
21 Q. Where does it say anything like that
22 in Konstantinos?

1 A. So he is talking about -- in that
2 paragraph that we cited, 121, outputting from
3 the multiband selector.
4 Q. There is no disclosure in all of
5 Konstantinos of outputting a single channel
6 from a multiband selector. Otherwise, it would
7 cease to be a multiband selector, right?
8 A. He discloses that the multiband
9 selector is variable in terms of the number of
10 channels.
11 Q. So let me get this straight. It's
12 your opinion that a person of skill in the art
13 would read Konstantinos, look at the
14 multi-channel receiver, look at the
15 multi-channel selector, look at the multiband
16 selector, and think, I'm just going to select
17 one band of one channel and pass it to a
18 channel selector which serves no purpose.
19 Is that your testimony?
20 MR. QUALEY: Objection to form.
21 THE WITNESS: I am saying that
22 Konstantinos is capable of doing that.

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BY MR. GALLUZZO:

Q. Konstantinos is also capable of serving as a paperweight, but that's not what it is disclosed for.

So I am concerned about disclosures of the reference. Let's back up and go back to where we started, which was: You would agree with me, I hope you can agree with me, that the multi-channel selector is a different thing from the multiband selector.

Can we agree with that?

MR. QUALEY: Objection.

THE WITNESS: So the multi-channel selector is box 206. A subcomponent of the multi-channel selector is the multiband selector, so the multiband selector is encompassed in the multi-channel selector.

So my testimony is correct, that the output of the multi-channel selector that includes the multiband selector goes to the interface.

BY MR. GALLUZZO:

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Q. There is nothing in Konstantinos disclosing an interface circuit receiving outputs from one or more of the channel selectors 207. Agreed?

A. Correct.

Q. The disclosure is only for either the multiband selector 205 or the multi-channel decoder which is not depicted but is referred to in box 940 of Figure 9, right?

A. That's not correct.

Q. What is not correct about that?

A. As you can see in Figure 2 of Konstantinos, if I am outputting something from the multiband selector, it is inside the box of the multi-channel selector so, therefore, I am outputting from the multi-channel selector.

Q. All right. Okay. Now I understand what you are saying.

So when you, in Paragraph 146 were referring to the multi-channel selector, you were really referring to the multiband selector. It's just that, as it exits the

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multiband selector, it necessarily has to exit the multi-channel selector?

A. That's correct.

Q. Do you also agree with me that the multi-channel decoder outputs more than one channel?

A. Well, it says that it performs channel decoding on all or some of the streams. "The multi-channel decoder receives the output from the multiband selector and performs baseband signal operation, channel decoding on all or some of the streams."

So all or some could include multiple channels.

Q. And because it used streams, plural, and does not use -- indicates streams, singular, you agree that it is always outputting multiple channels?

MR. QUALEY: Objection to form.

THE WITNESS: No, because some could include one. All or some includes one.

MR. GALLUZZO: Let's go off the

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record.

(A short recess was taken.)

BY MR. GALLUZZO:

Q. I would now like to turn to Claim 2 of the '008 patent. This analysis starts on Page 79 of your declaration.

A. Okay.

Q. Here, you rely on Kamieniecki and Konstantinos here?

A. I'm sorry. You said what page?

Q. 79.

A. Okay. Yes.

Q. To your knowledge, is there anything in Konstantinos that discloses the ability to set a low point and a high point to be the entire spectrum?

By "the entire spectrum," I mean the entire television spectrum in case that wasn't clear.

A. Well, yes, because as the flowchart shows in Kamieniecki, you cycle through the channels in a channel map, and the channel map

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1 implies the lowest channel number in that
2 channel map, would be -- if it's 54 to whatever
3 the bandwidth was at this time, if it was the
4 lowest channel, right, up to the highest
5 channel in the television spectrum, the highest
6 channel number in the channel map would be that
7 channel number, so it spans the entire
8 television spectrum.
9 Q. But not the out-of-band channel,
10 right?
11 A. Right. And that's not part of the
12 television spectrum in the context of
13 Kamieniecki.
14 Q. How about Konstantinos? Is there
15 anything in Konstantinos that discloses the
16 setting of a low point and a high point to be
17 the entire television spectrum?
18 A. So Figure 3, for example, of
19 Konstantinos, shows a signal
20 digitally-modulated going from 50 megahertz to
21 1 gigahertz so a POSITA would understand that
22 to be the entire television spectrum.

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1 Q. So a POSITA would understand from
2 Figure 3 that that is a selection that could be
3 made? Is that your testimony?
4 A. The left side of the picture is
5 showing the input to the multi-channel
6 receiver, and so the right side is showing the
7 selection of channels from the entire spectrum.
8 Q. The right side is showing the
9 selection by the multi-channel receiver?
10 A. Yes.
11 Q. So what -- where in Konstantinos,
12 can one interacting with the input, I want to
13 select from 50 megahertz to 1 gigahertz in the
14 multi-channel receiver?
15 A. So the system is designed to select
16 the entire television spectrum in Konstantinos,
17 so I'm not sure I understand what -- I don't
18 understand your question.
19 Q. Is the multiband selector of
20 Konstantinos designed to select the entire
21 television spectrum?
22 A. It selects channels from the entire

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1 television spectrum.
2 Q. Is there a way for a user of the
3 multi-channel selector in Konstantinos to
4 select a low point and a high point to the
5 multiband selector to be the entire television
6 spectrum?
7 A. So all one has to do is select
8 subband A, for example, as shown in Figure 3,
9 to be the low frequency starting at 50
10 megahertz, and another one of the channel
11 selectors select band H, which is the upper
12 portion of the entire television spectrum being
13 at 1 gigahertz.
14 Q. Is it your testimony that
15 Konstantinos discloses that you can make that
16 selection?
17 A. Explain again what selection you are
18 talking about.
19 Q. The selection of saying my low
20 point, I want to be 50 megahertz, and my high
21 point, I want to be the top end of the
22 spectrum, you know, 1 gigahertz or thereabouts.

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1 A. So the Konstantinos box does not
2 select the input, so to speak, so the input
3 comes in of the entire television spectrum from
4 50 to 1 gigahertz to the Konstantinos
5 multi-channel receiver -- multi-channel
6 receiver, and the multi-channel receiver can
7 output the low, the high, the mid, any portion
8 of the television spectrum it wants through the
9 multi-channel selector to the multiple output
10 streams.
11 Q. Let's go to Claim 9 which starts in
12 Paragraph 175 of your '008 declaration.
13 A. Okay.
14 Q. Here, you include another reference
15 called Cholas, I believe it's pronounced?
16 A. Right.
17 Q. And in this Paragraph 175, you say a
18 number of things. I would like to focus on
19 your proposed combination with Cholas.
20 Are you able to explain to me how
21 the Kamieniecki-Konstantinos combination can be
22 combined with Cholas?

A. So, for example in Figure 11 of Cholas, excuse me, Figure 13 of Cholas.
Q. Uh-huh.
A. It is showing a unified or wideband tuner at the top and within that set-top box is a DOCSIS cable modem.
Q. So where would the Kamieniecki-Konstantinos, for lack of a better word, device go?
A. In general, replacing 1124 which is the unified or wideband tuner, and also, the monitoring capability would be combined with this.
Q. Where. Also in 1124?
A. No, no, no. I mean, the multi-channel receiver in Konstantinos would be the front end -- or excuse me, the unified or wideband tuner 1124.
Hang on a second. Well, essentially, what this is showing is, it's well-known that you can make a set-top box with a cable modem in it.

Q. So sticking with Figure 13, I think we established that the multi-channel receiver of Konstantinos would be in or replace 1124?
A. And 1121.
Q. And 1121. Thank you.
Where would the monitor of Kamieniecki go?
A. Inside this box.
Q. Where?
A. So one would take an output from the Konstantinos multi-channel receiver and go to a monitor, as shown by Kamieniecki, that you would put inside this box.
Q. There would be a separate arrow coming off of 1124?
A. Well, again, we are replacing that with the Kamieniecki multi-channel receiver.
Q. I'm sorry. So since we have replaced 1124 and 1121 with Kamieniecki-Konstantinos or at least -- withdrawn.
Since we have replaced 1124 and 1121

with the multi-channel receiver of Konstantinos, would there still be the arrow that exists in Figure 13 that goes into the demodulator 1103?
A. Yes.
Q. And that arrow would come out of the multi-channel receiver?
A. Yes. It is one of the -- or multiples lines with, you know, demods, demuxers and transcoders and video decoders.
Q. Would there be an additional line coming out of the multi-channel receiver going to a monitor? This would be Kamieniecki's monitor.
A. It would be one of the -- one of the --
Q. What are you looking for? Perhaps I can help.
A. Konstantinos's diagram.
Q. Exhibit 1010.
A. Thank you. Yeah, it would be one of the multiple output streams from the channel

selector go to the monitor.
Q. And that would be a separate line than the one that goes into the demodulator and so on?
A. It could go either place. You could have optionally an output from the multi-channel selector to go either to the demod/demux of that path or the monitoring path, depending on what you wanted to do with that particular channel.
Q. Would that optional path for the channel require a splitter or some sort of other selector?
MR. QUALEY: Objection to form.
THE WITNESS: I mean, to get to the level of detail that you are looking for, I think we would have to essentially go down to the schematic level. This is a high level block diagram.
The point of the Cholas is that it was common to have set-top boxes that had also cable modems inside.

BY MR. GALLUZZO:
Q. So that's only reason you are using Cholas?
A. It's an example of including the gateway device was well-understood. It would reduce costs and redundancy if you had a separate set-top box and a separate cable modem. The reason to combine it is, is to make it more cost effective and more integrated.
Q. If I recall earlier, you testified that Kamieniecki could have a cable modem in it. If that's true, what is the purpose of Cholas?
A. It's a further example that it was understood that cable modems were integrated with set-top boxes and that it would reduce cost and redundancy.
Q. The discussion we had about Figure 13 and what would be replaced and where arrows would go, that is not something you put in your declarations, is it?
A. No.

Q. You could have?
A. Well, the claim element was, when one or more circuits reside in a customer premise gateway, so I didn't think it was necessary to design a circuit and show all the connections, other than showing that it's inside the customer premise gateway which I believe Cholas shows.
Q. You could have explained where in the customer premises gateway, said one or more circuits reside, right?
A. Probably could have, yes.
Q. You didn't?
A. I don't think so. If you see it, let me know and I will be happy to answer any questions about it.
Q. Going back to Kamieniecki for a moment, I just want to get something clear that I am not quite so sure that I am clear on.
In your opinion -- I'm sorry. I will wait for you to get there. Exhibit 1009.
A. Thank you.

Q. If you could look at Figure 1 with me, or really anywhere else. That's what I am looking at.
Are you ready?
A. Yes.
Q. In your opinion, how many channels can Kamieniecki's monitor monitor at the same time?
A. Well, as we talked about earlier, it can monitor two in the embodiment shown in Figure 1, one from the out-of-band and one from the in-band.
Q. Does Kamieniecki disclose that its monitor could monitor more than two channels at a time?
A. Well, it describes the Figure 2 block diagram that allows you to monitor all the channels as you step through them one-by-one on the in-band and simultaneously monitor the out-band channel, out-of-band channel.
Q. Does Kamieniecki disclose that its

monitor could monitor more than two channels at a time?
A. Not that I am aware of.
Q. Does Kamieniecki -- withdrawn.
Who wrote your declarations?
A. It was a collaborative effort with myself and the attorneys.
Q. How much time did you personally spend on the drafting of your declarations?
A. It's been --
Q. And I want to limit it just to these two cases.
A. I mean, I don't remember. It's been a long time. It would be very difficult to say how much time I spent on it.
Q. Do you think you spent more than a hundred hours?
A. Probably not, but I can't say for sure. I mean, it's been since February. It's been, like, eight months.
Q. When were you first retained to work on cases adverse to my client, Entropic?

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A. I don't remember. I would have to look at my engagement agreement to know the answer.
Q. Who was that engagement agreement with?
A. With Banner Witcoff.
Q. Did the engagement agreement cover all of your work on the Entropic -- I'm sorry, all of your work for matters where you were adverse to Entropic?
A. I think. You know, I shouldn't speculate. I should probably just look at the agreement because I don't remember, except during the time of this engagement, if there were any restrictions.
Q. How many engagement agreements had you entered into with Banner Witcoff?
A. I don't remember.
Q. Have you -- I'm sorry, go ahead.
A. I worked on other cases for other parties with Banner Witcoff before.
Q. Is it okay if I call them the

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Entropic matters?
A. Okay.
Q. Is that -- do you understand what I mean? It's basically matters where you are opining on a matter that is adverse to my client, Entropic.
Is that -- can I use that as a shorthand?
A. I'm okay with that, yes.
Q. For the Entropic matters, how much engagement agreements have you entered into with Banner Witcoff?
A. I don't remember. I could be wrong, but I think it's one. I could be wrong. I can't testify that it was only one.
Q. Do you remember approximately when you started working on the Entropic matters?
A. I mean, it was either last year or this year, but I can't remember exactly.
Q. Approximately how much time have you spent on all of your work in any of the Entropic matters?

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A. I don't know. I would have to look at my invoices and documents to answer that question.
Q. Do you prepare your own invoices?
A. Yes.
Q. Do you review them and study them before you send them out?
A. Yes.
Q. Are they accurate?
A. Yes.
Q. When is the last time you sent an invoice?
A. Let's see. I think I sent one at the end of last month.
Q. To whom did you send it?
A. To Banner Witcoff.
Q. Any particular attorney?
A. It was -- I think it was Wayne, but carbon copy to some other people.
Q. Some other people at Banner Witcoff?
A. I can't ask them a question, can I?
Q. If it's about a privilege issue, you

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can.
A. It's -- Donna. Donna was carbon-copied. You were carbon-copied, I think. No? I don't know. I will have to look at the invoice to see.
Q. What is your understanding of who Donna is?
A. She is an administrative assistant, I think.
Q. Here at Banner Witcoff?
A. Yes.
Q. Do you recall the approximate amount of that invoice you last sent?
A. I don't remember.
Q. Do you know approximately how much you invoiced to Banner Witcoff for all of your work on the Entropic matters?
A. I don't remember.
Q. Do you know if it is more than $50,000?
A. I don't remember.
Q. What would you need to remember?

A. I need to look at any invoices.
Q. Are those accessible?
A. I've got them on my PC.
Q. So if we were to ask for that number, you would be able to provide it?
A. Yeah, I can do that.
Q. Do you know whether it was less than $100,000 that you have invoiced in total?
A. I mean, I really don't remember. I think it was a lot less than a hundred thousand, but I mean, I don't know.
Q. I am okay with general. I don't need, like, to the penny. I am just trying to gauge, you know, are we talking ten bucks, are we talking ten million bucks. I don't think it's either of those.
A. It is definitely not ten million. And it's not $10, so it is more than ten and less than a million.
Q. All joking aside --
A. Ten million.
Q. All joking aside, do we think it's

closer to 10,000 or closer to 60,000?
A. Somewhere in the middle between those two.
Q. And then when you were retained, I think you said it might have been this year, it might have been last year, if it was last year, are we talking the fall or winter of last year or are we talking before that?
A. I'm sorry. I didn't study the dates in my engagement agreement or my invoices to prepare for this declaration, so I just don't know. I don't remember.
Q. What did you do to prepare for the deposition?
A. I studied the materials considered and -- including my declaration.
Q. Yes or no, did you have meetings with counsel?
A. Yes.
Q. How many?
A. We had three prep sessions I think.
Q. Virtual or in person?

A. Two were virtual, one was in person.
Q. Was in person yesterday?
A. Yes.
Q. Virtual obviously before that?
A. Yes.
Q. Approximately how many hours in total do you think you spent preparing for your deposition either with counsel or on your own?
A. I mean, again, I can look at my time sheets that I keep and tell you, but I mean, I don't know. Maybe around 20 hours. I mean, again, I don't know if that is the answer but I'm speculating that it is.
Q. Other than the three gentlemen in the room here today from Banner Witcoff, did anybody else attend those prep sessions?
A. No, I don't think so.
Q. Yes or no, have you had calls with counsel about the subject matter of your opinions in this case?
A. Yes.
Q. Okay. Without telling me the

substance of those calls, who has attended those calls?
A. I have had some calls with Paul. I think Wayne, and I can't remember, but I -- I got all that information somewhere in my files. Steve was on the calls or -- one or more of the calls.
Q. Have you ever had conversations with people who were not Banner Witcoff attorneys about the subject matter of this case --
A. No.
Q. -- other than perhaps your family.
A. No, I haven't even talked to my family about it.
Q. Have you talked with any in-house counsel or business people at Comcast?
A. No. I mean, I may have in the past, but certainly not related to this case.
Q. Yeah, in case it's not clear, all my questions are narrowed and related to the Entropic cases.
A. Yes. Okay.

Q. Have you had calls with any other expert witnesses?
A. No.
Q. Have you exchanged e-mails with any other expert witnesses?
A. No.
Q. Any in-person meetings with any other expert witnesses?
A. No.
MR. QUALEY: Slow down to make sure he finishes the question. You are answering a little quick.
MR. GALLUZZO: Sorry, I'm a little quick.
THE WITNESS: Sorry.
MR. GALLUZZO: I can move fast. So when you answer fast, I am ready to go.
BY MR. GALLUZZO:
Q. Have you had any discussions with attorneys from Kilpatrick Townsend Stockton firm about the Entropic cases? You might have heard of them as KTS or Kilpatrick?

A. I don't think so. I have done some consulting for KTS on another case.
Q. Another Entropic case?
A. No.
Q. This is a case wholly unrelated to the subject matter in patents here?
A. That's correct.
Q. So not a case for Comcast or for Cox?
A. Not for Cox, for sure. Let me think about it.
Q. Maybe I should fix it and say not a matter adverse to Entropic?
A. Correct.
Q. Have you had any discussions with anybody who you understood to be employees of Cox or attorneys for Cox about the Entropic cases?
A. No.
Q. Any e-mail conversations?
A. No.
Q. When you are paid for your work on

these cases, are you paid directly from Banner Witcoff?
A. Yes.
MR. GALLUZZO: Let's go off the record.
(A short recess was taken.)
BY MR. GALLUZZO:
Q. So before we finish up, I briefly want to go back in time to your Scientific Atlanta days again.
A. Okay.
Q. Do you recall a gentleman by the name Sam Russ?
A. Yes.
Q. How do you know him?
A. He worked for me. He was a manager and I forgot to mention him when you were asking me about guys that had Ph.D.s.
Q. What would he do when he worked for you?
A. He managed one of my groups of developers.

Q. Which one?
A. I don't know if I had a particular name other than Sam's group.
Q. Was he generally knowledgeable in your eyes?
A. Yes.
Q. About what?
A. Electronics design, embedded systems, this kind of thing.
Q. The kind of technology we have been talking about in this case?
A. I think that could be included, yes.
Q. Any reason to doubt his ability or competence to provide testimony in this case?
A. No.
MR. GALLUZZO: Thank you very much for your time today. No further questions, although counsel might have some.
MR. QUALEY: No. We are good.
(Whereupon, the proceeding was concluded at 4:43 p.m.)

CERTIFICATE OF NOTARY PUBLIC

I, Bonnie L. Russo, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me in shorthand and thereafter reduced to computerized transcription under my direction; that said deposition is a true record of the testimony given by said witness; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken; and further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of the action.

Bonnie L Russo

Notary Public in and for
the District of Columbia
My Commission expires: August 14, 2025

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October 21, 2024
David B. Lett
lettinnovations@gmail.com

Case Name: Comcast Cable Communcations, LLC v. Entropic Communications, LLC
Veritext Reference Number: 6945802 Deposition Date: 10/8/2024
Dear Sir/Madam:
Enclosed you will find a transcript of your deposition. As the reading and signing have not been expressly waived, please review the transcript and note any changes or corrections on the errata sheet included, indicating the page, line number, change and reason for the change. Sign at the bottom of the sheet in the presence of a notary and forward the errata sheet back to us at the address shown above or email to production-midwest@veritext.com.
If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.
Sincerely,
Production Department
NO NOTARY REQUIRED IN CA

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6945802
CASE NAME: Comcast Cable Communcations, LLC v. Entropic Communications, LLC
DATE OF DEPOSITION: 10/8/2024
WITNESS' NAME: David B. Lett
In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.
I have made no changes to the testimony as transcribed by the court reporter.

_____ _____
Date David B. Lett

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;
They signed the foregoing Sworn Statement; and
Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal this _____ day of_____, 20____.

_____
Notary Public
_____
Commission Expiration Date

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6945802
CASE NAME: Comcast Cable Communcations, LLC v. Entropic Communications, LLC
DATE OF DEPOSITION: 10/8/2024
WITNESS' NAME: David B. Lett
In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.
I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s).
I request that these changes be entered as part of the record of my testimony.

I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.

_____ _____
Date David B. Lett

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:
They have read the transcript;
They have listed all of their corrections in the appended Errata Sheet;
They signed the foregoing Sworn Statement; and
Their execution of this Statement is of their free act and deed.
I have affixed my name and official seal this _____ day of_____, 20____.

_____
Notary Public
_____
Commission Expiration Date

1 ERRATA SHEET
VERITEXT LEGAL SOLUTIONS MIDWEST
2 ASSIGNMENT NO: 6945802
3 PAGE/LINE(S) / CHANGE /REASON
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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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VERITEXT LEGAL SOLUTIONS

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Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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