UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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COMCAST CABLE COMMUNICATIONS, LLC,

Petitioner,

v.

ENTROPIC COMMUNICATIONS LLC,

Patent Owner.

_____

Case IPR2024-00438
Patent 11,399,206

VIDEOCONFERENCE DEPOSITION OF

DAVID B. LETT

TAKEN ON MAY 20, 2025

REPORTED BY:

PATRICIA L. HUBBARD, CSR #3400

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,

Petitioner,

v.

ENTROPIC COMMUNICATIONS LLC,

Patent Owner.

Case IPR2024-00432
Patent 9,210,362

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,

Petitioner,

v.

ENTROPIC COMMUNICATIONS LLC,

Patent Owner.

Case IPR2024-00435
Patent 11,381,866

REMOTE VIDEOCONFERENCE DEPOSITION OF DAVID B. LETT, who is at the time of this proceeding located in Duluth, Georgia, taken on behalf of the Patent Owner, commencing at 8:57 A.M. (Pacific Time) on May 20, 2025, before PATRICIA L. HUBBARD, CSR #3400, a Certified Shorthand Reporter in and for the State of California, pursuant to Notice.

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1 I N D E X
2
3 WITNESS PAGE
4 DAVID B. LETT
5 (By Mr. Hendifar) 8
6
7
8
9 EXHIBITS:
10 (NONE)
11
12
13
14 INFORMATION REQUESTED:
15 (NONE)
16
17
18 WITNESS INSTRUCTED NOT TO ANSWER:
19 (NONE)
20
21
22
23
24
25

1 MAY 20, 2025
2 7:57 A.M. (PACIFIC TIME)
3 * * *
4
5 THE REPORTER: Good morning. My name is
6 Patricia Hubbard. I am California CSR Number 3400.
7 Mr. Lett, can you tell me the city and
8 state you are currently located in.
9 THE WITNESS: Duluth, Georgia. Duluth,
10 D-u-l-u-t-h.
11 THE REPORTER: Okay. I am not at the
12 same location as the witness.
13 Does anyone have any objection to my
14 administering the oath to the witness remotely?
15 MR. HENDIFAR: No objections from me.
16 MR. CUVIELLO: No objections.
17 THE REPORTER: Okay. Would you please
18 raise your right hand, sir.
19 Do you solemnly swear that the testimony
20 you are about to give in this deposition will be the
21 truth, the whole truth, and nothing but the truth
22 under penalty of perjury?
23 THE WITNESS: I do.
24 THE REPORTER: Counsel, would you make
25 your appearances for the record, please.

1 MR. HENDIFAR: Parham Hendifar for
2 Patent Owner Entropic.
3 MR. CUVIELLO: And Michael Cuviello for
4 Petitioner Comcast.
5 And I have Fred Meeker here with me, as
6 well.
7 MR. MEEKER: Fred Meeker with the Law
8 Firm of Banner and Witcoff representing Comcast
9 Communications, LLC.
10 THE REPORTER: Okay, Counsel. You're
11 good to go.
12
13 DAVID B. LETT,
14 called as a witness, having been
15 sworn, was examined and testified
16 as follows:
17
18 EXAMINATION
19 BY MR. HENDIFAR:
20 Q. Okay. Good morning, Mr. Lett.
21 Thank you for your time.
22 A. Good morning.
23 Q. You understand that today's deposition
24 is a combined deposition for three matters
25 IPR2024-00432 00435 and 00438, correct?

1 A. Yes. I understand.
2 Q. Okay. For simplicity, I will use the
3 exhibit numbers in the first IPR2024-00432 unless I
4 note otherwise.
5 If at any point you have any questions
6 or concerns or confusions let me know, and I'll
7 clarify the exhibit numbers.
8 Is that fair?
9 A. Yes.
10 Q. Okay. And you were already deposed once
11 in connection with these three IPRs, correct?
12 A. Yes.
13 Q. And do you recall the procedure for
14 these IPRs we discussed in the prior deposition?
15 A. I think so, yes.
16 Q. Do you have any questions about the
17 deposition process for today's deposition?
18 A. No.
19 Q. Okay. And do you understand that during
20 the breaks you are not allowed to speak with
21 counsel, correct?
22 A. I think --
23 Q. Withdraw that.
24 You're not -- you understand that during
25 the breaks you're not allowed to speak with counsel

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regarding the substance of your testimony, correct?
A. Yes. I understand.
Q. Okay. If I ask you a question and you have any questions, concerns or ambiguities, please let me know. But if you do answer the question, I will assume that you have understood my question.
Is that fair?
A. Yes.
Q. And what did you do to prepare for today's deposition?
A. I reviewed the three reply declarations that I had submitted, as well as some of the other materials that were used in the first deposition -- first declaration and supporting materials.
Q. And in connection with preparing for today's deposition did you review any document that is not cited in your declarations in this matter?
A. No, not that I'm aware of.
Q. And how many hours did you approximately spend preparing for today's deposition?
A. I'm thinking maybe around -- let's call it eight hours. That's just ballpark. I don't -- I don't really know exactly.
Q. And did you meet anyone in connection with preparing for today's deposition?

A. Yes. I had some -- some preparation sessions with Michael and other attorneys.
Q. Okay. Anybody else other than attorneys?
A. No.
Q. And how many hours did you approximately meet with others in connection with preparing for today's deposition?
A. I'm thinking maybe -- maybe three hours of the eight.
Q. And you submitted a reply declaration in each of the three IPRs that are the subject of today's deposition, correct?
A. That's right.
Q. And I believe in each of the IPRs those reply declarations are filed as Exhibit 1078.
So, for -- for everyone's convenience when I refer to a reply declaration I mean the reply declarations filed as Exhibit 1078 in each of the three matters.
Is that fair?
A. That's fair with me.
I wasn't sure if that question was for me or for counsel. So, sorry for my delay.
Q. No worries.

And do you have any documents -- do you have any hard copy documents available to you in the room where you are currently located?
A. Yes.
Q. And will you please let me know what hard copy documents you have?
A. Yes. I have all three Exhibits 1078 that you just referred to. I have Exhibit 1013 --
You want me to tell you the titles or just the exhibit numbers?
Q. Exhibit number is fine.
A. Okay. I have Exhibit -- actually all three exhibits, 1001, which are the reference -- the patents and AMs that we're talking about, and I also have printouts of a subsection of my first declaration that I have both the claim listing appendix and the exhibits list. I have printouts of all three of those of each of those two subsections of my first declarations.
Q. And are all the documents that you just described clean copies or do they have writings on them?
A. They do not have writings.
Q. Other than the documents you mentioned from these IPRs, do you have any other documents,

such as an outline, notes or something similar?
A. No. I don't have any other written documents or printed documents in front of me or notes or anything.
Q. Now, same question for electronic documents.
Do you also have access to electronic documents on your computer?
A. I do. I have -- would you like to know what they are?
Q. Let me -- I don't want to waste your time.
Other than matter -- other than documents that are found in these IPRs, do you have access to any other documents on your computer for today's deposition?
A. The only folders -- the only folder I have open other than Zoom is the -- the thumb drive that I was provided with all the materials considered that has all the exhibit numbers, and within that thumb drive are three folders. And on those folders, they also have some other -- they have all the exhibit numbers for each folder.
Right.
But then each one of the folders also

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has documents numbered 1 through something, like maybe 30 in one example. And it seems to be prosecution history documents and filings and stuff like that.

But I haven't looked at any of those, honestly. I've only looked at the exhibit numbers.

MR. CUVIELLO: And, Counsel, what was provided is simply what's in the record in each case.

MR. HENDIFAR: Thank you so much.

MR. CUVIELLO: Thank you.

MR. HENDIFAR: I don't mean to waste his time. That's why I was --

MR. CUVIELLO: I understand.

MR. HENDIFAR: I appreciate that.

BY MR. HENDIFAR:

Q. So, Mr. Lett, how many hours did you approximately spend in connection with preparing your reply declarations in these three matters?

A. I will really don't remember.

Would you like me to kind of guess as my best recollection?

Q. I would like you to estimate, not -- obviously I don't want you to just make a blind guess. But if you can estimate, I would appreciate

that.

A. Well, I probably testified in my previous deposition a number in this regard. And I haven't looked back at those estimates, which --

Actually you're asking me about the second declaration. Excuse me.

So-s let me just -- just say maybe ballpark let's call it four hours for each of them.

Q. And did you draft your reply declarations in these matters?

A. I -- I did not the first draft. The first draft was supplied by the attorneys to me.

And I edited and commented in a collaborative process to produce the final document that is my opinion that I signed.

Q. Prior to receiving your draft declarations did you conduct any analysis of what arguments you would like to be in your draft declaration?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I'm sorry. I didn't quite understand that last part.

Can you repeat that part or restate it for me?

///

BY MR. HENDIFAR:

Q. Of course.

You testified that approximately you spent about four hours in connection with each of the three reply declarations.

Correct?

A. In preparing them was the question. So, yes, I think that's correct.

Q. And you also testified that you received a draft of your reply declaration which you edited.

Is that also correct?

A. Yes.

Q. My question is prior to receiving the drafts of your reply declarations which you edited, did you conduct any analysis to create maybe an outline of the arguments that would be in your reply declaration?

MR. CUVIELLO: Objection. Form.

By MR. HENDIFAR:

Q. I withdraw the question.

Here is the question for -- I withdraw that question.

Did you determine what arguments would be included in your reply declarations?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I made some comments that I shared with my attorneys that were used and incorporated in the draft of the second reply declarations.

BY MR. HENDIFAR:

Q. And were those comments made before or after you received the first draft of your declaration?

MR. CUVIELLO: Objection. Form and scope.

THE WITNESS: I provided some comments before I received the second reply declaration first draft.

BY MR. HENDIFAR:

Q. And did you make the determination as to what specific issues would be addressed in your declarations?

MR. CUVIELLO: Objection. Form, scope.

THE WITNESS: I provided some input that I think resulted in the points that were put in the supplied -- reply declaration.

BY MR. HENDIFAR:

Q. Does your reply declaration contain all the points and issues that you intended to address?

MR. CUVIELLO: Objection. Form, scope.

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THE WITNESS: I don't remember.
BY MR. HENDIFAR:
Q. What is the plain and ordinary meaning of the word "select" in the context of this technology?
MR. CUVIELLO: Objection. Form.
BY MR. HENDIFAR:
Q. Actually I withdraw the question. I'll ask a different question.
In the -- in the field of this technology are the words "selecting" and "demultiplexing" synonymous?
MR. CUVIELLO: Objection. Form.
THE WITNESS: Perhaps you could give me a more specific question perhaps related to a claim element or citation so I can comment. Because it's a very, let's say, broad question.
BY MR. HENDIFAR:
Q. Are you unable to answer the question?
Let me ask you this, do you know if in this field the words "selecting" and "demultiplexing" are synonymous?
MR. CUVIELLO: Objection. Form.
THE WITNESS: Can you please ask me a question about specific citations so I can

understand the question?
BY MR. HENDIFAR:
Q. Which part of my question you don't understand?
A. Perhaps the "in this field."
Because a field is a very wide scope. And I think that I need to have a more narrow question related to exactly what we're talking about to answer your question that I don't understand how to answer otherwise.
Q. Are you an expert in the field of digital signal processing and radio frequency tuning systems?
A. Yes.
Q. In the field of digital signal processing and radio frequency tuning systems are the words "selecting" and "demultiplexing" synonymous?
MR. CUVIELLO: Objection. Form.
THE WITNESS: Again I need a more specific scope so I can understand your question.
BY MR. HENDIFAR:
Q. Which part of my question you don't understand?
A. Are you asking me about the -- the

patents or are you asking me about Zhang?
Are you asking about my second declaration?
Perhaps you could point me to what you're asking so I can understand the context of what you're asking.
Q. Fair. In the field of digital signal processing and radio frequency, have you ever heard the word "selecting"?
A. Yes. But I've also heard the word "selecting" for selecting items from the grocery store.
Q. Very good.
Have you also heard the word "demultiplexing"?
A. Yes.
Q. Now, in the following questions going forward when I say "this field," I will be referring to the field of digital signal processing and radio frequency tuning systems.
Do you understand that?
A. Yes.
Q. Okay. In this field are the phrases "selecting a channel" and "demultiplexing channels" synonymous?

A. I'm sorry. In the context of the patents we're talking about I need a more narrow question.
Q. Mr. Lett, I get to ask the questions I want to ask.
If you don't know the answer, you can say "I don't know the answer." If you know the answer, you're required to answer.
But you can't dictate to me what questions I can ask.
So, the question that is pending is, in the field of digital signal processing and radio frequency tuning systems are the phrases "selecting channels" and "demultiplexing channels" synonymous?
Do you know the answer to that question?
A. So, in the -- in the Zhang patent that we used as -- we cite one of the references, Exhibit 1013, it uses demultiplexing digital channel, DEMUX --
Q. I'm not asking about --
A. -- for a selector.
Q. Mr. Lett, I'm not asking about Zhang.
Just answer my question.
So I'll repeat the question so you're clear what the question is.

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I'm not asking you what Zhang says. I'm not asking you what the patent says. I'm asking you as an expert in this field, if those words have the same meaning. So I'll repeat the question.

Mr. Lett, as an expert in this field of digital signal processing and radio frequency tuning systems, do you have an opinion as to whether the phrases "selecting channels" and "demultiplexing channels" are synonymous?

MR. CUVIELLO: Objection. Form and scope.

THE WITNESS: So, the one example that I know of very intimately is that Zhang uses the words "demultiplexing" for selecting.

BY MR. HENDIFAR:

Q. That wasn't my question.

A. And that's in the digital channel demultiplexer 230, and then he shows the inside of what's 230, which is a channel selector.

Q. So, Mr. Lett, let me be clear. So, I'm -- we went through the deposition last time, and I'm familiar with how you would be trained. But I will -- if you don't answer my questions, I will call the Board.

I'm not asking about what Zhang does. I

am -- I am very familiar that you're instructed to whatever question go read your declaration from Zhang. I'm familiar with that instruction.

But I am not intending to just allow this deposition to go the way --

MR. CUVIELLO: And, Counsel, if I can just interrupt, if you want to call the Board, we're comfortable with that. Because your line of questions are out of scope. This deposition is about the replies that he filed --

MR. HENDIFAR: You don't get to give speaking objections here. If you have an objection, you just say "objection, scope" and that's the extent of it.

And actually you cannot instruct the witness not to answer a question based on scope.

MR. CUVIELLO: I have not instructed him not to answer the question.

MR. HENDIFAR: Very good. But I can ask the questions I need to ask and he's required to answer.

Okay?

BY MR. HENDIFAR:

Q. So, Mr. Lett, as I'm explaining, I am familiar with the process. And I don't intend to

allow it to go the way you're playing it.

So, I'll ask the question, and I expect an answer to the question.

Okay?

My question is not about what Zhang does. My question is not about what terminologies Zhang uses. My question is very simple.

As an expert in this field, Mr. Lett, in the field of digital signal processing and radio frequency tuning systems, do you have an opinion as to whether the phrases "selecting channels" and "demultiplexing channels" are synonymous?

Do you have an opinion as to that question?

MR. CUVIELLO: Objection. Form and scope.

THE WITNESS: I'm trying to answer your question.

BY MR. HENDIFAR:

Q. Do you have an opinion?

A. My opinion is that at least one example that I know of, and I looked at it from a -- from a viewpoint of a POSITA that would have access to documents in this field such as Zhang, I'm giving you one example where Zhang says one word and means

the other.

Because if you look at the inside of what he's -- the details of what he's describing, it's perhaps different than one would expect.

BY MR. HENDIFAR:

Q. So is it your opinion that Zhang's use of the word "demultiplexing" is different than the ordinary usage of that word in this field?

MR. CUVIELLO: Objection. Form.

THE WITNESS: No. What I'm saying is that at least one example of Zhang uses the word "DEMUX," "demultiplexer" for block 230. And block 230, if you look at it, is a channel selector, because it has mixers and numerically controlled oscillators and low-pass filters that select channels.

So in this case what he calls a demultiplexer is a selector.

BY MR. HENDIFAR:

Q. Okay. Is it your opinion that Zhang's, in your view, use of the phrase "demultiplexing" to mean selecting, is it your opinion that that usage of the word "demultiplexing" is consistent with the plain meaning of "demultiplexing" in the field of digital signal processing?

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MR. CUVIELLO: Objection. Form.
THE WITNESS: So, Zhang also uses the word "demultiplexing" in another context. He's talking about time division demultiplexing.
And in that case it's basically different than what we described earlier -- or he called as a demultiplexer, which was actually a selector.
In the case of time division demultiplexing, he's describing the serialization of data with one selected channel data followed by another channel selected data output to demodulators.
Q. Does the phrase "demultiplexing" have an understood meaning by a POSITA in the field of digital signal processing and radio frequency tuning systems?
A. So, I think that it's a little loose in terms of what exactly "demultiplexing" means in the field.
And so one would as a POSITA maybe see the word "demultiplexing" and see if they understood what it really is.
Right?
In this case, you know, that I described

a minute ago with Zhang, he calls it a demult- -- DEMUX, but it's actually channel selecting.
So, I think a POSITA would need to look at the case that we're talking about and -- or he's looking at a particular case to see what is exactly meant by those terms.
Q. And you testified that Zhang's use of "demultiplexer" as -- to mean selector was not, quote, what one would expect, end quote.
Do you recall that?
A. I do, yes.
Q. Okay. And why is that?
A. So, what he shows in his figure -- Figure 2 is the output of the high-speed analog to digital converter coming into the digital channel DEMUX. And then coming out are selected channels C1, C2 . . .CN.
So, I think what he used the terminology for in this case, DEMUX, is he's taking, let's call it, signals on one -- let's call it one signal.
Right?
The one signal in this case is the -- the digitized full frequency spectrum -- right? -- as the input. And the output are selected channels.
So, he might have chosen the word

"DEMUX" so that he's talking about basically picking out certain of those channels as the output C1 through CN from that block.
And then clearly if you look at the next diagram, which is Figure 3, that's exactly what he's doing.
Q. So my question was why is it that Zhang's use of the word "demultiplexing" to mean selecting in your view, quote, not one -- not what one would expect, end quote?
Why is that usage of "demultiplexing" not what one would expect as you mentioned?
MR. CUVIELLO: Objection. Form.
THE WITNESS: So I probably should have said without looking at further detail, we might -- we might not understand what he means by that exactly.
And then -- then he goes on to describe in detail what that block is. And so we totally understand that each path includes a mixer, a filter and an NCO that takes out, let's call it, one channel for each one of those strings. And there's multiple of those, one for each C element and, you know, outputs that channel in its own baseband the output path.

BY MR. HENDIFAR:
Q. Outside of Zhang have you ever seen in this field the word "demultiplexing channels" to mean selecting channels?
A. I don't remember.
Q. Sitting here now you have no recollection of any other instance outside of Zhang where "demultiplexing channels" meant selecting channels, correct?
MR. CUVIELLO: Objection. Form.
THE WITNESS: Would you mind restating that for me?
BY MR. HENDIFAR:
Q. Sure.
Sitting here now you have no recollection of any other instance that, outside of Zhang, the word "demultiplexing channel" in this field was used to mean selecting channel, correct?
MR. CUVIELLO: Objection. Form.
THE WITNESS: I don't recall. There might have been, but I just -- I don't recall.
I've been focused on these patents and this issue for a while, and so I really haven't thought about that.
///

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BY MR. HENDIFAR:
Q. Is there a device in the field of digital processing called a demultiplexer?
A. I've heard the word "demultiplexer," yes. So, I think that you would have to look at the device to see what it is exactly in a similar manner to what I just described with the Zhang -- Zhang patent.
Q. So you had heard the phrase "demultiplexer" prior to your engagement in these IPRs, correct?
A. Yes.
Q. And prior to your engagement in these IPRs did you know what a "demultiplexer" means?
A. I think so.
MR. CUVIELLO: Objection. Form.
BY MR. HENDIFAR:
Q. I'm sorry. You both spoke. I could not --
MR. CUVIELLO: Yes. Objection. Form.
THE WITNESS: So, when I was in college, for example, and took my very first digital design class, I remember they had like a book of logic parts that you could pick from. Like Texas Instruments had this very nice yellow book, you

probably remember it, that we all loved.
No.
BY MR. HENDIFAR:
Q. I didn't know enough of electronics in college.
A. So anyway, you know, I think there were devices in there that were called demultiplexers.
Q. And so what was the book name? I'm sorry.
A. "TTL Cookbook" from Texas Instruments.
Q. Could you spell that?
A. T-T-L Cookbook.
Q. Cookbook. Okay. So I didn't mishear you. It's actually called that, "TTL Cookbook."
And was that a graduate level book or an undergrad level book?
MR. CUVIELLO: Objection. Scope.
THE WITNESS: Well, it's a vendor's publication of parts that they had for sale, let's say.
BY MR. HENDIFAR:
Q. I see. Oh, so it's a -- it's an index to Texas Instrument's chips or other circuit elements?
A. Yeah. So it's like a book of all --

like all the data sheets of all the parts they offer. I think would be a best way to describe it.
Q. Okay.
A. But I remember it had demultiplexers in there.
Q. And when you saw a demultiplexer in the Texas Instruments index --
A. Cookbook.
Q. Cookbook. Is that a term that is normally used for that? I just don't know.
A. Yes.
Q. So, when you saw the demultiplexer device in the Texas Instruments cookbook, did you understand what that device does?
MR. CUVIELLO: Objection. Scope.
THE WITNESS: Yes.
BY MR. HENDIFAR:
Q. And what did it do?
A. It received one signal and split it up into other signals.
Q. Would it -- so would the split-up signals contain all the frequencies in the input signal or would it cut out some of them?
MR. CUVIELLO: Objection. Form. Scope.
THE WITNESS: Yeah. So I'm not talking

about an RF device. I'm talking about just digital logic.
So, I'm not sure the context of your question makes a whole lot of sense to me.
BY MR. HENDIFAR:
Q. Prior to your engagement in these IPRs were you familiar with demultiplexer in RF systems?
A. I mean I think so. But, again, it's kind of a concept where to understand exactly what you're talking about, you need to look at the details.
Q. You testified that in the logic context the demultiplexer would take an input and then it would separate out the inputs into distinct parts as the output.
Did I understand you correctly?
MR. CUVIELLO: Objection. Form.
THE WITNESS: I'm sorry. Can you repeat that?
BY MR. HENDIFAR:
Q. Of course.
Did I understand you correctly that in the logical -- logic circuitry context that the demultiplexer would take an input and then it would separate out the input into distinct parts?

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1 Did I understand you correctly?
2 A. Yes. So, again, it's just that one case
3 of a digital demultiplexer part that was in the "TTL
4 Cookbook" that I referred to.
5 And so every time you see the word
6 "demultiplexer," I think a POSITA would look and see
7 what exactly is meant by that.
8 Q. But is it your testimony that in its
9 ordinary usage in this field, a demultiplexer would
10 not generally be understood as a device that
11 separates out the input signal?
12 MR. CUVIELLO: Objection. Form.
13 THE WITNESS: It could -- I think
14 that -- you know, there are so many variations of
15 what we're talking about here with "demultiplexer."
16 Right? You know, that term is used a lot.
17 And I think that, again, if we could
18 focus on more specifically what we're talking about,
19 an example or -- or a citation or something, I think
20 I could probably answer the question.
21 Because I'm having trouble understanding
22 how to answer the question other than what we've
23 already discussed, which is when you see the word
24 "demultiplexer," a POSITA would look at the details
25 to understand what that means.

1 Q. So is your testimony that a POSITA would
2 generally not know what a demultiplexer in this
3 field is unless the POSITA looks at the details of
4 the circuitry?
5 A. I'm sorry. I still didn't understand
6 what you said.
7 Q. Is it your testimony that a POSITA would
8 not know what a demultiplexer is unless the POSITA
9 looks at the details of that circuitry?
10 A. It's hard to say. Because sometimes it
11 might be clear, and sometimes you might need to look
12 at the details of the circuitry.
13 So I'm having trouble answering the
14 question in any other way other than what I've
15 testified so far.
16 Q. And I'm sorry if I don't quite remember,
17 do you teach any courses in any institution or are
18 you in the industry?
19 A. I have taught classes. And I'm
20 currently not working for a company other than on
21 cases like this.
22 Did that answer your question?
23 Q. Yes. Thank you so much.
24 And when was the last time you taught a
25 course?

1 A. So, you have my C.V. Let me just pull
2 it up, and I can perhaps look at the date and see if
3 that helps me answer the question.
4 Yeah. So, March 1983 through June 2,
5 1985 I worked as an assistant professor while
6 working at night -- I did that at night. I helped
7 taught evening -- evening school courses while I was
8 working at Scientific Atlanta.
9 Q. Got it.
10 And what -- did you teach graduate level
11 courses or undergraduate level courses?
12 A. They were considered undergraduate
13 courses.
14 Q. And what courses did you teach?
15 A. It's been a long time, so I'm just
16 reading what my C.V. says.
17 The microprocessor hardware, software
18 and electronics.
19 There were several courses, and I don't
20 remember exactly the names of the courses, but those
21 are the subject matters they included.
22 Q. And if in your classes a student showed
23 up and asked, "Mr. Lett, what is a demultiplexer,"
24 how would you explain that?
25 MR. CUVIELLO: Objection. Scope.

1 THE WITNESS: So, I think I would
2 understand the context of the question based on what
3 I had been teaching. So I would have understood the
4 details of the demultiplexer.
5 And so I think kind of like what I said,
6 a POSITA would need to look into the details of what
7 is meant by demultiplexer. And given that I would
8 have been teaching what a demultiplexer is, then I
9 would have understand -- understood the details of
10 that, what was meant by demultiplexer.
11 BY MR. HENDIFAR:
12 Q. So is it your testimony that in Zhang,
13 "selecting" and "demultiplexing" are synonymous?
14 A. I think I answered this question. But
15 if you'd like, I can try again.
16 Q. It's a "yes" or "no" question.
17 Is it your testimony that in Zhang
18 "demultiplexing" and "selecting" are synonymous?
19 A. I don't think synonymous is right -- is
20 correct. So, I think what he does is he describes a
21 box as a DEMUX. That's the block 230. And then he
22 describes what's in that box. And it's a channel
23 selector, it selects channels, selects desired
24 television channels.
25 Q. What does it mean to select a channel?

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A. So, I would say picking which channel that I'm interested in. In the -- in both the patent and in Zhang, what is done is -- is there are -- there are mixers and low-pass filters and numerically controlled oscillators that take the input -- take the input that came from a digitized full spectrum of frequencies, and it -- and it picks one of those frequencies with one of those chains of mixers, numerically controlled oscillators and demultiplexers and that as shown in the Figure 3 in Zhang and also shown in the patents that we're talking about, they do the exact same thing as Zhang; and that is, they select one channel on its own output path that is baseband that has one channel on it instead of all the channels that are represented by the fully digitized frequency spectrum.

Q. Okay. If a hypothetical system as posited was to take an input signal that has ten channels and it would separate out that input signal into ten -- ten distinct channels, would that be considered selecting the channels?

MR. CUVIELLO: Objection. Form.

THE WITNESS: So, again, one of these elements selects a channel.

Right?

So that one element of -- and I'm talking about the chain I described, the mixer, NCO and the low-pass filter, selects a channel. And if you have more than one of these elements, you had two of the chain of elements, you could select two channels and so on and so forth.

So it really depends on how many selector elements you have.

And as I described through my first declaration and test- -- and depositions and all of that is that the number of channels selected depends on the number of these three elements that I just described as shown in Figure 3 of Zhang. And that's for the patents, as well as Zhang.

BY MR. HENDIFAR:

Q. So that was not my question. And I move to strike that.

So, please focus on the question and please answer my question.

My question was if in the hypothetical system a signal went into -- went in and had ten channels and all that circuitry did was to separate out the input signal into its ten channels, would that be considered selecting?

MR. CUVIELLO: Objection. Form.

THE WITNESS: So, I think I described that scenario in my depositions and declarations.

BY MR. HENDIFAR:

Q. You talked about --

A. The number of input channels can be equal to the number of channels selected.

But also, the number in Zhang, actually also in the patents -- the patents both describe the scenario where the number of input channels --

Q. That's not my question.

A. -- is equal to the number of output channels --

Q. If you want to --

(Indecipherable simultaneous colloquy.)

MR. CUVIELLO: Counsel, can you let him finish answering the question, please.

MR. HENDIFAR: Well, he's not answering the question.

BY MR. HENDIFAR:

Q. I'm not asking about what the patent does. I'm not asking about what Zhang does.

Again, I'm familiar with the instructions for you to go back to what you have

memorized, but that's not my question, Mr. Lett.

So I'm not asking you about what Zhang does. I'm not asking what the patent does. I'm not asking about mixers, filters, how many mixers are there. None of that is my question.

My question is if a hypothetical system takes an input with ten channels and all it does is that it separates out the input signal into its ten channels, would that be understood as selecting the channels?

MR. CUVIELLO: Objection. Form and scope.

THE WITNESS: By the way, my testimony is my opinion. And so you keep saying something about I've been told to say this or that. This is my testimony and my opinion. Just to be clear.

BY MR. HENDIFAR:

Q. Please answer my question.

In a hypothetical system -- well, if -- if that's the case, I expect that you would actually answer my questions, Mr. Lett.

So the question is if in a hypothetical system there is an input signal with ten channels and all that circuitry does is that it separates the input signal into its ten constituent channels, is

MAGNA LEGAL SERVICES

that considered selecting?
MR. CUVIELLO: Objection. Form and scope.
THE WITNESS: So is this hypothetical system a television system?
BY MR. HENDIFAR:
Q. Sure.
A. Is it like a set top box?
Q. Yes.
A. So, again, each channel is selected in that hypothetical system up to and including -- up to the number of input channels. It can be less than or equal to the number of input channels.
Q. So my hypothetical was -- maybe you misunderstood my hypothetical. So let me then repeat it again.
So, in this hypothetical all the circuitry does always indiscriminately just separates out the input signal into its ten constituent channels. That's all it does, indiscriminately that variation.
So, let me repeat maybe the hypothetical if that helps?
So in a television system, as you asked for the context, if there is a circuitry and all

that circuitry does is that it takes an input signal with ten channels and invariably and indiscriminately all it does is that it separates that input signal into its ten channels, is that considered selecting?
MR. CUVIELLO: Objection. Form and scope.
THE WITNESS: So, as I explained in my depositions and declarations, selecting includes selecting all of the channels, but it also can include selecting less channels and can be any value up to the total number of channels in the signal band.
And that's for Zhang and that's also for the patents.
BY MR. HENDIFAR:
Q. Again, you're going back to your discussion of Zhang, correct?
A. So, the discussion of Zhang that I just described, if you had ten channels is your hypothetical scenario.
Q. So it is your view that Zhang can select less than and up to all of the channels, and it depends on the instance where -- how many channels it wants, right?

So that's not my question.
A. No. That's not what I said.
Q. Okay.
A. Zhang can select up to or less than the number of channels based on the number of these elements, mixers, low-pass filters and NCOs. And they can select one channel for each of those string of elements.
Q. Right. And I'm not asking about Zhang and I'm not asking about a system that can select less than and up to the number of channels.
So maybe -- I'm not sure which part of my question is ambiguous to you.
I'm not asking about a system that selects up to all the channels. I'm not asking about a system that selects some channels and it may happen sometimes to select all the channels. That's not my question.
So I'll repeat the question. If you don't understand it, let me know which part and we can elaborate. But just answer my question.
In a hypothetical television system if all that a circuitry does is that it separates out an input signal into all of its constituent channels, always indiscriminately, is that

considered selection?
MR. CUVIELLO: Objection. Form and scope.
THE WITNESS: I don't know. I don't know if that's selecting. Because -- I'm not sure.
Because if you were not specifically picking the channels, I don't see a need for a numerically controlled oscillator to go -- to move around and pick out a channel.
So I'm getting confused because of your hypothetical scenario.
And you don't want me to talk about the architecture or construction of devices that we've been discussing with both patents and Zhang.
So, you know, I think your hypothetical scenario may be a different design. I'm not sure.
BY MR. HENDIFAR:
Q. Is it possible -- is it possible to select channels just by mixers and numerical oscillators?
A. I think that's what we're doing with -- with both Zhang and the patents, is we're selecting a channel of a number of channels with -- with a mixer and oscillator and low-pass filter.
Q. Now, in your declarations you testified

MAGNA LEGAL SERVICES

that -- let me step back.
If you have a television system that takes an input signal with ten channels and outputs two channels, is it your opinion that that circuitry is necessarily selecting channels?
MR. CUVIELLO: Objection. Form.
THE WITNESS: I don't know. You know, if the -- if the -- if it only selects two channels that are always the same, I don't know if that's selecting or not. If, you know, by design, the design always picks a certain two, you know, I'm not sure.
But selecting to me means that, you know, you've got a bunch of choices and you're picking one of them. Right?
Where -- so, and that's exactly what architecture we've been talking about.
BY MR. HENDIFAR:
Q. So, if you have a hypothetical television system that takes an input signal and all it does is that it separates out that input signal into its constituent channel, all of them, without exception, without variation, that wouldn't be selecting, correct?
MR. CUVIELLO: Objection. Form.

THE WITNESS: I don't know. Because is the selecting done by -- by the design ahead of time?
I mean or is it -- so, unless you have, in my opinion, the numerically controlled oscillators to move around and, you know, pick one of many choices -- and again, you can pick -- you can pick one, two, three, four, five, six, seven, eight, nine, ten, right? With ten of these elements, right?
But if they are always doing the same thing and -- and perhaps you don't even have numerically controlled oscillators, perhaps it just always, you know -- it wouldn't have the structure of either the patent or the Zhang reference, I'm not sure if that's selecting or not.
I really haven't thought about that or rendered an opinion on it, I don't think.
BY MR. HENDIFAR:
Q. So, just so I make sure I understand you correctly, and if I misunderstand, please correct me, you don't --
Let's start if you have a hypothetical system and that -- a television system and all that circuitry does is that it takes an input signal and

separates it out into its constituent parts, invariably without exception always separates out the input signal into all of its constituent parts, you don't have -- actually, we said channel. So strike that and let me repeat my question. I'll restate the question.
Did I understand you correctly that sitting here now with the hypothetical of a television channel -- a television system that takes an input signal and, as a matter of design, all it does invariably all the time is that it separates out the input signal into its constituent channels and that's all it does, sitting here now you do not have an opinion whether that is selecting or not?
MR. CUVIELLO: Objection, Counsel. He's answered -- you've asked this and he's answered.
MR. HENDIFAR: Don't interrupt me. Don't interrupt me.
BY MR. HENDIFAR:
Q. Sitting here now you do not have an opinion about that -- whether that's selecting or not, correct?
MR. CUVIELLO: Objection. Form, scope, asked and answered.
MR. HENDIFAR: That's not a -- that's a

speaking objection, Counsel.
BY MR. HENDIFAR:
Q. So because of counsel's speaking objection. I'll repeat my question.
MR. HENDIFAR: And, Mr. Cuviello, please only put your objections. Asked and answered is a speaking objection.
And don't give me a lecture in the middle because -- don't interrupt my question.
BY MR. HENDIFAR:
Q. So, Mr. Lett, I want to make sure I understood you correctly.
In a hypothetical with a television system where a circuitry, all it does is that it takes an input signal and indiscriminately separates out that input signal into its constituent channels, all of its constituent channels without exception, sitting here now you do not have an opinion as to whether that is selecting or not?
Did I understand you correctly?
MR. CUVIELLO: Objection. Form and scope.
THE WITNESS: Yeah. I do not have an opinion on that hypothetical system, because I have not seen the details of that hypothetical system.

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I've only really been looking at the -- in detail, and I thought I was going to answer questions about my reply declarations having to do with the patents that we've been talking about, the three subject patents and the -- and the background references.

BY MR. HENDIFAR:

Q. Now may I please refer you to the '362 Patent.

A. I'm sorry. Could we take a break for a few minutes, if you don't mind.

Q. No. Of course. It can be longer. I'm sorry I didn't offer. I lost track of time.

How much of a break would you like?

A. I'm good with five minutes unless y'all want longer.

MR. CUVIELLO: Can we do ten?

MR. HENDIFAR: Sure.

THE WITNESS: Okay.

MR. HENDIFAR: Let's come back at ten minutes past the hour.

(Brief recess.)

BY MR. HENDIFAR:

Q. Mr. Lett, welcome back.

During the break did you speak with

anybody about the contents of your deposition?

A. No.

Q. May I please refer you to the '362 Patent.

A. Okay.

Q. And please let me know when you have it.

A. Okay. I have it.

Q. So, column one lines 29 to 31 reads, quote,

"Because the swath of channels is not contiguous, the swath includes the desired channels as well as undesired channels," end quote.

Do you see that?

A. Yes. Do you mind if I highlight it on my paper copy?

Q. Sure. Go ahead.

A. Okay. Okay.

Q. And have you reviewed the Background section of the '362 Patent column 1 line 15 to column 2 line 27?

A. Not just now, but previously I have.

Q. Okay. Do I understand it correctly that what the Background section of the '362 Patent explains was that the incoming signal includes both

desired and undesired channels and that complete input signal with both desired and undesired channels were sent to the demodulator, and it was the demodulator that had to first select the desired channels before demodulating them and, as explained in column 2 line 20, that process would require very expensive circuitry within the demodulator because the demodulator received both desired and undesired channels?

Did I understand these aspects of the background of the '362 Patent correctly?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I'm sorry. I sort of lost you on that long question.

Would you mind breaking it up into sections for me?

BY MR. HENDIFAR:

Q. Sure. Of course.

So, column -- what I was trying to save time, but we can go sentence by sentence. That's not a problem.

May I please refer you to column 1 of the '362 Patent lines 29 to 31.

A. Okay.

Q. And this is in the Background of the

invention in the '362 Patent, correct?

A. It's in the Background section of the '362 Patent, yes.

Q. And this Background section discusses what the '362 Patent considers to be its prior art, correct?

A. I think so.

Q. And Figure 1 of the '362 Patent discussed in the Background of the invention is what the '362 Patent considers to be its prior art, correct?

A. Yes. It says Figure 1 shows a conventional wideband tuner 100.

Q. And on column 2 starting on line 20, it states, quote,

"The wide bandwidth of 800 megahertz would require a very expensive digital processing circuitry such as very high-speed analog to digital conversion and high-speed processor in the demodulator," end quote.

Do you see that?

A. Yes.

Q. Okay. How does the '362 Patent

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1 architecture address the issue of the requirement
2 for very expensive circuitry within the demodulator
3 that it identifies as an issue in this prior art?
4 MR. CUVIELLO: Objection. Form.
5 THE WITNESS: So, I think you asked me
6 the same question in my first deposition.
7 Could we just refer to that answer?
8 BY MR. HENDIFAR:
9 Q. I honestly don't know what question
10 you're referring to.
11 So if you know the answer, please
12 provide the answer. If you don't -- let me -- let
13 me ask you --
14 A. I believe I answered in my first
15 deposition that question.
16 Q. Do you have a line number for that
17 question?
18 A. I will find it.
19 Do you happen to remember the exhibit
20 number?
21 Q. 2018.
22 A. Thank you.
23 Q. But if it's going to take more than a
24 minute or so, I don't want to waste time so I want
25 to -- because you would have to answer -- you would

1 have answered the question already.
2 A. Yeah. So if you look at Exhibit 2019,
3 starting with -- let's see.
4 How do I refer to it? By page number?
5 Q. Sure.
6 A. Okay. Page number 13. That's the
7 beginning of the questioning on line -- let's call
8 it, line two.
9 Q. I don't see a question identical to the
10 one I just asked you.
11 A. I think if we follow this section, we'll
12 find this was leading to that question.
13 Why would the band -- the bandwidth of
14 Figure 1 require very expensive digital processing
15 circuitry. And then --
16 Yeah. Look at page 15 starting with
17 line 20.
18 Q. That's not the same question I just
19 asked you.
20 A. It says,
21 "How would the receiver achieve
22 this without expensive data
23 conversion filtering and channel
24 selection at the demodulator?"
25 Is that not the same question?

1 Q. No.
2 A. I'm having a hard time figuring out what
3 the difference is.
4 Q. That's fine.
5 You can answer -- so let's go back and
6 actually answer my questions. I don't believe it is
7 proper procedure for you to try to deflect from my
8 questions and say go look at my last deposition.
9 A. I was trying to save time because I
10 thought I had answered this question.
11 Q. You just wasted five minutes looking for
12 a non-existent question. So I don't know if that
13 achieved your purpose.
14 A. I disagree. It's the same question.
15 But go ahead.
16 Q. Sure.
17 Going to figure -- I'm going to go back
18 and repeat the question, but I want to make it
19 easier for you.
20 Going to Figure 1 of the '362 Patent.
21 And you agree that in Figure 1 the
22 hashed frequencies are the desired channels and the
23 blank frequencies are the undesired channels as the
24 '362 Patent refers to them.
25 Correct?

1 A. I don't remember saying that.
2 Q. I'm asking a question. I'm not saying
3 you said or understood that --
4 A. I thought you said "you agreed."
5 Q. I'm asking if you agree. Right. So --
6 A. I'm sorry. I misunderstood your
7 question.
8 Q. I'll repeat the question.
9 Looking at Figure 1 of the '362 Patent,
10 you agree that the hashed frequencies are what the
11 '362 Patent refers to as desired channels and the
12 blank frequencies are what the '362 Patent refers to
13 as undesired channels, correct?
14 A. I don't really know if he says that the
15 ones that are hashed are marked other than white --
16 other than blank in Figure 1, element 110 is the
17 desired channels, but I think that's the way I
18 understand it.
19 Q. And in Figure 1, what is added to the
20 demodulator is the bandwidth BW1 which contains both
21 what the '362 Patent describes as desired and
22 undesired channels, correct?
23 A. Well, I think what Figure 1 is showing
24 that the input BW1 that shows ten channels that
25 were -- it's frequency shifting the ten channels to

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an IF output presumably at a different frequency, probably a lower frequency than the RF input.
Q. And that IF output goes to the demodulator, right?
A. This says IF output to demodulators.
Q. So let me repeat my question.
In Figure 1 of the '362 Patent, the frequency bandwidth BW1 that is output to the demodulator contains both the desired and undesired channels, correct?
A. It contains all ten channels that were input.
Q. Okay. Now --
A. They're shifted in frequency.
Q. Right. Now going to now Figure 4 of the '362 Patent, and it's in one of the embodiments.
Do you see that?
A. Yes.
Q. And do you see on the right-hand side of Figure 2 "IF output"?
A. Yes. You -- I'm sorry. You said Figure 2. I think you meant Figure 4.
Q. No. I did say four. I'm sorry if I -- I did mean four. If I said two, I'm sorry.
So, looking at Figure 4 of the

'362 Patent.
And do you see on the right-hand side it says "IF output"?
A. Yes.
Q. And that's an output to the demodulator, correct?
MR. CUVIELLO: Objection. Form.
THE WITNESS: I didn't quite understand a word you said.
Can you say it again.
BY MR. HENDIFAR:
Q. Of course.
The IF output in the Figure 4 is the output to the demodulators, correct?
A. I don't know. I'll have to look. Because I don't remember.
Q. Okay. So let's look at Figure 2, so if that makes it easier for you.
A. Okay.
Q. In Figure 2 of the '362 Patent, on the right-hand side there is the serial or parallel data interface to demodulator.
Do you see that?
A. Yes.
Q. Okay. And in Figure 2 the RF input

contains the ten channels, some of it hashed/desired, some of it blank/undesired, correct?
A. Yeah. Some of them are hashed and some of them are not hashed.
Q. Okay. And the '362 Patent explains that the hashed ones are the desired channels, correct?
A. That's what I wasn't sure about. But I couldn't find it in that previous section.
Q. Okay. Let me help you out.
A. But I can look for that to see if that's correct.
Q. Yes. Look for that.
And I think I know where it is. Let me find it. But feel free to also look if you like.
So, if you look at column 4 of the '362 Patent, starting on line 27 in the example shown, and that's the discussion of Figure 2,
"RF signal 102 includes four desired RF channels having the respective carrier frequencies 1, 2, 3 and 4."
Do you see that.
A. "Includes four desired RF channels having the respective carrier frequencies."

Yes, I see that.
Q. Okay. And going to Figure 2, do you see that the hashed channels are shown having frequencies of FR, F1, 2, 3 and 4?
A. Yes.
Q. Okay. So in Figure 2 the RF input signal contains ten channels which consists of the four hashed ones that are desired channels and the remaining ones that are undesired channels, correct?
A. That seems correct, yes.
Q. And in the embodiment of Figure 2 in the '362 Patent, what's output to the demodulators on the right-hand side contains only the desired channels and none of the undesired channels, correct?
A. So, what figure are you referring to?
Q. Figure 2.
A. Okay. Ask your question again, please.
Q. Of course.
And in Figure 2 of the '362 Patent, what's output to the demodulators contains only the desired channels and none of the undesired channels, correct?
A. So, there was a case where I cited from the '362 in my second declaration that all the

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1 channels input in the '362 specification output to
2 the demodulator.
3 Q. So I'm discussing the Figure 2
4 embodiment. So I'm discussing the Figure 2
5 embodiment. So if you'd like to review the Figure 2
6 embodiment, please feel free.
7 The question is in the Figure 2
8 embodiment, what's output to the demodulators are
9 only the desired channels and none of the undesired
10 channels, correct?
11 A. So, the '362 Patent gives an example
12 where all the input channels are output to the
13 demodulator. That's in 5, 36 through 39, where it
14 says,
15 "N is equal to the number of all
16 available channels that exist in
17 the licensed frequency spectrum, or
18 all receivable channels within a
19 geographic area."
20 So, all channels include the undesired
21 channels in that example of the '362 Patent.
22 Q. And you see that in column 5 --
23 A. I'm sorry. Hang on. That might be --
24 yeah. That's the '206 I was quoting there.
25 Let me see if that quotes in the '362.

1 I think it is because it's the same specification.
2 So let me find that.
3 Yes. That same -- that same quote is in
4 the '362.
5 Q. Okay. And in column 5 of the '362
6 starting on line 43, the same paragraph that you
7 were reading from says,
8 "In the exemplary embodiment shown
9 in Figure 2, the number of desired
10 channels is four."
11 Do you see that?
12 A. I'm sorry. What line numbers again?
13 Q. Column 5, line 43.
14 A. Yes. I see that.
15 Q. Okay. And regardless of whether the
16 desired channels is four or it's all the channels or
17 whatever the number is, all of the desired channels
18 are transmitted to a demodulator in the embodiment
19 of Figure 2, correct?
20 A. This says,
21 "In an embodiment each of the
22 filter signals 260a to 260n may be
23 sent to an associated demodulator."
24 That's in column 5 row 54 through 56.
25 Q. So, I'm sorry if I was not right

1 following the link, but the question was in the
2 Figure 2 embodiment of the '362 Patent, all the
3 undesired channels are transmitted to the
4 demodulators, correct?
5 A. Yes. But it also could be all the
6 channels according to what I just read.
7 Q. Right. And in -- and in the case where
8 all the channels are desired channels, then all the
9 channels are transmitted to the demodulator -- let
10 me step back.
11 In -- is it your -- let me step --
12 My understanding of the '362 Patent was
13 that capital letter "N" denotes desired channels
14 whether that's four, eight or happens to be all the
15 channels, a capital "N" is the desired.
16 Did I misunderstand or do you have the
17 same view?
18 MR. CUVIELLO: Objection. Form.
19 THE WITNESS: So, according to the
20 citations I just read and also Figure 2 on the right
21 side, it says,
22 "N filtered and decimated baseband
23 channels."
24 It doesn't say anything about desired or
25 undesired.

1 And what I just read basically says it
2 can be up to or less than -- and can be up to or
3 less than the number of RF channels on the input.
4 Q. But is it your testimony that the
5 patent -- the '362 Patent's embodiments, at least
6 some embodiments transmit both the desired and
7 undesired channels to the demodulators?
8 A. They can, yes. That's what I just read
9 in those citations.
10 Q. And how would that be different from the
11 prior art that the patent had -- said has
12 deficiencies in the Background of the invention?
13 A. So, as I show in my declaration -- or my
14 second declaration, on page three with the diagram,
15 which includes Figure 2 that we just talked about,
16 it's the same between Zhang and the '362 Patent.
17 And similarly these diagrams are in the other two
18 patents.
19 Q. Mr. Lett, was my -- did my question say
20 anything about Zhang?
21 A. Zhang is prior art, correct?
22 Q. Did I say generally prior art?
23 My question was how would an embodiment
24 of the '362 patent that transmits both in your view
25 desired and undesired channels to demodulators be

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1 different from the prior art that the patent
2 discusses in its Background of the invention?
3 A. I -- as a POSITA, one would look at a
4 patent, I think, and not necessarily go and look at
5 all the background references and prior art
6 references.
7 I think a POSITA would take the patent
8 at face value and read it and understand it.
9 So, I don't -- I have not looked at -- I
10 may have, but I don't remember looking at the prior
11 art -- all the prior art references. But there's
12 quite a bit.
13 Q. You are misunderstanding my question.
14 Let me help you. I think you may have
15 misunderstood my question.
16 Let me -- let me step back.
17 Do you recall we discussed the patent's
18 discussion of -- in its Figure 1 of what it
19 described as prior art?
20 A. Yes.
21 Q. Okay. And in the patent's Background of
22 the invention columns 1 and 2, the patent describes
23 what it considers its prior art, including its
24 Figure 1, correct?
25 A. I'm sorry. That last part I didn't

1 hear.
2 Q. And in its Background of the invention,
3 the '362 Patent discusses what it considers to be
4 its prior art, including its Figure 1, correct?
5 A. Yes.
6 Q. And in what the '362 Patent discusses to
7 be its prior art in its Background of the invention,
8 it explains that one of the shortcomings of those
9 prior art systems was that they would transmit both
10 desired and undesired channels to the demodulators.
11 Do you recall that?
12 A. I don't know if I do.
13 Can you point me to that?
14 Q. Sure. So, we walk -- let me walk
15 through it again. No worries.
16 So column 1 line 29 states,
17 "Because the swath of channels is
18 not contiguous, this swath includes
19 the desired channels as well as
20 undesired channels."
21 Do you see that?
22 A. Yes.
23 Q. And then we looked at Figure 1 where we
24 discussed what goes out of Figure 1 to the
25 demodulator includes both the desired and undesired

1 channels.
2 Do you recall that?
3 A. Yes.
4 Q. Okay. And going back to column two of
5 the '362 Patent, we discussed that the patent says
6 starting on line 20 column 2 that this approach of
7 sending the entirety of the input signal both
8 desired and undesired channels, quote,
9 "Would require a very expensive
10 digital processing circuitry such
11 as very high-speed analog to
12 digital conversion and high-speed
13 processor in the demodulator."
14 Do you recall that discussion?
15 A. Yes. But I think you maybe reversed the
16 column and line numbers in that question. So in
17 column 2 line 20 --
18 Q. Correct.
19 A. -- instead of column 20 line 2.
20 Q. I'm sorry if I misspoke.
21 But do you recall that discussion?
22 A. Yes.
23 Q. Okay. So my question is how would
24 embodiments of the patent that in your view transmit
25 both the desired and undesired channels to the

1 demodulator be different from the patent's Figure 1
2 embodiment which the patent says is its prior art
3 and it's deficient in part because it transmits both
4 desired and undesired channels to the demodulator?
5 MR. CUVIELLO: Objection. Form.
6 THE WITNESS: I mean are you asking me
7 the difference between Figure 1 and Figure 2?
8 BY MR. HENDIFAR:
9 Q. I am asking -- well, no. I am asking --
10 let me rephrase the question.
11 If the patent's embodiments transmit
12 both the desired and undesired channels to the
13 demodulator, how would they overcome the issue that
14 the patent identified in its prior art of requiring
15 expensive circuitry when you transmit both desired
16 and undesired channels to the demodulator?
17 MR. CUVIELLO: Objection. Form.
18 THE WITNESS: So, the prior art in
19 Figure 1 that he's talking about seems to be just a
20 straight RF mixer, you know, followed by, you know,
21 amplification and filtering.
22 BY MR. HENDIFAR:
23 Q. Uh-huh.
24 A. And in other words, it doesn't show any
25 analog to digital converter in -- in number one.

MAGNA
LEGAL SERVICES

1 And as we discussed in my previous
2 testimony with another deposition, if you use the
3 architecture of Figure 2 or Figure 3 of Zhang, which
4 is the mixers and the -- and the -- you know,
5 numerically controlled oscillators and so on -- I'm
6 sorry. You -- I'm sorry.
7 Scratch that answer. I was -- that's
8 not correct.
9 Let me restate that.
10 So, if you look at Figure 2 of the
11 '362 Patent, the radio front end, the output is an I
12 and Q signal. And the I and Q signal requires half
13 the bandwidth -- half the sampling rate for the
14 analog to digital converters, you know, with a
15 little margin.
16 But let's just say instead of
17 800 megahertz, those ADCs need 400 megahertz
18 sampling rate plus a little bit of margin.
19 So that's the advantage, you know, of
20 the very high-speed analog to digital conversion
21 that he's talking about.
22 Q. Why is he talking about digital
23 circuitry in the demodulator being expensive in
24 column 2 line 20?
25 A. Because the digital circuitry in the

1 demodulator in Figure 1 would have to demodulate
2 a -- well, again, he didn't really say, you know,
3 what is the architecture of the demodulator.
4 Right?
5 But presumably what he's talking about
6 there is that since the prior art is all analog, all
7 RF -- right? -- not -- in other words, not
8 digitized, you know, and then -- you know, what he's
9 showing here is the I/Q demodulator at the front end
10 that requires half the bandwidth before the ADC so
11 that the ADC sampling rate could be lower.
12 I think that's what he's talking about
13 there, is that if the demodulator, if he did it all,
14 you know, at one, two, three, four, five, six,
15 seven, eight, nine, ten channels of bandwidth, you
16 know, if you're going to essentially demodulate
17 that, and if you wanted to use analog to digital
18 converters and presumably didn't have I/Q
19 demodulators in the demodulator, that he probably is
20 saying that -- that it would probably require a more
21 expensive analog to digital converter.
22 It's hard to say because he doesn't
23 really describe what he's talking about in the
24 demodulator.
25 Q. Now, you testified in Figure 2 of the

1 '362 Patent in your view both desired and undesired
2 channels could be in an embodiment transmitted or
3 output to the demodulator.
4 Correct? Did I understand correctly?
5 MR. CUVIELLO: Objection. Form.
6 BY MR. HENDIFAR:
7 Q. I'm sorry. I couldn't hear your answer,
8 Mr. Lett.
9 A. Can you re-ask the question?
10 Q. Of course.
11 Did I understand you correctly that in
12 your view, in the embodiment in Figure 2 of the '362
13 Patent, both the desired and undesired channels
14 could be output to the demodulator?
15 MR. CUVIELLO: Objection. Form.
16 THE WITNESS: That's probably -- sorry.
17 MR. CUVIELLO: Sorry. I wasn't quick
18 enough.
19 Objection. Form.
20 THE WITNESS: Yeah. So, I said in
21 section specifically in column 5 that -- that it
22 said that it did. So that's what I'm basing it on.
23 BY MR. HENDIFAR:
24 Q. Now, in the embodiments of the
25 '362 Patent, what does it mean for a channel to be a

1 desired channel?
2 A. I'm not sure he defines what desired and
3 undesired are in the '362 or the other two patents
4 or the specification. It just talks about there are
5 desired channels and there are undesired channels,
6 as far as I remember.
7 Q. Would a person of ordinary skill in the
8 art understand reading the '362 Patent embodiments
9 when the patent refers to desired channels, from
10 whose perspective or from what perspective are those
11 channels desired?
12 MR. CUVIELLO: Objection. Form.
13 THE WITNESS: So, I don't know what a
14 POSITA would understand. But if you read this
15 patent -- well, no. Let me rephrase that.
16 A POSITA would look at this Figure 2 and
17 description of desired and undesired channels and
18 understand that as we've discussed that the ones
19 that are shaded in one form or another in this
20 diagram are -- are what he calls desired and the
21 ones in white are undesired.
22 BY MR. HENDIFAR:
23 Q. But what does it mean for the channel to
24 be desired? Desired by who?
25 MR. CUVIELLO: Objection. Form.

MAGNA
LEGAL SERVICES

THE WITNESS: I don't think the patent says desired by who or who desires it. I suppose the patent inventor desires it or doesn't desire it.

I'm not sure, to answer your question.

BY MR. HENDIFAR:

Q. Would a person of ordinary skill reading the '362 Patent understand what the distinction is between desired and undesired channels?

A. So, yes. As I described, I think that one would understand that what the patent inventor meant by desired is shown in those shaded sections of Figure 2, and what he meant as undesired are shown in the white sections representing those channels of Figure 2.

Q. If the '362 Patent -- strike that.

What does -- what do the embodiments of the '362 Patent achieve by dividing the channels into desired and undesired and treating them separately?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I think what the inventor is trying to describe is that you have a bunch of channels coming in and you're selecting certain of those channels to go to the next stage. Or -- and eventually either some or all of those can be output

to a demodulator.

BY MR. HENDIFAR:

Q. Is it possible that a desired channel is not output to the demodulator?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I suppose it is possible. I don't know if he describes that.

BY MR. HENDIFAR:

Q. Then let me phrase my question.

Would a POSITA reading the '362 Patent understand that the desired channels are always output to the demodulator?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I don't have an opinion on that.

BY MR. HENDIFAR:

Q. Now, in order -- if you were to watch a television channel in this field, the channel would first have to be demodulated, correct?

A. I think that's the normal understanding. I was trying to think if there's a case. I don't know. Maybe there is.

Q. I'm not asking that question. I'm just laying the foundation for the technology.

A. Okay.

Q. It's not to be a trick question.

A. Perhaps there's some technology I don't know about.

Q. Okay. But as far as you know, in order for a viewer to watch a television channel in this field, the channel has to be demodulated, correct?

A. Yeah. In the context of these patents, yes.

Q. Now, in Zhang's selector 240, what criteria does Zhang use to select the M channels from the N channels output from the demultiplexer?

MR. CUVIELLO: Objection. Form.

THE WITNESS: Can you restate that, please?

BY MR. HENDIFAR:

Q. Sure.

In Zhang's selector 240, what criteria does that selector 240 use to select the M channels from the N channels output from the demultiplexer?

MR. CUVIELLO: Objection. Form.

THE WITNESS: The selecting is done by 230, not 240.

BY MR. HENDIFAR:

Q. Is it your view that selector 240 performs no selection?

A. 240 is a switch. And it also includes time division multiplexing circuitry. And it outputs serial data and/or parallel data.

And I know I said it's very flexible in our last deposition, which it is. So this switch can perform a number of functions.

It's essentially representative, as I show on page three of my second declaration, the diagram where the orange part of -- which is -- which is 240 is represented by the orange line of the patent, which -- that provides serial or parallel data interface to the demodulator.

Q. Well, that did not answer my question.

Is it your testimony that Zhang's selector 240 does not perform any selection?

A. It can select from the C1 through CN that are input. And the C1 and CN are the desired channels based on the number of elements of mixers, NCOs and low-pass filters.

The selecting is done by -- by 230. And there is some further -- further flexibility provided by block 240.

And so one of the reasons that Zhang shows the embodiment of 240, as he says for fast channel change, so one might select from among --

MAGNA LEGAL SERVICES

so, let's call them desired channels, C1, CN. Right?

From those -- and it may be only able to watch one channel at a time. So one of the applications that Zhang describes that's achieved by this flexible architecture is that those channels can be essentially available for demodulation --

Q. Look, I understand --

A. -- for fast channel change.

Q. Again, I know you take offense to my comment, but I don't need a memorized answer to my question that is not responsive.

My question is really yes or no.

Is it your testimony that Zhang's selector 240 performs any selecting? Does it or does it not?

MR. CUVIELLO: Objection. Form.

THE WITNESS: I think it provides the output to the demodulator. The selecting is done by 230.

BY MR. HENDIFAR:

Q. Is your testimony --

A. Providing the output to the demodulator is done by block 240.

Q. So it's your testimony that Zhang's

selector 240 does not perform any selection, correct?

THE CLERK: Objection to form.

THE WITNESS: Again, 240 provides the output that's selected from --

BY MR. HENDIFAR:

Q. My --

A. -- the block 230. The selecting is done by 230.

Q. I'm not asking whether or not 230 also selects. I'm asking if 240 selects or not.

So, I'll repeat the question.

It's not a complicated question, and I request that you actually answer my question.

Is it your testimony -- well, strike that.

Your testimony is that the selector 240 in Zhang performs no selection, correct?

MR. CUVIELLO: Objection. Form.

THE WITNESS: So, what I did was I looked at the prior art and I mapped it to the claim elements.

BY MR. HENDIFAR:

Q. That's not my question.

A. And the architecture of Zhang has much

more capability --

Q. That is also not my --

A. -- than is described by the patents.

Q. That is also not my question.

A. And so mapping the claim elements to Zhang, the selection is done by Zhang in the block 230. The providing the outputs is provided is by block 240.

Zhang's 240 can do a lot more than that.

Q. So which is my question. Is it your testimony that Zhang selector 240 performs any selection? Yes or no?

MR. CUVIELLO: Objection. Form.

THE WITNESS: It can provide with a -- it's a switch. Right? It can provide some routing, let's call it, of signals to the output in a very flexible way.

BY MR. HENDIFAR:

Q. I didn't ask --

A. It certainly implements the functionality of the '362 Patent and the other two patents in this embodiment.

Q. Did I ask you if the selector provides routing?

A. I'm sorry. I didn't understand what you

said.

Q. Did I ask you if the Zhang selector provides routing?

A. I don't remember.

Q. Did I ask you if Zhang's demultiplexer performs selection?

I did not.

A. I don't know.

Q. Did I ask you how you mapped Zhang to the claim?

MR. CUVIELLO: Objection. Form.

THE WITNESS: What I'm trying to explain is what you're calling selecting of the block -- the box 240 in Zhang is more like a switch.

BY MR. HENDIFAR:

Q. But does it select?

A. So, we've been talking about selecting in the context of selecting a desired channel from a swath of frequencies, a whole bunch of channels. And the selecting is done by those elements I keep talking about; the mixer, the NCO and the low-pass filter.

The box 240, even though it's named N by N selector, it's really a switch, and it also has some capability to provide serial or parallel

MAGNA LEGAL SERVICES

1 outputs of the desired channels that are selected by
2 block 230 in the desired channels being C1 through
3 CN.
4 Q. So is it your testimony that
5 selector 240 performs no selections and all it is
6 described as doing is providing an output
7 potentially to a serial interface?
8 MR. CUVIELLO: Objection. Form.
9 THE WITNESS: So I would say that
10 box 240 does switching and -- and converting the
11 signal to the proper format for output, providing
12 those signals to the output.
13 BY MR. HENDIFAR:
14 Q. But that doesn't answer if it does
15 selection or not.
16 A. In the context that we've been talking
17 about selection, it does not. The selection is done
18 by box 230.
19 Q. Is there any context in which the
20 selector 240 in Zhang be considered as performing a
21 selection in your opinion?
22 MR. CUVIELLO: Objection to form.
23 THE WITNESS: Again --
24 BY MR. HENDIFAR:
25 Q. Go ahead.

1 A. The definition of "selection" in this --
2 in this discussion, this whole testimony, is about
3 choosing from a swath of frequencies, all the input
4 frequencies or multiple frequencies and multiple
5 channels, picking one or more of those to move on to
6 the next stage. And that's exactly what 230 does.
7 That is selecting per the context of all these
8 patents.
9 Q. In your declarations you have relied on
10 the plain and ordinary meet meaning of "selecting,"
11 correct?
12 A. So, as I say in paragraph 27 of my
13 second reply declaration, a POSITA would have
14 understood that plain and ordinary meaning of select
15 said polarity -- plurality of desired television
16 channels is what each signal path shown in Figure 2
17 and 3 of the '362 does.
18 Q. That wasn't my question.
19 The question was in your analysis you
20 relied upon the plain and ordinary meaning of
21 "selecting," correct?
22 A. A POSITA would have understood the plain
23 and ordinary meaning, yes.
24 Q. And you have not provided a explicit
25 construction for the plain and ordinary meaning of

1 "selecting," correct?
2 MR. CUVIELLO: Objection. Form.
3 THE WITNESS: I mean I'm not an
4 attorney. When you talk about constructions, that
5 sounds like I need to be an attorney to understand
6 it.
7 BY MR. HENDIFAR:
8 Q. I'm asking if you have provided one.
9 In your declarations have you provided
10 the construction for the word "selecting"?
11 MR. CUVIELLO: Objection. Form.
12 THE WITNESS: I'm not sure that I have.
13 Perhaps I did. And if I did, maybe you can point me
14 to it.
15 BY MR. HENDIFAR:
16 Q. It's your declarations.
17 I'm asking if you have provided a
18 construction for selecting.
19 THE CLERK: Objection. Form.
20 THE WITNESS: So I used the plain and
21 ordinary meaning of "select" consistent with the
22 '362 Patent disclosure.
23 BY MR. HENDIFAR:
24 Q. Have you provided a construction for
25 that -- for what that plain and ordinary meaning is?

1 A. What do you mean by "construction"?
2 Q. Okay. Do you understand what
3 "construction" means?
4 A. I'm not sure I do.
5 MR. CUVIELLO: Objection.
6 BY MR. HENDIFAR:
7 Q. So, sitting here you don't know what it
8 means when I ask you if you have provided a
9 construction for the word "selecting"?
10 Is that your testimony?
11 MR. CUVIELLO: Objection. Form.
12 THE WITNESS: Can you tell me what you
13 mean by "construction"?
14 BY MR. HENDIFAR:
15 Q. I am asking if you understand my
16 question.
17 So, is it your testimony that sitting
18 here now you don't know what it means when I ask you
19 if you have provided a construction for "selecting"?
20 A. I don't know what you mean --
21 MR. CUVIELLO: Objection.
22 THE WITNESS: -- by that.
23 MR. CUVIELLO: Objection. Form.
24 BY MR. HENDIFAR:
25 Q. You don't know what I mean when I ask

MAGNA
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1 you if you have provided a construction for
2 "selecting"?
3 Is that your testimony?
4 MR. CUVIELLO: Objection. Form.
5 THE WITNESS: I think "construction" has
6 a very legal term, legal definition. And me not
7 being a lawyer, I'm not sure I fully understand
8 exactly what that means.
9 So I would appreciate it if you could
10 define it for me, and then perhaps I can answer your
11 question better.
12 BY MR. HENDIFAR:
13 Q. If I may refer you to Exhibit 1002, your
14 first declaration for the '362 Patent.
15 A. Okay.
16 Q. And on page 18 do you see that you have
17 a section titled "Claim Construction"?
18 A. Yes.
19 Q. And do you see paragraph 34, you
20 testified that, quote,
21 "I have been asked to consider a
22 potential construction of 'digital
23 circuitry'"?
24 A. Yes.
25 Q. On page 133 of your declaration --

1 A. I'm sorry. We were on page 19.
2 Did you switch to a different page?
3 Q. I'm now on page 133 of that declaration.
4 Do you see the heading says,
5 "Alternate grounds based on means
6 plus function construction of the
7 digital circuitry"?
8 A. Yes.
9 Q. Is it your testimony that sitting here
10 now you don't know what providing a construction for
11 a term means?
12 MR. CUVIELLO: Objection to form.
13 THE WITNESS: I understand this -- this
14 context in the section we just talked about starting
15 with paragraph 212.
16 BY MR. HENDIFAR:
17 Q. And do you understand that on page 18 of
18 your declaration, you provide a section titled
19 "Claim Construction"?
20 A. Yes.
21 Q. What did you understand "claim
22 construction" to mean when you discussed it on page
23 18 of your declaration?
24 A. So I was talking about the structure of
25 the -- of the figures. And so -- so I was basically

1 saying that, you know, how does it -- how does the
2 backgrounds, you know, compare to the -- to the
3 structure of the '362 Patent. And I continued to
4 explain that.
5 You know, in fact, the diagram I've been
6 referring to on page three of my second declaration
7 lays out the structure to be identical between Zhang
8 and the '362 Patent, as well as similar figures for
9 the other patents.
10 Q. Now, on paragraph 35 of your declaration
11 you also discuss claim constructions in various
12 District Court litigation?
13 A. Which declaration are we talking about?
14 Q. The '362 Patent.
15 A. The first one or the second?
16 Q. The first one, the one we were just
17 discussing, Exhibit 1002.
18 A. I was referring to the second
19 declaration in my answer previously just now, just
20 to be clear.
21 Q. So going to Exhibit 1002, the
22 declaration I've been asking questions about,
23 paragraph 35, you also discuss claim constructions
24 in various District Court litigation, correct?
25 A. Yes.

1 Q. So let me ask you again. Do you
2 understand what it means to provide a construction
3 for a term?
4 A. I think so.
5 Q. Thank you.
6 Have you provided a construction in any
7 of your declarations for the claim term "selecting"?
8 MR. CUVIELLO: Objection to form.
9 THE WITNESS: I don't know if I have.
10 Perhaps I have. If I have, could you refer me to
11 it?
12 BY MR. HENDIFAR:
13 Q. I'm sorry. I am the one who asks
14 questions.
15 If you need to review declarations,
16 review them.
17 But the question is have you provided a
18 construction for "selecting" in either of your
19 declarations?
20 A. I need to look through my declaration.
21 I don't recall.
22 Q. Do whatever you have to do.
23 A. Okay.
24 Q. My question is have you provided a
25 construction for "selecting" in either of your

MAGNA
LEGAL SERVICES

1 declarations?
2 A. I'm going to go through my declaration
3 now and look for it.
4 So, in paragraph 115 --
5 Q. Of?
6 A. -- of my '362 declaration Exhibit 1002,
7 I provided a figure to illustrate an example of
8 selecting a plurality of television channels from
9 digitized plurality of frequencies.
10 Q. Where are you reading from?
11 A. Paragraph 115, page 80.
12 Q. Of the '362 declaration? Oh, okay.
13 Okay.
14 Is that a construction for "selecting"
15 that is provided?
16 A. Well, it's an example of the --
17 Q. I --
18 A. -- of selecting.
19 Q. Let's do this.
20 A. A plurality of desired television
21 channels from digitized plurality of frequencies.
22 Q. My question is not about examples. So
23 if you need to review, review. And I don't need
24 additional commentary.
25 My question is have you in either of

1 your declarations provided a construction for the
2 claim term "selecting"?
3 MR. CUVIELLO: Objection. Form.
4 THE WITNESS: Is there a particular
5 format that you're looking for? Because I think,
6 you know, I've pointed to the patent claims, I've
7 described what selecting is, I've showed that Zhang
8 has the same structure for selecting as the '362
9 patents.
10 I'm not sure what you're asking for,
11 because I think I've in those numerous ways provided
12 the construction.
13 BY MR. HENDIFAR:
14 Q. Okay. What is the construction you
15 believe you have provided for what "selecting"
16 means?
17 Give me that definition.
18 MR. CUVIELLO: Objection. Form.
19 THE WITNESS: Outputting desires --
20 desired channel C1 through CN.
21 BY MR. HENDIFAR:
22 Q. Okay. But the construction is provided
23 for "selection."
24 So, selecting means desired channels to
25 see what you're seeing?

1 MR. CUVIELLO: Objection. Form.
2 THE WITNESS: Using a banks -- bank of
3 mixers to frequency shift a digitized version of the
4 down converted wideband signal so that each mixer
5 outputs a different desired channel shifted to
6 baseband and then filtered out the undesired
7 channels with a low-pass filter so that only the
8 desired channels remain.
9 BY MR. HENDIFAR:
10 Q. What are you reading from? I'm sorry.
11 A. Paragraph 114 of the '362 declaration,
12 first declaration Exhibit 1002.
13 Q. So is it your testimony that in
14 paragraph 114 of Exhibit 1002, your first
15 declaration for the '362 Patent, you have provided a
16 construction for the term "selecting"?
17 A. So a POSITA would understand this as
18 selecting.
19 Q. That's not my question.
20 Is it your testimony that in
21 paragraph 114 of your first declaration for the
22 '362 Patent you have provided a construction for
23 "selecting"?
24 A. I mean it sounds like a trick question
25 that an attorney's trying to get me to say

1 something, because I -- I think I've described many,
2 many times what Zhang is doing, what the '362 is
3 doing, how the structure of the elements of the
4 mixer, low-pass filter and numerically controlled
5 oscillators are identical. Both of them are
6 selecting. I've provided multiple diagrams,
7 examples.
8 I'm not sure what's going on here.
9 Q. But that's -- excuse my language, but
10 it's not your prerogative to question what's going
11 on here. You are here as an expert. You've
12 provided opinions, and you're required to answer my
13 questions.
14 And my question is not a complicated
15 question.
16 You testified that you understand what
17 claim construction means.
18 The question is have you provided in
19 either of your declarations a construction for the
20 claim term "selecting."
21 Either you have or you have not.
22 A. I think I have. Example is the one I
23 just showed you in paragraph 114.
24 Q. So it's your testimony that in paragraph
25 114 of Exhibit 1002 for the '362 Patent, you have

MAGNA
LEGAL SERVICES

provided a construction for the claim term "selecting"?

A. Again, I'm not an attorney. I may not know your exact definition that you're looking for. But in my mind and as a POSITA, I have described "selecting" in the context of the patents and in the context of the prior art, including Zhang.

And an example of that, among many examples throughout all my testimony and depositions and declarations, is in paragraph 114 of my first declaration.

Q. That doesn't answer my question. It doesn't. Because either you have provided a construction or you have not.

A. I told you I think I have.

Q. Okay. So your testimony is paragraph 114 of Exhibit 1002 for the '362 Patent provides a construction for "selecting"? That's your testimony; is that --

MR. CUVIELLO: Objection. Form.

THE WITNESS: I think I've answered multiple times.

BY MR. HENDIFAR:

Q. Mr. Lett, you don't get to provide objections.

Is it your testimony that in paragraph 114 of Exhibit 1002 for the '362 Patent you have provided a construction for the claim term "selecting"?

A. I didn't say I objected, by the way.

Did I say I objected?

Q. Mr. Lett, answer my question.

Is it your testimony that in paragraph 114 of Exhibit 1002 for the '362 Patent you have provided a construction for the claim term "selecting"?

A. I think I have, given the caveats that I'm not an attorney, I'm a -- I'm an engineer.

Q. Okay.

A. Can we take a break for a few minutes?

Q. How much of a break would you like?

A. Let's go with 15.

MR. HENDIFAR: Sure. Come back at 40 minutes past the hour?

THE WITNESS: 40 minutes past the hour? That's fine with me.

MR. CUVIELLO: 2:40.

THE WITNESS: Okay. Yes. Thank you.

(Brief recess.)

///

BY MR. HENDIFAR:

Q. Mr. Lett, during the break did you speak with anybody about the contents of the deposition?

A. No.

Q. Did you review any documents?

A. No.

Q. Prior to the break you testified that in paragraph 114 of Exhibit 1002, your first declaration for the '362 Patent, you provided construction for "selecting."

You recall that?

A. I said I think I did.

Q. What is that construction?

A. You want me to read the -- the paragraph?

Q. No. I want you to tell me what is the construction for "selecting" that you believe you have provided?

A. Outputting desired channel C1 to CN first using a bank of mixers to frequency shift a digitized version of the down converted wideband signal so that each mixer outputs a different desired channel shifted to baseband and then filtering out undesired channels with a low-pass filter so that only the desired channels remain.

Q. In your opinion, what you just read from paragraph 114 is the correct construction of "selecting" in the context of the '362 Patent?

A. So in my -- yes. And in my declarations and all of my testimony I have been consistent in what I consider or what a POSITA would consider the plain and ordinary meaning into the context of these patents to be what I just read.

Q. Okay.

A. Again, I'm not an attorney. And construction to me may have some legal terms that I don't understand.

Q. In Zhang the number of channels DM can be different from the number of channels CN, correct?

A. That's right.

Q. Can M be larger than N?

A. I mean I suppose you could output a given C to multiple outputs given this switch that Zhang has.

But as I've been through, you know, all my declarations and testimony, I've been -- I have not been talking about that case that Zhang is capable of doing, it seems. I've been talking about the cases where M is equal to N, but mostly when M

MAGNA LEGAL SERVICES

is less than N.
Q. But M can be greater than N, correct, in your opinion?
A. Like I said, I think so given that the fact that you could -- you could take, for example, C2 and you could output it on several -- like you could output it on D2 and maybe you could output it on D20 -- right? -- when given this in N by M selector. Because it's very flexible, as you can see in the diagram on page three of my second declaration and also in Figure 5 of Zhang, every input to this bus selector can be connected to one or multiple outputs.
Q. And why have you focused more on the scenario where M is less than N in your analysis?
MR. CUVIELLO: Objection. Form.
THE WITNESS: So, I was mapping the claim elements to the prior art, and the claim elements are sometimes, but not always, when M is less than N.
And so that was the focus of the declarations and testimony.
BY MR. HENDIFAR:
Q. What logic does Zhang use to output the M channels from the N channels?

MR. CUVIELLO: Objection. Form.
THE WITNESS: I don't know the answer, because I don't think he's disclosed what logic he used.
Perhaps you could define "logic" for me if it's different than what I'm understanding.
BY MR. HENDIFAR:
Q. What do you understand "logic" to be?
A. Well, I think maybe you meant what circuitry is used. I'm not sure.
Q. And what criteria does Zhang use to output the M channels from the N channels?
MR. CUVIELLO: Objection. Form.
THE WITNESS: So, he probably does not give an exhaustive list, but he does describe that for the sake of fast channel change, even if someone's not watching a particular channel, might want to have those available to be output quickly for fast channel change and, thus, this switch, this bus selector switch, has some value.
BY MR. HENDIFAR:
Q. How does Zhang choose which channels DM are output from the collection of channels C1 to N?
MR. CUVIELLO: Objection. Form.
THE WITNESS: Again, Zhang doesn't

choose. Zhang chose an architecture with a switch where the desired channels C1 through CN can be -- are input to the bus selector so that that switch can provide those outputs to the demodulator.
BY MR. HENDIFAR:
Q. Right. But there is a determination made as to which output goes to which demodulator, correct?
A. So, Zhang is describing the implementation of the -- of the circuit. He doesn't say, you know, "how do I choose what channel I'm going to watch?"
I mean he's -- he's basically saying that any of those -- those desired channels and multiple of those desired channels can be output to the demodulator. He's not saying, "oh, this is how I'm choosing which one I'm going to watch."
Q. So not all channels C in Zhang are necessarily transmitted to the demodulators, correct?
A. Zhang's architecture is flexible. All of the CN channels or a subset of the CN channels can be output to the demodulator.
Q. Okay. So, what is the criteria you have used to determine that Zhang's channel C's are

desired channels?
What makes Zhang's channels C1 to N desired?
MR. CUVIELLO: Objection. Form.
THE WITNESS: Well, just like the '362 Patent and the other patents describe, desired is one thing, undesired is the other. And both desired and undesired are input to the -- to the device.
And then what -- what I was showing in that figure on page three of my second declaration is after the A to D converters with I and Q signals coming in, the -- the desired are picked from the entire spectrum of channels, with each one of those elements, a mixer, low-pass filter and, NCO, just like in the '362 Patent with the complex mixer and the low-pass filter and, of course, NCO is in there also, the -- just like the '362 Patent, Zhang is saying, you know, you can -- you can tune one of the channels, you can select it, you can tune another channel, you can select it and so on and so forth.
It doesn't really say, you know, "why would I want to watch HBO versus CBS?"
Q. So, you mentioned that a subset of channels C1 to CN may be sent to the demodulators,

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1 correct?
2 That may be a scenario, correct?
3 A. Yes. It can output all or fewer than
4 all. Again, it's a very flexible architecture.
5 So the way it maps to the '362 and the
6 other patents is it provides the output C1 to CN to
7 the demodulator. And that's certainly a
8 configuration that's supported by Zhang.
9 Q. So how do you know -- if not all
10 channels C are necessarily transmitted to
11 demodulators or watched by users, how do you know
12 that Zhang's channels C do not contain any undesired
13 channels?
14 A. Well, by definition, desired are the
15 ones that the mixer, low-pass filter and NCO tune
16 to. And undesired are the ones that they don't tune
17 to.
18 Q. So your definition is whatever is
19 extracted from an input signal is necessarily by
20 definition a desired channel?
21 A. I think that's consistent with the
22 patents, yes.
23 Q. Now, in your -- let me find the correct
24 paragraph. One moment.
25 A. Again, I want to make sure that what I

1 just said was correct.
2 I was talking about the output C1
3 through CN. I think you were -- used the word
4 "channel." So I just want to make sure I'm exact on
5 what we're talking about.
6 Q. Now, may I please refer you to
7 paragraph 19 of your first declaration for the
8 '362 Patent.
9 A. Okay.
10 Q. And you see the first two grounds of
11 anticipation and obviousness based on Zhang alone?
12 A. Yeah. I see those first two lines,
13 ground A and ground B.
14 Q. The question is, in your analysis for
15 the grounds that rely only on Zhang, you have relied
16 on an unmodified version of Zhang as opposed to
17 proposing specific modifications to Zhang's
18 disclosure, correct?
19 MR. CUVIELLO: Objection. Form.
20 THE WITNESS: I don't think that I
21 proposed that another prior art element -- prior art
22 reference would modify the structure of Zhang in
23 ground A and ground B.
24 BY MR. HENDIFAR:
25 Q. So my question is not about if the

1 modification is based on another prior art. My
2 question was more general.
3 So the question is, in your analysis for
4 grounds that are based on Zhang alone, have you
5 relied on any modification to Zhang or are you
6 relying on Zhang in unmodified form?
7 A. I think it's unmodified. But I think
8 my -- my understanding of what unmodified means is
9 that I didn't rely on any prior art to modify the
10 structure or functionality of Zhang in my analysis.
11 Q. So then let me make it correct
12 adjustment to your understanding.
13 So, modification doesn't have to be
14 based on another prior art. It could just be based
15 on knowledge of a POSITA to modified something.
16 So when I say unmodified, I'm not
17 limiting it to modification based on another
18 reference. It can be modification based on whatever
19 a POSITA wants to do --
20 Does that make sense?
21 A. Yes.
22 (A clarification was requested by
23 the reporter.)
24 Q. A POSITA may wish to do?
25 So the question -- let me then ask the

1 question again.
2 In your analysis for the grounds that
3 are based on Zhang alone, have you relied on any
4 modification to Zhang or are you relying on an
5 unmodified disclosure in Zhang?
6 A. We're talking about ground A and
7 ground B still?
8 Q. Right. The grounds that are based on
9 Zhang alone.
10 A. Okay.
11 MR. CUVIELLO: Objection. Form.
12 THE WITNESS: So, I don't think I have.
13 If you saw that I did, maybe you could point me to
14 it, save us a little time.
15 BY MR. HENDIFAR:
16 Q. I don't believe you have. But I don't
17 want to put words in your mouth and I need a
18 straight answer.
19 So, I don't -- I don't believe you have,
20 but I don't want you to rely on me because I don't
21 want to put words in your mouth. I really just want
22 an actual answer.
23 So the question is, in your analysis for
24 the grounds that rely on Zhang alone, have you
25 relied on any modification to Zhang or have you

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1 relied on unmodified embodiments of Zhang?
2 MR. CUVIELLO: Objection. Form.
3 THE WITNESS: I don't think I have. But
4 to be sure, I think I may need to read the entire
5 analysis to make sure.
6 So, I'll be happy to do that. I just --
7 I don't think I have. But I may have.
8 BY MR. HENDIFAR:
9 Q. So sitting here now, you don't believe
10 you have relied on any modification to Zhang's
11 embodiments for the grounds that rely on Zhang
12 alone; is that accurate?
13 A. That's correct.
14 MR. CUVIELLO: Objection to form.
15 THE WITNESS: Sorry.
16 BY MR. HENDIFAR:
17 Q. I'm sorry. I didn't get your answer,
18 Mr. Lett.
19 A. Can you repeat it again?
20 Q. Sure.
21 THE REPORTER: I did get an answer. Do
22 you want me to read --
23 MR. HENDIFAR: If you got it.
24 (Whereupon the answer was read as
25 follows:

1 "Answer: That's correct."
2 BY MR. HENDIFAR:
3 Q. So that's fine.
4 THE WITNESS: Can you re-read that
5 question to make sure I understand?
6 (Whereupon the question was read
7 as follows:
8 "Question: So sitting here now,
9 you don't believe you have relied
10 on any modification to Zhang's
11 embodiments for the grounds that
12 rely on Zhang alone; is that
13 accurate?
14 "Answer: That's correct.")
15 THE WITNESS: Again, I was just talking
16 about the '362. And I have not looked at the other
17 ones. So -- and we were talking about ground A and
18 ground B of the '362 declaration on my answer.
19 MR. CUVIELLO: Did my objection get
20 noted?
21 THE REPORTER: Yes. There was an
22 objection to form.
23 BY MR. HENDIFAR:
24 Q. Now, Mr. Lett, is the term "digital
25 front end" a term of art that a POSITA would know

1 what it means in general in this field?
2 MR. CUVIELLO: Objection. Form.
3 THE WITNESS: Well, I think one would
4 need to put it in the context of the type of product
5 we're talking about to get a general idea.
6 So, digital front end in one type of
7 product may be totally different than another. But
8 I think it kind of implies something at the front
9 end of the product or the beginning of the entry
10 point of signals that has some digital circuitry in
11 it.
12 BY MR. HENDIFAR:
13 Q. Is anything that has some digital
14 circuitry in it considered digital front end?
15 A. I don't think so. I mean I think you'd
16 have to be more specific than that.
17 You know, so I think a POSITA would
18 kinds of, you know, have a product and would kind of
19 design something and kind of come up with a name for
20 it. And -- and, oh, it's got some digital
21 components in it and it's here near the beginning of
22 the circuit flow, so let's call it digital front
23 end.
24 And then similar to our -- my answer
25 earlier when I was talking about you kind of need to

1 look into details to understand exactly what's meant
2 by digital front end for the particular use of that
3 term.
4 Q. Now, in Zhang what happens if a user
5 wants to watch a channel that has not been extracted
6 by the demultiplexer as one of the channels C1 to
7 CN?
8 MR. CUVIELLO: Objection to form.
9 THE WITNESS: I'm not sure I understand
10 what you mean by "what happens if."
11 BY MR. HENDIFAR:
12 Q. So, you testified that Zhang does not
13 necessarily extract all the channels in the input
14 signal in its demultiplexer.
15 Correct?
16 A. That's right.
17 Q. So there might be a channel in the input
18 signal in Zhang that is not extracted by the
19 demultiplexer as one of channels C1 to CN in your
20 opinion, correct?
21 A. Yes. So, if you have a whole bunch of
22 channels coming in and you only select some of them
23 with these mixer, low-pass filter, NCO elements,
24 that is true.
25 Q. Now, how would Zhang deal with the

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1 situation where a user may wish to watch a channel
2 that has not been -- that is one of the channels
3 that was not extracted by Zhang's demultiplexer?
4 MR. CUVIELLO: Objection. Form.
5 THE WITNESS: So, suppose it's a set top
6 box or whatever it is, right, that we're going to
7 watch television on. And I'm watching a channel
8 that has my -- let's call it C2, right?
9 So my C2 set of mixers, NCOs and
10 low-pass filters is tuned to that channel. Right?
11 If -- if I want it to go to a different
12 channel, you know, somebody probably pressed the
13 remote, you know, select a different channel number
14 or channel up, down or something and cause that
15 mixer -- that NCO that's part of the chain to switch
16 to a new target frequency so that it would tune to
17 the frequency of the channel that we decided we want
18 to watch now instead of the one we've been watching.
19 Q. How long would it take for Zhang's
20 system, if implemented in 2011 with the technology
21 at the time, to switch the channel to a channel that
22 had not been extracted yet?
23 MR. CUVIELLO: Objection. Form.
24 THE WITNESS: It's hard to say. I don't
25 recall.

1 I mean it would be certainly fast enough
2 so the user who wanted to select a different channel
3 than the one that's selected that he's watching or
4 whatever would not be too objectionable.
5 I don't know. Maybe a half -- I don't
6 know. Less than half a second, less than a second,
7 I don't know. Something like that. Whatever one
8 would think would be acceptable.
9 BY MR. HENDIFAR:
10 Q. Other than the documents provided by
11 Patent Owner regarding Zhang's European prosecution
12 history, did you review any other documents from
13 Zhang's European prosecution history?
14 A. I did not review the prior art
15 references D1 and D2 because I don't think they were
16 provided.
17 And I followed Dr. Russ's declaration
18 where he was talking about this. And he referenced
19 some other document related to the EPO, I think.
20 And I looked at that. I looked at the quote that he
21 put in his -- Dr. Russ put in his declaration that
22 was part of the -- the document -- I can't remember
23 the name of the document. But anyway, he references
24 it explicitly, and I looked at that.
25 So other than that, I didn't look at any

1 other --
2 Was the question European --
3 Q. Yes. Right.
4 A. -- patents?
5 I don't think I looked at any other
6 European patents or documents about European
7 applications other than the ones that Dr. Russ
8 referenced.
9 Q. Did you try to locate either the
10 application or the references cited or anything else
11 from the European prosecution of Zhang?
12 A. So I looked at this analysis from the
13 view of a POSITA. And so the answer is no, I did
14 not.
15 So, and the reason I did not is because
16 from the position of a POSITA, I think one would
17 look at Zhang and read it and -- and perhaps use it
18 to -- to implement a product or whatever.
19 So -- so, I don't think that a POSITA
20 would go and look at all the background references
21 and the applications and all that. A POSITA would
22 normally just look at the patent and -- and use that
23 in his -- to whatever use he wants to use it.
24 Q. Okay. Do you recall when you read for
25 me your construction of "selecting" from

1 paragraph 114 of your first declaration for the
2 '362 Patent?
3 A. Yes. Paragraph 114, I remember reading
4 it.
5 Q. Okay. Is the construction you read for
6 me from paragraph 114 of your first declaration for
7 the '362 Patent which you said you believe is the
8 correct construction for "selecting," is that the
9 plain and ordinary meaning of "selecting" or is that
10 the construction of "selecting" in the context of
11 the '362 Patent?
12 MR. CUVIELLO: Objection. Form.
13 THE WITNESS: So, as I stated on
14 paragraph 27 in my second reply declaration for the
15 '362, a POSITA would have understood the plain and
16 ordinary meaning of "select" said plurality of
17 desired television channels is what each signal path
18 in Figures 2 and 3 do -- does.
19 And then this plain and ordinary meaning
20 of "select" that is the same that's used between
21 Zhang and the '362 patents and other -- those other
22 patents.
23 So that's the meaning of "select" that I
24 was using as the plain and ordinary meaning through
25 all of my analysis.

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Q. In your opinion, does the plain and ordinary meaning of "select" require the use of mixers and filters?

A. So, the mixers and filters are picking something out.

Right?

So, picking a channel that I want as desired -- right? -- out of a whole bunch of channels is selecting. And it just happened to use mixers and the low-pass filters and NCOs to do that picking.

So that is selecting in the plain and ordinary meaning.

Q. Picking a channel from a signal or selecting -- I guess you used the word picking instead -- so let me ask the question again.

So, selecting or picking a channel from an input signal is different from separating out all the channels in that input signal, correct?

MR. CUVIELLO: Objection. Form.

THE WITNESS: It can be the same if -- if you want to pick all the channels. If you had enough of those elements, those -- those mixer, low-pass, filter, NCO elements, one for each channel, you could -- and that's when you could --

you could select all of the channels.

But that's in general not what is practical, you know, for a number of reasons. Right? One is it would require a whole bunch of circuitry to duplicate those elements for every single channel.

You could imagine that, you know, a cable system that would have 150 channels, are you going to have 150 mixers and low-pass filters and NCOs so you could select all 150? Probably not.

And secondly, you know, once you selected all those channels, what would you do with it? Right?

So, how many channels can somebody watch simultaneously. Probably not 150, right?

So, for -- for practical reasons, most of the time you would have fewer selected channels than you would all the channels.

And furthermore -- and I think I said this in my second declaration -- there wouldn't be any point in having NCOs. You would -- you essentially have mix -- if you want to select all those channels, you would have fixed numbers for NCOs for every single channel, and there would be no point in them -- it being programmable by --

You know, an NCO by definition is programmable. So you change the numbers to hit different target frequencies.

If you're going to always tune all the channels, which, again, I said is not practical or needed or wanted, then you wouldn't even -- you'd just have an oscillator with fixed frequencies for each one of those mixers.

Q. So Zhang's device can be used with satellite or cable or whatnot; is that accurate?

MR. CUVIELLO: Objection. Form.

THE WITNESS: Yeah. So, Zhang talks about cable and satellite systems. So I think that answer is yes.

BY MR. HENDIFAR:

Q. How would the manufacturer of a device implementing Zhang know in advance what exact frequencies are the channels in the signal that Zhang's device is going to receive?

(A clarification was requested by the reporter.)

BY MR. HENDIFAR:

Q. In the signals that the device is going to receive?

A. And the device is what? What was the

last word?

Q. Let me step -- I'll withdraw that question. I'll ask it in smaller pieces.

So, Zhang's input signal contains a number of channels, correct?

A. I mean I think it can. Or it could be less -- I mean it could be one, I suppose, right?

Q. It was a number -- I was not trying to limit it.

My question was Zhang's input signal has one or more channels, correct?

A. I think so, yes.

Q. And the frequency location where a channel is located can be different depending on the nature of the input; for example, satellite versus cable versus broadcast, correct?

A. Yes.

Q. So, even if Zhang were to demultiplex and extract all channels in the signal band, it would still require adjustable oscillators. Because he would need to tune each of the extraction path to the frequency of the channels in the input signal, correct?

MR. CUVIELLO: Objection. Form.

THE WITNESS: No. You wouldn't build

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a -- you wouldn't build one product that's used for cable and satellite and off air terrestrial. You would build three different products and -- and using the illustration where I said you would have fixed frequency select.

So, you know, the cable may have one set of frequencies and the satellite may have another. But essentially they would be different products. And there's, you know, other differences between cable and satellite, too, that, you know -- especially terrestrial, like, you know, decoding a digital signal, you would have a different product that would -- would you know, decode, demultiplex and decompress and everything per ATSC standards, for example, right? Instead of, you know, like mpeg-2 or whatever that -- that would be used in a cable system.

So they're different products.

BY MR. HENDIFAR:

Q. Then it's say it's just for satellite for the sake of this argument.

Is it the case that -- a device built based upon Zhang for a satellite system, is it the case that the input signal always had -- the channels and the input signal are always at

previously known fixed frequencies regardless off the -- let me strike that -- let me ask a better question.

So you mentioned that the -- if the input signal --

A. Could we take a break just a second?

Q. It's my last question.

A. Five minutes?

Q. Sure.

A. I can take it now or answer this one and take it.

MR. HENDIFAR: Yeah, let's take a break. That's fine.

I know Mike is like very --

MR. CUVIELLO: That's okay. Five minutes?

THE WITNESS: Thank you.

(Brief recess.)

BY MR. HENDIFAR:

Q. So, Mr. Lett, the question is assuming a Zhang device that is built for satellites, is it the case that all the channels in the -- whatever satellite signal the device may receive are always going to get fixed previously known frequencies?

A. Well, so each satellite provider has

their own kind of frequency plan.

You know, Dish is one thing who I worked for. I worked for EchoStar building products for Dish to be clear. You know, DirecTV has another. And, you know, those are based on their channel lineups and so on and so forth.

So, once you get down to a particular implementation, it's pretty much fixed.

But, again, like I was talking about, building a product with all these mixers, what would it be for?

My answer is I don't think it's very useful, because you're not going to -- you're not going to watch 150 channels, for example, simultaneously. You're not going to record 150 channels, because it would eat up all your hard disk drive space in this, you know, kind of set top box.

Right?

And so there's lots of reasons why you would implement Zhang with the numerically controlled oscillators that would, you know, pick or select the channel from the -- from the plurality of input channels that -- that you wanted that was desired.

Q. Now, are generally the devices built by

manufacturers specifically for a given Dish provider?

So, for instance, does the manufacturer manufacture a device that's just specifically for Dish as opposed to -- was it DirecTV you mentioned?

A. I think so. So, I don't have any experience building a satellite product for both Dish and EchoStar, for example -- I mean both Dish and DirecTV, I meant to say. I don't -- I'm not sure. But I don't think so.

You know, we built products for Dish, and they would not work with -- with a DirecTV system, because there's certain -- usually there's other things that make their systems proprietary, like the encryption methodology that's used on their particular type of system which requires a whole different set of circuitry.

And so I think -- I think the answer is you build the product for the -- for the provider, the service provider.

Q. Okay.

MR. HENDIFAR: I have no further questions.

MR. CUVIELLO: And we have no redirect.

MR. HENDIFAR: All right. Well, thank

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you very much, Mr. Lett.
Sorry it got a bit heated at times. But it's remote, so there is a limit to that, I suppose.
Take care.
MR. CUVIELLO: Reporter, if you could stay on for a minute. I just wanted to talk about ordering a copy.
MR. HENDIFAR: Do you need me? Any questions for me?
MR. CUVIELLO: No. I think you're ordering one day, right, turn around?
MR. HENDIFAR: Yes okay. So I'll take off.
(Off-the-record discussion.)
MR. CUVIELLO: And as far as ordering the transcript, can we get a copy by Friday?
THE REPORTER: No problem.

(Whereupon at 12:30 P.M. the deposition proceedings were concluded.)
* * *

I, DAVID B. LETT, say I have read the foregoing deposition and declare under penalty of perjury under the laws of the State of California:
That the foregoing is my deposition under oath;
That I have read same and have made the necessary corrections, additions or changes to my answers that I deem necessary;
That my answers as indicated are true and correct.

Executed at _____, California, this _____ day of _____, 20_____.

_____
DAVID B. LETT

REPORTER'S CERTIFICATE

I, PATRICIA L. HUBBARD, do hereby certify:

That I am a duly qualified Certified Shorthand Reporter in and for the State of California, holder of Certificate Number 3400, which is in full force and effect, and that I am authorized to administer oaths and affirmations;

That the foregoing deposition testimony of the herein named witness, to wit, DAVID B. LETT, was taken before me at the time and place herein set forth;

That prior to being examined, DAVID B. LETT was duly sworn or affirmed by me to testify the truth, the whole truth, and nothing but the truth;

That the testimony of the witness and all objections made at the time of examination were recorded stenographically by me and were thereafter transcribed by me or under my direction and supervision;

That the foregoing pages contain a full, true and accurate record of the proceedings and testimony to the best of my skill and ability;

I further certify that I am not a relative or employee or attorney or counsel of any of the parties, nor am I a relative or employee of such attorney or counsel, nor am I financially interested in the outcome of this action.

IN WITNESS WHEREOF, I have subscribed my name this 21st day of May, 2025.

_____
PATRICIA L. HUBBARD, CSR #3400

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1 ERRATA SHEET FOR THE TRANSCRIPT OF:
2 Case Name: COMCAST CABLE vs ENTROPIC
3 Dep. Date: MAY 20, 2025
4 Deponent: DAVID B. LETT

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MAGNA LEGAL SERVICES

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125:3
able
78:3
about
7:20 9:16 12:14 15:5 16:4 18:25 19:8,25 20:1,2 21:2,20,22 22:25 23:10 24:5,6 26:4 27:4 28:1 29:24 33:1,1,10 34:15,18 38:12 39:3 40:5,22,23 41:2,4 41:15 44:9,10,14,16 45:12 46:17 47:17 48:21 50:3,4 51:1 60:7 64:24 65:15,20 69:19 70:21,22 71:5 71:12,23 73:4 76:3 81:17,21 82:17 83:2 84:4 87:14,24 88:13 88:22 90:22 96:3 97:23,24 103:2,5,25 105:6 107:16,17 108:5,25 111:18 112:6 116:13 120:9 122:6
acceptable
111:8
access
13:7,15 24:23
according
64:6,19
accurate
106:12 107:13 116:10 125:2
achieve
55:21 74:17
achieved
56:13 78:5
action
125:9
actual
105:22
actually
12:12 15:5 18:8 23:15 26:7 27:2 31:14 40:8 41:20 48:4 56:6 79:14
ADC
71:10,11
ADCs
70:17
added
57:19
additional
90:24
additions
123:7
address
17:24 54:1
addressed
17:16
adjustable
117:20
adjustment
104:12
administer
124:9
administering
7:14
advance
116:17
advantage
70:19
affirmations
124:9
affirmed
124:17
after
17:7 101:12
again
19:20 33:8 34:2,17 37:15 38:24 40:24 42:10,16 43:17 47:7 59:10 61:18 63:12 67:15 71:2 78:10 79:4 82:23 89:1 94:3 97:10 99:25 102:4,25 105:1 106:19 107:15 114:16 116:5 120:9
ago
27:1
agree
56:21 57:5,10
agreed
57:4
ahead
47:2 51:17 56:15 82:25
air
118:2
all
12:7,12,18,20 13:19 13:20,23 17:23 31:1 31:25 32:1,1,22 38:15 39:11,23 41:7 41:24 42:17,20,25 43:3,10,23 44:15,17 44:23,24 46:20,22 47:24 48:3,10,11,13 49:14,17 58:11 61:25 62:12,15,18 62:20 63:16,17 64:2 64:5,8,8,14 66:5,11 71:6,6,13 74:25 82:5 83:3,7 94:9 97:5,21 100:18,21 102:3,4,9 109:13 112:20,21 113:25 114:18,22 115:1,10 115:12,18,22 116:4 117:19 119:22 120:10,16 121:25 124:20
allow
23:4 24:1
allowed
9:20,25
alone
103:11 104:4 105:3,9 105:24 106:12 107:12
already
9:10 34:23 55:1
also
12:14 13:7,22,25 16:9,11 20:10,14 26:2 38:11 40:8,9 43:10,14 60:14 64:5 64:20 77:1 79:10 80:2,4 81:24 88:11 88:23 98:11 101:18
Alternate
87:5
always
42:18 44:25 46:9,11 47:11,14 48:2 75:11 98:19 116:4 118:24 118:25 119:23
am
7:6,11 23:1,1,4,24 69:9,9 85:15 89:13 124:5,8 125:5,7,8
ambiguities
10:4
ambiguous
44:13
among
77:25 94:8
amplification
69:21
AMs
12:14
an
13:1 16:15 19:11 22:3,5,7 23:12 24:3 24:8,10,13,20 26:14 28:21 31:15,22 33:1 33:13,24 34:19 36:5 38:19 41:7,23 43:1 44:24 46:3,20 47:18 47:25 48:10,14,20 49:15,18,23 54:3 58:1 59:5 62:11 63:21,23 65:23 70:11 72:2 75:14 82:6 84:3,5 90:7,16 92:25 93:11 94:3,8 95:13,13 97:10 99:15 100:1 102:19

MAGNA
LEGAL SERVICES

103:16 105:4,22 106:21 107:21 114:18 116:1,7
analog
27:14 53:20 68:11 69:25 70:14,20 71:6 71:17,21
analysis
15:17 16:15 83:19 98:15 103:14 104:3 104:10 105:2,23 106:5 112:12 113:25
and/or
77:3
another
26:3,12 70:2 73:19 101:20 103:21 104:1,14,17 108:7 118:7 120:4
answer
6:18 10:5 18:19 19:9 19:10 21:6,7,8,8,15 21:23 22:23 23:16 23:18,21 24:3,17 34:20,22 35:22 36:3 39:20 41:18,21 44:21 50:2 54:7,11 54:12,25 56:5,6 70:7 72:7 74:4 77:13 78:11 79:14 82:14 86:10 88:19 93:12 94:12 95:7 99:2 105:18,22 106:17,21,24 107:1 107:14,18 108:24 112:13 116:14 119:10 120:12 121:18
answered
37:14 48:16,16,24 49:6 54:14 55:1 56:10 94:21
answering
35:13 40:18,19
answers
123:8,9
anticipation
103:11
any
7:13 9:5,5,16 10:4,16 12:1,2,25 13:2,15 14:5 15:17 16:15 29:7,16 35:14,17,17 43:11 69:24 77:15 78:15 79:1 80:11 82:19 89:6 96:5 100:14 102:12 104:5,9 105:3,25 106:10 107:10 111:12,25 112:5 115:21 121:6 122:8 125:6
anybody
11:3 51:1 96:3
anyone
7:13 10:24
anything
13:4 64:24 65:20 108:13 112:10
anyway
31:6 111:23
APPEAL
1:3 2:3 3:3
appearances
5:1 7:25
appendix
12:17
application
112:10
applications
78:5 112:7,21
appreciate
14:15,25 86:9
approach
68:6
approximately
10:19 11:6 14:18 16:3
architecture
45:13 46:17 54:1 70:3 71:3 78:6 79:25 100:1,21 102:4
area
62:19
argument
118:21
arguments
15:18 16:16,23
around
10:21 45:9 47:6 122:11
art
53:5,10 54:3 65:11 65:21,22 66:1,5,11 66:11,19,23 67:4,7 67:9 69:2,14,18 71:6 73:8 79:21 94:7 98:18 103:21 103:21 104:1,9,14 107:25 111:14
as
7:12 8:5,14,16 10:12 10:12 11:16,19 13:1 14:21 17:15 21:17 22:3,5,7 23:24 24:8 24:10,13,24 26:7,21 27:8,24 28:2,12 33:14 34:10 36:5 37:21 38:10,12,18 39:10,14,15,15 41:9 42:24 43:8 48:10 49:18 51:12,12 52:5 53:19 54:3 56:23 57:11,13,21 65:13 66:3,19 67:19,19 68:11 70:1 73:6,6 73:18 74:9,12 76:4 76:4 77:7,24 82:6 82:20 83:12 88:8,8 91:8 92:17 93:11 94:5 97:21 98:9 100:7 103:16 106:24 107:7 109:6 109:19 113:13,24 114:7 121:5 122:15 122:15 123:9
ask
10:3 18:9,20,24 21:4 21:5,10 23:19,20 24:2 54:13 61:18 80:19,23 81:2,5,9 85:8,18,25 89:1 104:25 114:16 117:3 119:2
asked
36:23 42:24 48:16,24 49:6 54:5 55:10,19 86:21
asking
15:5 19:25 20:1,2,5,6 21:20,22 22:1,2,2 22:25 40:22,23 41:2 41:3,4 44:9,10,14 44:15 57:2,5 69:6,9 69:9 75:23 79:10,11 84:8,17 85:15 88:22 91:10
asks
89:13
aspects
52:10
assistant
36:5
associated
63:23
assume
10:6
assuming
119:20
at
4:3,6 7:11 9:5 14:5,6 15:4 24:21,22 25:2 25:11,13 27:4,5 28:4,15 30:5 33:10 34:24 35:3,9,12 36:2,6,6,8 50:1,20 55:2,16,24 56:8 57:9 58:1,25 59:17 60:15 65:5 66:3,4,8 66:9,10 67:23 70:10 71:9,14 73:16 78:4 79:21 95:18 107:16

MAGNA
LEGAL SERVICES

108:8 110:21 111:20,20,24,25 112:5,12,17,20,22 118:25 122:2,19 123:12 124:13,21
Atlanta 36:8
ATSC 118:14
attorney 84:4,5 94:3 95:13 97:10 125:6,8
attorneys 11:2,4 15:12 17:2
attorney's 92:25
authorized 124:8
available 12:2 62:16 78:7 99:18
aware 10:18
A.M 4:7 7:2

B

B 1:14 4:3 6:4 8:13 103:13,23 105:7 107:18 123:1,17 124:12,16 126:4
back 15:4 40:25 43:17 46:1 50:20,24 56:5 56:17 64:10 66:16 68:4 95:18
background 50:5 51:19,24 52:11 52:25 53:2,4,9 65:12 66:2,5,21 67:2,7 112:20
backgrounds 88:2
ballpark 10:22 15:8
band 43:13 55:13 117:19
bandwidth 53:16 55:13 57:20 58:8 70:13 71:10,15
bank 92:2 96:20
banks 92:2
Banner 5:3 8:8
baseband 28:24 38:14 64:22 92:6 96:23
based 23:16 37:2 44:5 77:18 87:5 103:11 104:1,4,14,14,17,18 105:3,8 118:23 120:5
basically 26:5 28:1 65:1 87:25 100:13
basing 72:22
be 7:20 14:2 15:18 16:16,24 17:16 20:18 22:20,22 32:2 34:10 35:11 38:21 39:25 40:6 41:9,16 42:12 43:11 45:16 46:23 50:12 53:5,10 62:23 63:22 64:5,14 65:2,2,10,25 67:3,7 69:1,19 71:11 72:2 72:14,25 73:24 74:25 75:19 76:1,6 78:3,7 82:20 84:5 88:7,20 97:8,14,17 98:2,12 99:8,18 100:2,15,23 101:25 102:2 104:13,14,18 106:4,6 108:7,16 109:17 111:1,4,8 114:21 115:20,24 116:9 117:6,7,14 118:8,16 120:4,11
because 18:16 19:6 23:8 25:2 25:14 34:21 35:10 45:5,6,10 47:1 49:3 49:9,24 51:10 52:7 54:25 56:9 59:16 63:1 67:17 69:3 70:25 71:22 91:5,11 93:1 94:13 98:9 99:3 105:20 111:15 112:15 117:20 120:13,16 121:13
been 8:14 29:21,22 36:15 37:3,8 41:15 45:14 46:17 50:1,4 81:17 82:16 86:21 88:5,22 97:5,21,22,23,24 109:5 110:2,18,22
before 1:3 2:3 3:3 4:8 17:6 17:12 52:5 71:10 124:13
beginning 55:7 108:9,21
behalf 4:5
being 70:23 82:2 86:7 115:25 124:16
believe 11:15 54:14 56:6 91:15 96:17 105:16 105:19 106:9 107:9 113:7
best 14:22 32:2 125:3
better 86:11 119:2
between 65:16 69:7 74:8 88:7 113:20 118:9
bit 66:12 70:18 122:2
blank 56:23 57:12,16
blank/undesired 60:2
blind 14:24
block 25:12,13 28:3,19 37:21 77:22 78:24 79:8 80:7,8 81:13 82:2
Board 1:3 2:3 3:3 22:24 23:7
book 30:23,25 31:8,15,16 31:25
both 12:16 30:18 38:2 40:9 45:14,22 51:25 52:2,8 57:20 58:9 65:6,24 67:9,25 68:7,25 69:3,12,15 72:1,13 93:5 101:7 121:7,8
Boulevard 5:16
box 37:21,22 42:8 81:14 81:23 82:10,18 110:6 120:17
break 50:10,14,25 95:15,16 96:2,7 119:6,12
breaking 52:15
breaks 9:20,25
Brief 50:22 95:24 119:18
broad 18:17
broadcast 117:16
build 117:25 118:1,3

MAGNA LEGAL SERVICES

121:19
building
120:3,10 121:7
built
118:22 119:21 120:25 121:11
bunch
46:14 74:22 81:19 109:21 114:8 115:4
bus
98:12 99:20 100:3
but
7:21 10:5 13:25 14:5 14:25 20:10 21:9 22:22 23:4,19 27:2 29:21 32:4 33:8 34:8 36:20 37:14 40:8 41:1 43:10 44:21 46:13 47:11 51:22 52:20 54:23 56:15,18 57:17 60:7 60:10,14 64:1,5 65:4 66:10,11 68:15 68:21 70:16 71:5 73:14,23 76:4 78:11 81:16 82:14 89:17 91:22 93:9,9 94:5 97:21,25 98:2,19 99:15 100:6 104:7 105:16,20 106:3,7 108:7 111:23 115:2 118:8 120:9 121:10 122:2 124:18
BW1
57:20,24 58:8

C

C
28:23 97:19 100:18 102:10,12
cable
1:5 2:4 3:4 115:8 116:10,13 117:16 118:2,6,10,17 126:2
California
4:11 5:17 7:6 123:3 123:13 124:6
call
10:21 15:8 22:24 23:7 27:19,20 28:21 55:7 78:1 80:16 108:22 110:8
called
8:14 26:7 30:3 31:7 31:14
calling
81:13
calls
25:17 27:1 73:20
came
38:6
can
7:7 14:25 15:23 18:16,24,25 19:21 20:5 21:6,10 23:6 23:19 33:18 36:2 37:15 40:6,17 42:12 43:10,11,22 44:4,7 44:10,21 47:7,8 50:12,17 52:20 56:5 59:10 60:10 65:2,2 65:8 67:13 72:9 74:25 76:13 77:6,16 78:7 80:9,14,15 84:13 85:12 86:10 95:15 97:13,17 98:2 98:9,12 100:2,4,15 100:23 101:19,19 101:20,20,21 102:3 104:18 106:19 107:4 114:21 115:14 116:9 117:6 117:14 119:10 122:16
cannot
23:15
can't
21:9 111:22
capability
80:1 81:25
capable
97:24
capital
64:13,15
care
122:4
carrier
60:20,24
case
1:10 2:10 3:10 14:9 25:17 26:5,9,25 27:4,5,19,22 34:2 41:20 61:24 64:7 75:21 97:23 118:22 118:24 119:22 126:2
cases
35:21 97:25
cause
110:14
caveats
95:12
CBS
101:23
certain
28:2 46:11 74:23 121:13
certainly
80:20 102:7 111:1
Certificate
124:1,7
Certified
4:9 124:5
certify
124:3 125:5
chain
39:3,6 110:15
chains
38:8
change
77:25 78:9 99:16,19 116:2
changes
123:7
channel
20:24 21:19 22:17,19 25:13 26:11,12 27:2 27:15 28:22,24 29:17,18 37:22,25 38:1,13,15,25 39:4 42:10 44:7 45:9,23 46:22 48:4,9 55:23 72:25 73:1,23 75:3 75:18,18 76:5,6 77:25 78:4,9 81:18 91:20 92:5 96:19,23 99:16,17,19 100:11 100:25 101:21 102:20 103:4 109:5 109:17 110:1,7,10 110:12,13,14,17,21 110:21 111:2 114:7 114:14,17,25 115:6 115:24 117:14 120:5,22
chips
31:23
choices
46:14 47:7
choose
99:22 100:1,11
choosing
83:3 100:17
chose
100:1
chosen
27:25
circuit
31:23 100:10 108:22
circuitry
33:23 35:4,9,12 39:23 41:24 42:18 42:25 43:1 44:23 46:4 47:25 49:14 52:7 53:19 54:2 55:15 68:10 69:15 70:23,25 77:2 86:23 87:7 99:10 108:10 108:14 115:5 121:17
citation
18:16 34:19
citations
18:25 64:20 65:9

MAGNA
LEGAL SERVICES

cite
21:17
cited
10:17 61:24 112:10
city
7:7
claim
12:16 18:15 79:21 80:5 81:10 86:17 87:19,21 88:11,23 89:7 91:2 93:17,20 94:1 95:3,10 98:18 98:18
claims
91:6
clarification
104:22 116:20
clarify
9:7
class
30:23
classes
35:19 36:22
clean
12:21
clear
21:25 22:20 35:11 41:16 88:20 120:4
clearly
28:4
CLERK
79:3 84:19
CN
27:17 28:3 77:16,17 78:1 82:3 91:20 96:19 97:14 100:2 100:22,22 101:25 102:6 103:3 109:7 109:19
collaborative
15:14
collection
99:23
college
30:21 31:5
colloquy
40:16
column
51:8,20,21 52:6,19 52:22 53:14 60:15 62:22 63:5,13,24 67:16 68:4,6,16,17 68:19 70:24 72:21
columns
66:22
combined
8:24
Comcast
1:5 2:4 3:4 8:4,8 126:2
come
50:20 95:18 108:19
comfortable
23:8
coming
27:15,16 74:23 101:13 109:22
commencing
4:6
comment
18:16 78:11
commentary
90:24
commented
15:13
comments
17:1,6,11
Communications
1:5,8 2:4,7 3:4,7 8:9
company
35:20
compare
88:2
complete
52:1
complex
101:16
complicated
79:13 93:14
components
108:21
computer
13:8,15
concept
33:9
concerns
9:6 10:4
concluded
122:21
conduct
15:17 16:15
configuration
102:8
confused
45:10
confusions
9:6
connected
98:12
connection
9:11 10:15,24 11:7 14:18 16:4
consider
86:21 97:6,6
considered
13:20 36:12 38:22 39:25 42:1 43:5 45:1 82:20 108:14
considers
53:5,10 66:23 67:3
consistent
25:23 84:21 97:5 102:21
consists
61:7
constituent
41:25 42:20 44:24 46:22 48:1,3,12 49:16,17
construction
45:13 83:25 84:10,18 84:24 85:1,3,9,13 85:19 86:1,5,17,22 87:6,10,19,22 89:2 89:6,18,25 90:14 91:1,12,14,22 92:16 92:22 93:17,19 94:1 94:14,18 95:3,10 96:10,13,17 97:2,11 112:25 113:5,8,10
constructions
84:4 88:11,23
contain
17:23 32:22 102:12 125:1
contains
57:20 58:9,11 60:1 61:7,13,21 117:4
contents
51:1 96:3
context
18:4 20:5 21:1 26:3 33:3,12,23 37:2 42:25 76:7 81:18 82:16,19 83:7 87:14 94:6,7 97:3,7 108:4 113:10
contiguous
51:11 67:18
continued
88:3
controlled
25:14 38:5,9 45:8 47:5,13 70:5 93:4 120:21
convenience
11:17
conventional
53:13
conversion
53:20 55:23 68:12 70:20
converted
92:4 96:21
converter
27:15 69:25 71:21
converters
70:14 71:18 101:12
converting
82:10
cookbook
31:10,12,13,14 32:8 32:9,13 34:4
copies

MAGNA
LEGAL SERVICES

12:21
copy
12:2,6 51:16 122:7 122:16
correct
8:25 9:11,21 10:1 11:13 16:6,8,11 29:9,18 30:11 37:20 43:18 46:24 47:21 48:22 53:1,6,11 56:25 57:13,22 58:10 59:6,14 60:2 60:6,11 61:9,10,15 61:23 62:10 63:19 64:4 65:21 66:24 67:4 68:18 70:8 72:4 75:19 76:6 79:2,18 83:11,21 84:1 88:24 97:2,15 98:2 100:8,20 102:1 102:2,23 103:1,18 104:11 106:13 107:1,14 109:15,20 113:8 114:19 117:5 117:11,16,23 123:10
corrections
123:7
correctly
33:16,22 34:1 47:21 48:7 49:12,20 51:23 52:11 72:4,11
could
18:14 20:4 30:18,24 31:11 34:13,17,20 39:6 50:10 54:7 64:5 71:11 72:2,14 86:9 89:10 97:18 98:5,5,6,7,7 99:5 104:14 105:13 114:25,25 115:1,7 115:10 117:6,7 119:6 122:5
couldn't
60:8 72:7
counsel
5:1 7:24 8:10 9:21,25 11:24 14:7 23:6 40:17 48:15 49:1 125:6,8
counsel's
49:3
course
16:2 33:21 35:25 50:12 52:18 59:12 61:19 72:10 101:17
courses
35:17 36:7,11,11,13 36:14,19,20
Court
88:12,24
create
16:15
criteria
76:10,17 99:11 100:24
CSR
1:25 4:9 7:6 125:15
currently
7:8 12:3 35:20
cut
32:23
C's
100:25
C.V
36:1,16
C1
27:17 28:2 77:16,17 78:1 82:2 91:20 96:19 99:23 100:2 101:2,25 102:6 103:2 109:6,19
C2
27:17 98:6 110:8,9

D

D
6:1 101:12
data
26:11,11,12 32:1 55:22 59:21 77:3,3 77:12
date
36:2 126:3,25
DAVID
1:14 4:3 6:4 8:13 123:1,17 124:12,16 126:4
day
122:11 123:13 125:12
DC
5:8
deal
109:25
decided
110:17
decimated
64:22
declaration
10:14 11:11,18 12:16 15:6,19 16:10,17 17:8,12,21,23 20:3 23:2 39:11 61:25 65:13,14 77:8 83:13 86:14,25 87:3,18,23 88:6,10,13,19,22 89:20 90:2,6,12 92:11,12,15,21 94:11 96:9 98:11 101:11 103:7 107:18 111:17,21 113:1,6,14 115:20
declarations
10:11,17 11:16,19 12:19 14:19 15:10 15:17 16:5,14,24 17:4,17 40:3 43:9 45:25 50:3 83:9 84:9,16 89:7,15,19 90:1 91:1 93:19 94:10 97:4,22 98:22
declare
123:2
decode
118:13
decoding
118:11
decompress
118:14
deem
123:8
deficiencies
65:12
deficient
69:3
define
86:10 99:5
defines
73:2
definition
83:1 86:6 91:17 94:4 102:14,18,20 116:1
deflect
56:7
delay
11:24
demodulate
71:1,16
demodulated
75:19 76:6
demodulating
52:5
demodulation
78:7
demodulator
52:3,4,7,8 53:22 54:2 55:24 57:20 58:4,9 59:5,22 62:2,13 63:18,23 64:9 67:25 68:13 69:1,4,13,16 70:23 71:1,3,9,13 71:19,24 72:3,14 75:1,4,12 77:12 78:19,23 100:4,7,16 100:23 102:7
demodulators
26:13 58:5 59:14 61:12,21 62:8 64:4 65:7,25 67:10 71:19 100:19 101:25 102:11
demult
27:1

MAGNA
LEGAL SERVICES

demultiplex
117:18 118:13
demultiplexer
22:18 25:12,18 26:7 27:8 30:3,4,10,14 32:6,12 33:7,13,24 34:3,6,9,15,24 35:2 35:8 36:23 37:4,7,8 37:10 76:11,19 81:5 109:6,14,19 110:3
demultiplexers
31:7 32:4 38:10
demultiplexing
18:12,22 19:17 20:15 20:24 21:14,18 22:8 22:14 24:12 25:7,21 25:23,24 26:3,4,10 26:14,19,22 28:8,11 29:3,8,17 37:13,18
DEMUX
21:19 25:12 27:2,16 27:19 28:1 37:21
denotes
64:13
Dep
126:3
depending
117:14
depends
39:8,12 43:24
Deponent
126:4,25
deposed
9:10
deposition
1:13 4:2 7:20 8:23,24 9:14,17,17 10:10,13 10:16,20,25 11:8,13 13:16 15:3 22:21 23:5,9 51:1 54:6,15 56:8 70:2 77:5 96:3 122:20 123:2,4 124:11
depositions
39:11 40:3 43:9 94:9
describe
28:18 32:2 40:9 71:23 74:22 99:15 101:6
described
12:21 26:6,25 30:7 39:3,10,14 40:2 43:20 66:19 74:9 80:3 82:6 91:7 93:1 94:5
describes
37:20,22 57:21 66:22 75:7 78:5
describing
25:3 26:10 100:9
description
73:17
design
30:22 45:16 46:10,11 47:2 48:10 108:19
desire
74:3
desired
37:23 51:12 52:1,2,4 52:8 56:22 57:11,17 57:21 58:9 60:6,19 60:23 61:8,13,22 62:9 63:9,16,17 64:8,13,15,24 65:6 65:25 67:10,19,25 68:8,25 69:4,12,15 72:1,13 73:1,2,5,9 73:11,17,20,24,24 74:2,8,11,18 75:3 75:11 77:17 78:1 81:18 82:1,2 83:15 90:20 91:20,24 92:5 92:8 96:19,23,25 100:2,14,15 101:1,3 101:6,8,13 102:14 102:20 113:17 114:8 120:24
desires
74:2,3 91:19
detail
28:15,19 50:2
details
25:3 33:11 34:24 35:3,9,12 37:4,6,9 49:25 109:1
determination
17:15 100:6
determine
16:23 100:25
device
30:2,6 32:13,14 33:1 34:10 101:9 116:9 116:16,19,23,25 118:22 119:21,23 121:4
devices
31:7 45:13 120:25
diagram
28:5 65:14 73:20 77:9 88:5 98:10
diagrams
65:17 93:6
dictate
21:9
did
10:9,16,19,24 11:6 14:17 15:9,11,17 16:15,23 17:15 30:14 32:13,18 33:16,22 34:1 35:22 36:6,10,14 39:23 48:7 49:20 50:25 52:10 58:23,24 64:16 65:19,22 71:13 72:4,11,22 77:13 79:20 80:23 81:2,5,7,9 84:13,13 87:2,21 95:6 96:2,5 96:12 105:13 106:21 107:19 111:12,14 112:9,13 112:15
didn't
15:21 31:4,13 35:5 50:13 59:8 66:25 71:2,18 80:19,25 95:5 104:9 106:17 111:25
difference
56:3 69:7
differences
118:9
different
18:9 25:4,7 26:6 45:16 58:1 65:10 66:1 69:1 87:2 92:5 96:22 97:14 99:6 108:7 110:11,13 111:2 114:18 116:3 117:14 118:3,8,12 118:18 121:17
digital
19:12,15 20:7,19 21:12,18 22:6,17 24:9 25:25 26:16 27:15,15 30:3,22 33:1 34:3 53:18,20 55:14 68:10,12 69:25 70:14,20,22 70:25 71:17,21 86:22 87:7 107:24 108:6,10,13,14,20 108:22 109:2 118:12
digitized
27:23 38:6,16 71:8 90:9,21 92:3 96:21
direction
124:23
DirecTV
120:4 121:5,9,12
disagree
56:14
disclosed
99:3
disclosure
84:22 103:18 105:5
discuss
88:11,23
discussed
9:14 34:23 53:9 66:17 67:24 68:5 70:1 73:18 87:22
discusses

MAGNA
LEGAL SERVICES

53:4 66:2 67:3,6
discussing
45:14 62:3,4 88:17
discussion
43:18,19 60:17 66:18 68:14,21 83:2 122:14
Dish
120:2,4 121:1,5,8,8 121:11
disk
120:16
distinct
33:14,25 38:21
distinction
74:7
District
88:12,24
dividing
74:17
division
26:4,9 77:2
DM
97:13 99:22
do
7:19,23 9:13,16,19 10:5,9 12:1,1,21,23 12:25 13:7,9,14 18:20 20:21 21:15 22:7 24:10,13,20 27:10,11 32:18 35:17 38:12 48:13 48:20 49:18,23 50:3 50:17 51:14,15,23 53:23 54:16,19 55:4 58:17,19 59:2,23 60:22 61:2 63:11 64:16 66:17 67:11 67:12,21 68:2,14,21 74:16 80:9 85:1,2,4 86:16,19 87:4,17 89:1,22,22 90:19 99:8 100:11 102:9 102:11,12 104:19 104:24 106:6,21 112:24 113:18 114:10 115:12 122:8 124:3
document
10:16 15:14 111:19 111:22,23
documents
12:1,2,6,20,24,25 13:3,3,6,8,14,15 14:1,3 24:24 96:5 111:10,12 112:6
does
7:13 17:23 22:25 24:6 26:14 32:14 37:20,25 40:23,23 41:3,3,7,24 42:18 42:20 43:1,3 44:23 46:21 47:25 48:11 48:13 49:14 53:25 72:25 73:23 74:16 76:10,18 77:15 78:15,16 79:1 81:16 82:10,14,17 83:6,17 88:1,1 98:24 99:11 99:14,15,22 104:20 109:12 113:18 114:1 121:3
doesn't
64:24 69:24 71:22 74:3 82:14 94:12,13 99:25 100:10 101:22 104:13
doing
28:6 45:21 47:11 82:6 93:2,3 97:24
done
38:3 47:2 76:21 77:20 78:19,24 79:8 80:6 81:20 82:17
don't
10:22,23 13:2,11 14:12,20,24 18:1 19:3,9,23 21:6,7 22:23 23:11,25 29:5 29:20,21 32:10 35:16 36:19 37:19 44:20 45:4,4,7,12 46:7,9 47:1,12,18 47:22 48:4,17,18 49:8,9 50:11 54:9 54:12,24 55:9 56:6 56:12 57:1,14 59:15 59:16 66:9,10 67:12 73:13 74:1 75:7,14 75:21 76:2 78:11 81:4,8 85:7,18,20 85:25 87:10 89:9,21 90:23 94:24 97:12 99:2,3 102:16 103:20 105:12,16 105:16,19,19,20,20 106:3,7,9 107:9 108:15 110:24 111:5,5,7,15 112:5 112:19 120:12 121:6,9,10
down
92:4 96:21 110:14 120:7
Dr
111:17,21 112:7
draft
15:9,11,12,16,18 16:10 17:3,7,13
drafts
16:14
drive
13:18,21 120:17
Duluth
4:5 7:9,9
duly
124:5,17
duplicate
115:5
during
9:19,24 50:25 96:2
D-u-l-u-t-h
7:10
D1
111:15
D2
98:7 111:15
D20
98:8

E

E
6:1
each
11:12,15,19 12:18 13:23,25 14:8 15:8 16:4 28:20,22,23 42:10 44:7 63:21 83:16 92:4 96:22 101:14 113:17 114:24 116:8 117:21 119:25
earlier
26:6 108:25
easier
56:19 59:18
eat
120:16
EchoStar
120:3 121:8
edited
15:13 16:10,14
effect
124:8
eight
10:22 11:10 47:9 64:14 71:15
either
47:15 74:25 89:18,25 90:25 93:19,21 94:13 112:9
elaborate
44:21
electronic
13:5,7
electronics
31:4 36:18
element
18:16 28:23 39:2 57:16 103:21
elements
31:24 38:25 39:5,6,9 39:13 44:6,8 47:10 77:18 79:22 80:5

MAGNA
LEGAL SERVICES

81:20 93:3 98:18,19 101:15 109:23 114:23,24 115:5
else
11:3 112:10
embodiment
61:11 62:4,5,6,8 63:8 63:18,21 64:2 65:23 69:2 72:2,12 77:24 80:22
embodiments
58:16 65:5,6 68:24 69:11 72:24 73:8 74:16 106:1,11 107:11
employee
125:6,7
encryption
121:15
end
27:9 28:10 51:13 53:22 70:11 71:9 107:25 108:6,9,14 108:23 109:2
engagement
30:10,13 33:6
engineer
95:13
enough
31:4 72:18 111:1 114:23
entire
101:14 106:4
entirety
68:7
Entropic
1:8 2:7 3:7 8:2 126:2
entry
108:9
EPO
111:19
equal
40:7,12 42:13 62:15 97:25
ERRATA
126:1
especially
118:11
ESQ
5:4,5,15
essentially
71:16 77:7 78:7 115:22 118:8
estimate
14:23,25
estimates
15:4
European
111:11,13 112:2,6,6 112:11
even
47:12 81:23 99:16 116:6 117:18
evening
36:7,7
eventually
74:25
ever
20:8 29:2
every
34:5 98:11 115:5,24
everyone's
11:17
everything
118:14
exact
38:12 94:4 103:4 116:17
exactly
10:23 19:8 26:19 27:5 28:5,17 30:6 33:9 34:7 36:20 46:16 83:6 86:8 109:1
examination
8:18 124:21
examined
8:15 124:16
example
14:2 22:12 24:21,25 25:11 30:22 34:19 60:16 62:11,21 90:7 90:16 93:22 94:8 98:5 117:15 118:15 120:14 121:8
examples
90:22 93:7 94:9
exception
46:23 48:2 49:17
excuse
15:6 93:9
Executed
123:12
exemplary
63:8
exhaustive
99:15
exhibit
9:3,7 11:16,19 12:8 12:10,11,12 13:20 13:23 14:6 21:18 54:19 55:2 86:13 88:17,21 90:6 92:12 92:14 93:25 94:17 95:2,9 96:8
exhibits
6:9 12:7,13,17
exist
62:16
expect
24:2 25:4 27:9 28:10 28:12 41:20
expensive
52:7 53:18 54:2 55:14,22 68:9 69:15 70:23 71:21
experience
121:7
expert
19:11 22:3,5 24:8 93:11
explain
36:24 81:12 88:4
explained
43:8 52:5
explaining
23:24
explains
51:25 60:5 67:8
explicit
83:24
explicitly
111:24
extent
23:14
extract
109:13 117:19
extracted
102:19 109:5,18 110:3,22
extraction
117:21

F

face
66:8
fact
88:5 98:5
fair
9:8 10:7 11:21,22 20:7
familiar
22:22 23:1,3,25 33:7 40:24
far
35:15 73:6 76:4 122:15
fast
77:24 78:9 99:16,19 111:1
feel
60:14 62:6
few
50:11 95:15
fewer
102:3 115:17
field
18:10,21 19:5,6,11 19:15 20:7,18,19,23 21:12 22:3,5 24:8,9 24:24 25:8,24 26:15 26:20 29:3,18 30:2 34:9 35:3 75:18 76:6 108:1

MAGNA
LEGAL SERVICES

figure
27:13,14 28:5 38:10 39:14 53:8,12 55:14 56:17,20,21 57:9,16 57:19,23 58:7,15,20 58:21,22,25 59:13 59:17,20,25 60:17 61:2,6,11,16,17,20 62:3,4,5,7 63:9,19 64:2,20 65:15 66:18 66:24 67:4,23,24 69:1,7,7,19 70:3,3 70:10 71:1,25 72:12 73:16 74:12,14 83:16 90:7 98:11 101:11
figures
87:25 88:8 113:18
figuring
56:2
filed
11:16,19 23:10
filings
14:3
filter
28:20 39:4 45:24 63:22 81:22 92:7 93:4 96:25 101:15 101:17 102:15 109:23 114:24
filtered
64:22 92:6
filtering
55:23 69:21 96:24
filters
25:15 38:4 41:4 44:6 77:19 110:10 114:3 114:4,10 115:9
final
15:14
financially
125:8
find
54:18 55:12 60:8,14 63:2 102:23
fine
12:11 56:4 95:21 107:3 119:13
finish
40:18
Firm
8:8
first
9:3 10:13,14 12:15 12:19 15:11,12 17:7 17:12 30:22 39:10 52:4 54:6,14 75:19 86:14 88:15,16 92:12,14,21 94:10 96:8,20 103:7,10,12 113:1,6
five
47:8 50:15 56:11 71:14 119:8,15
fixed
115:23 116:7 118:5 119:1,24 120:8
flexibility
77:21
flexible
77:4 78:6 80:17 98:9 100:21 102:4
flow
108:22
focus
34:18 39:19 98:21
focused
29:22 98:14
folder
13:17,23
folders
13:17,21,22,25
follow
55:11
followed
26:11 69:20 111:17
following
20:17 64:1
follows
8:16 106:25 107:7
force
124:8
foregoing
123:2,4 124:11 125:1
form
15:20 16:18,25 17:9 17:18,25 18:6,13,23 19:19 22:10 24:15 25:9 26:1 28:13 29:10,19 30:16,20 32:24 33:17 34:12 38:23 40:1 41:11 42:2 43:6 45:2 46:6 46:25 48:23 49:21 52:12 54:4 59:7 64:18 69:5,17 72:5 72:15,19 73:12,19 73:25 74:20 75:5,13 76:12,20 78:17 79:3 79:19 80:13 81:11 82:8,22 84:2,11,19 85:11,23 86:4 87:12 89:8 91:3,18 92:1 94:20 98:16 99:1,13 99:24 101:4 103:19 104:6 105:11 106:2 106:14 107:22 108:2 109:8 110:4 110:23 113:12 114:20 116:11 117:24
format
82:11 91:5
forth
39:7 101:21 120:6 124:14
forward
20:18
found
13:14
foundation
75:24
four
15:8 16:4 47:8 58:23 58:24 60:18,23 61:8 63:10,16 64:14 71:14
FR
61:4
Fred
8:5,7
FREDERIC
5:5
free
60:14 62:6
frequencies
32:22 38:7,8 56:22 56:23 57:10,12 60:20,25 61:4 81:19 83:3,4,4 90:9,21 116:3,7,18 118:7 119:1,24
frequency
19:12,16 20:8,20 21:13 22:6 24:10 26:16 27:23 38:16 57:25 58:1,2,8,14 62:17 92:3 96:20 110:16,17 117:13 117:22 118:5 120:1
Friday
122:16
from
7:15 12:25 20:11 23:2 24:22,22 28:3 30:24 31:10 38:6 56:7 61:24 63:7 65:10 66:1 69:1 73:9,10 76:11,11,19 76:19 77:16,25 78:3 79:5 81:18 83:3 90:8,10,21 92:10 97:1,14 98:25 99:12 99:23 101:13 102:19 111:12 112:11,12,16,25 113:6 114:14,17,18 120:22,22
front
13:3 70:11 71:9 107:25 108:6,8,14 108:22 109:2
full
27:23 38:7 124:7

MAGNA
LEGAL SERVICES

125:1
fully
38:16 86:7
function
87:6
functionality
80:21 104:10
functions
77:6
further
28:15 77:21,21 121:22 125:5
furthermore
115:19
F1
61:4

G

general
104:2 108:1,5 115:2
generally
34:10 35:2 65:22 120:25
geographic
62:19
Georgia
4:5 7:9
get
21:4 23:11 92:25 94:24 106:17,21 107:19 108:5 119:24 120:7 122:16
getting
45:10
give
7:20 18:14 23:11 49:8 91:17 99:15
given
37:7 95:12 97:19,19 98:4,8 121:1
gives
62:11
giving
24:24
go
8:11 23:2,5 24:1 40:25 45:8 51:17 52:20 56:5,8,15,17 66:4 74:24 82:25 90:2 95:17 110:11 112:20
goes
28:18 58:3 67:24 100:7
going
20:17 43:17 50:2 54:23 56:17,17,20 58:15 61:2 68:4 71:16 88:21 90:2 93:8,10 100:12,17 110:6 115:9 116:4 116:19,23 119:24 120:13,14,15
good
7:5 8:11,20,22 20:13 23:19 50:15
got
36:9 46:14 106:23 108:20 122:2
graduate
31:15 36:10
greater
98:2
grocery
20:11
ground
103:13,13,23,23 105:6,7 107:17,18
grounds
87:5 103:10,15 104:4 105:2,8,24 106:11 107:11
guess
14:21,25 114:15

H

had
10:12 11:1 30:9,23 30:25 31:19 32:4 37:3 39:5,22 43:20 52:4 56:10 65:11 110:22 114:22 118:24
half
70:12,13 71:10 111:5 111:6
hand
7:18
Hang
62:23
happen
44:17 54:19
happened
114:9
happens
64:14 109:4,10
happy
106:6
hard
12:2,6 35:10 56:2 71:22 110:24 120:16
hardware
36:17
has
13:20 14:1 25:14 38:14,19 65:11 76:6 79:25 81:24 86:5 91:8 97:20 99:20 108:10,13 109:5 110:2,8 117:10 119:25 120:4
hashed
56:22 57:10,15 60:3 60:4,6 61:3,8
hashed/desired
60:2
haven't
14:5 15:4 29:23 47:17
having
8:14 34:21 35:13 50:3 56:2 60:19,24 61:3 115:21
HBO
101:23
he
22:18 23:10 25:17 26:6 27:1,13,18,25 28:16,18 37:20,20 37:21 57:14 70:22 71:2,13,19,22 73:2 73:20 74:12 75:7 77:24 99:3,14,15 100:10 111:18,18 111:20,23 112:23 117:21
heading
87:4
hear
67:1 72:7
heard
20:8,10,14 30:4,9
heated
122:2
help
60:9 66:14
helped
36:6
helps
36:3 42:23
hendifar@lowenst...
5:19
here
8:5 16:21 23:12 29:6 29:15 34:15 48:8,13 48:20 49:18 71:9 85:7,18 87:9 93:8 93:11,11 106:9 107:8 108:21
hereby
124:3
herein
124:12,13
he's
23:20 25:3,3 26:3,10 27:4,19 28:1,5 40:19 48:15,16 69:19 70:21 71:5,8 71:12,23 99:3 100:13,13,16 111:3
highlight
51:15

MAGNA
LEGAL SERVICES

high-speed
27:14 53:19,21 68:11 68:12 70:20
him
23:17 40:17
his
14:12 27:13 111:21 111:21 112:23
history
14:3 111:12,13
hit
116:2
holder
124:7
honestly
14:6 54:9
hour
50:21 95:19,20
hours
10:19,22 11:6,9 14:17 15:8 16:4
how
10:19 11:6 14:17 19:9 22:22 34:22 36:24 39:8 41:4 43:24 50:14 53:25 55:4,21 65:10,23 68:23 69:13 81:9 88:1,1 93:3 95:16 99:22 100:11,16 102:9,11 109:25 110:19 115:14 116:16
Hubbard
1:25 4:9 7:6 124:3 125:15
hypothetical
38:18 39:21 41:6,19 41:22 42:4,11,14,15 42:17,22 43:21 44:22 45:11,15 46:19 47:23 48:8 49:13,24,25

I

idea
108:5
identical
55:9 88:7 93:5
identified
69:14
identifies
54:3
illustrate
90:7
illustration
118:4
imagine
115:7
implement
112:18 120:20
implementation
100:10 120:8
implemented
110:20
implementing
116:17
implements
80:20
implies
108:8
include
43:11 62:20
included
16:24 36:21
includes
28:20 43:9 51:11,25 60:18,23 65:15 67:18,25 77:1
including
42:11 66:23 67:4 94:7
incoming
51:25
incorporated
17:3
Indecipherable
40:15
index
31:22 32:7
indicated
123:9
indiscriminately
42:18,21 43:3 44:25 49:15
industry
35:18
INFORMATION
6:14
input
17:19 27:24 32:22 33:13,24,25 34:11 38:6,6,19,20 39:24 40:6,10 41:7,8,23 41:25 42:12,13,19 43:1,4 44:24 46:3 46:20,21 47:25 48:3 48:10,12 49:15,16 52:2 57:24 58:2,12 59:25 61:6 62:1,12 65:3 68:7 77:17 83:3 98:12 100:3 101:8 102:19 109:13,17 114:18 114:19 117:4,10,15 117:22 118:24,25 119:5 120:23
inputs
33:14
inside
22:18 25:2
instance
29:7,16 43:24 121:3
instead
38:15 68:19 70:16 110:18 114:16 118:15
institution
35:17
instruct
23:15
instructed
6:18 23:1,17
instruction
23:3
instructions
40:25
Instruments
30:25 31:10 32:7,13
Instrument's
31:23
intend
23:25
intended
17:24
intending
23:4
interested
38:2 125:8
interface
59:22 77:12 82:7
interrupt
23:7 48:17,18 49:9
intimately
22:13
into
27:15 32:20 33:14,25 37:6 38:21 39:22,24 41:8,25 42:19 43:4 44:24 46:22 48:1,3 48:12 49:16 52:15 74:18 97:7 109:1
invariably
43:2 48:2,11
invention
53:1,9 65:12 66:2,22 67:2,7
inventor
74:3,10,21
IPRs
9:11,14 11:12,15 12:25 13:14 30:11 30:14 33:6
IPR2024-00432
2:10 8:25 9:3
IPR2024-00435
3:10
IPR2024-00438
1:10
issue
29:23 54:1,3 69:13
issues
17:16,24
items

MAGNA
LEGAL SERVICES

20:11
its
28:24 34:8 38:13 39:24 41:8,25 42:19 43:4 44:24 46:22 48:1,3,12 49:16,17 53:5,10 66:2,18,23 66:23 67:2,4,4,7,7 69:2,14 109:14
it's
18:16 25:4 26:5,18 27:2 31:14,18,22,22 31:25 33:8 34:2 35:10 36:15 37:16 37:22 53:2 54:23 56:14 57:25 58:16 63:1,16 65:16 69:3 71:22 76:1 77:4,7 78:25 79:13 80:15 81:23,24 84:16 90:16 93:10,24 98:9 99:6 102:4 104:7 108:20,21 110:5,24 118:20,20 119:7 120:8,12 122:3
I'll
9:6 18:8 21:24 22:4 24:2 44:19 48:5 49:4 57:8 59:15 79:12 106:6 117:2,3 122:12
I've
14:6 20:10 29:22 30:4 35:14 41:15 50:1 88:5,22 91:6,6 91:7,11 93:1,6 94:21 97:21,22,24
I/Q
71:9,18

J

June
36:4
just
10:22 12:8,10,20 14:24 15:7,7 21:23 23:4,7,13 29:21 30:7 32:10 33:1 34:2 36:1,15 39:13 41:16 42:18 43:19 44:21 45:19 47:13 47:20 51:22 54:7 55:10,18 56:11 64:6 64:20 65:1,8,15 69:19 70:16 73:4 75:23 87:14 88:16 88:19,19 93:23 97:1 97:8 101:5,15,18 103:1,4 104:14 105:21 106:6 107:15 112:22 114:9 116:7 118:20 119:6 121:4 122:6

K

keep
41:14 81:20
kind
14:21 33:9 37:5 108:8,18,19,25 120:1,17
kinds
108:18
knowledge
104:15
known
119:1,24

L

L
1:25 4:8 124:3 125:15
language
93:9
larger
97:17
last
15:22 22:21 35:24 56:8 66:25 77:5 117:1 119:7
Law
8:7
laws
123:3
lawyer
86:7
laying
75:24
lays
88:7
leading
55:12
least
24:21 25:11 65:5
lecture
49:8
legal
86:6,6 97:11
less
42:12 43:11,23 44:4 44:11 65:2,3 98:1 98:15,20 111:6,6 117:7
let
9:6 10:5 12:5 13:11 15:7 18:20 22:20 36:1 40:17 42:15,22 44:20 46:1 48:5 51:6 54:12,12 58:6 60:9,13 62:25 63:2 64:9,11 66:14,16,16 67:14 69:10 70:9 73:15 75:9 89:1 102:23 104:11,25 114:16 117:2 119:2 119:2
Lett
1:14 4:3 6:4 7:7 8:13 8:20 14:17 21:4,22 22:5,20 23:24 24:8 36:23 41:1,21 49:11 50:24 65:19 72:8 94:24 95:7 96:2 106:18 107:24 119:20 122:1 123:1 123:17 124:12,17 126:4
letter
64:13
let's
10:21 15:8 18:17 27:19,20 28:21 31:19 47:23 50:20 55:3,7 56:5 59:17 70:16 78:1 80:16 90:19 95:17 108:22 110:8 119:12
level
31:15,16 36:10,11
licensed
62:17
like
13:9 14:1,4,21,23 15:18 30:23,24 31:25 32:1 35:21 37:5,15 42:8 50:14 60:14 62:5 81:14 84:5 92:24 95:16 98:4,6 101:5,16,18 111:7 118:11,15 119:14 120:9 121:15
limit
117:9 122:3
limiting
104:17
line
23:8 51:20,21 52:6 53:14 54:16 55:7,8 55:17 60:16 63:6,12 63:13 67:16 68:6,16 68:17,19 70:24 77:10 126:5
lines
51:8 52:23 103:12
lineups
120:6
link
64:1
list
12:17 99:15
listing
12:16
litigation

MAGNA
LEGAL SERVICES

88:12,24
little
26:18 70:15,18 105:14
LLC
1:5,8 2:4,7 3:4,7 8:9
locate
112:9
located
4:4 7:8 12:3 117:14
location
7:12 117:13
logic
30:23 33:2,12,23 98:24 99:3,5,8
logical
33:23
long
36:15 52:14 110:19
longer
50:12,16
look
25:2,13 27:3 28:4 30:5 33:10 34:6,24 35:11 36:2 37:6 55:2,16 56:8 59:15 59:17 60:10,12,14 60:15 66:3,4 70:10 73:16 78:8 89:20 90:3 109:1 111:25 112:17,20,22
looked
14:5,6 15:4 24:22 66:9 67:23 79:21 107:16 111:20,20 111:24 112:5,12
looking
27:5 28:15 50:1 56:11 57:9 58:25 66:10 91:5 94:4
looks
35:3,9
loose
26:18
lost
50:13 52:13
lot
33:4 34:16 80:9
lots
120:19
loved
31:1
LOWENSTEIN
5:14
lower
58:2 71:11
low-pass
25:15 38:4 39:4 44:6 45:24 77:19 81:21 92:7 93:4 96:24 101:15,17 102:15 109:23 110:10 114:10,24 115:9

M

M
76:10,18 97:17,25,25 98:2,8,15,19,25 99:12
made
17:1,6 100:7 123:6 124:21
make
7:24 14:24 17:15 47:20 49:11 56:18 102:25 103:4 104:11,20 106:5 107:5 121:14
makes
33:4 59:18 101:2
manner
30:6
manufacture
121:4
manufacturer
116:16 121:3
manufacturers
121:1
many
10:19 11:6 14:17 34:14 39:8 41:4 43:24 47:7 93:1,2 94:8 115:14
mapped
79:21 81:9
mapping
80:5 98:17
maps
102:5
March
36:4
margin
70:15,18
marked
57:15
materials
10:13,14 13:19
matter
10:17 13:13 48:10
matters
8:24 11:20 14:19 15:10 36:21
may
1:15 4:8 7:1 44:16 45:16 50:8 51:3 52:22 63:22 66:10 66:14 78:3 86:13 94:3 97:11 101:25 102:2 103:6 104:24 106:4,7 108:7 110:1 118:6,7 119:23 125:12 126:3
maybe
10:21 11:9,9 14:2 15:7 16:15 26:21 42:14,22 44:12 68:15 75:22 84:13 98:7 99:9 105:13 111:5
mcuviello@banner...
5:10
me
7:7,15 8:5 9:6 10:5 11:22,24 12:5,9 13:3,11 14:21 15:5 15:6,7,12,24 18:14 18:20,24 19:25 20:1 20:4 21:9 22:20 29:12 33:4 36:1,3 42:15,22 44:20 45:12 46:1,13 47:22 48:5,17,18 49:8 51:6 52:16 54:5,12 54:13 58:6 60:9,13 62:25 63:2 64:10,11 66:14,16,16 67:13 67:14 69:6,10 70:9 73:15 75:9 84:13 85:12 86:6,10 89:1 89:10 91:17 92:25 95:21 96:14,16 97:11 99:5 102:23 104:11,25 105:13 105:20 106:22 112:25 113:6 114:16 117:2 119:2 119:2 122:8,9 124:13,17,22,23
mean
11:18 14:12 25:22 27:8 28:8 29:4,18 33:8 37:25 47:4 58:24 69:6 72:25 73:23 84:3 85:1,13 85:20,25 87:22 92:24 97:18 100:13 108:15 109:10 111:1 117:6,7 121:8
meaning
18:3 22:4 25:24 26:15 83:10,14,20 83:23,25 84:21,25 97:7 113:9,16,19,23 113:24 114:2,13
means
24:25 26:19 28:16 30:14 34:25 46:13 85:3,8,18 86:8 87:5 87:11 89:2 91:16,24 93:17 104:8 108:1
meant
27:6 29:8 34:7 37:7 37:10 58:22 74:11 74:12 99:9 109:1

MAGNA
LEGAL SERVICES

121:9
Meeker
5:5 8:5,7,7
meet
10:24 11:7 83:10
megahertz
53:17 70:17,17
memorized
41:1 78:11
mentioned
12:24 28:12 101:24 119:4 121:5
methodology
121:15
Michael
5:4 8:3 11:2
microprocessor
36:17
middle
49:9
might
27:25 28:15,16 29:21 35:11,11 62:23 77:25 99:17 109:17
Mike
119:14
mind
29:11 50:11 51:15 52:15 94:5
minute
27:1 54:24 122:6
minutes
50:11,15,21 56:11 95:15,19,20 119:8 119:16
mishear
31:13
misspoke
68:20
misunderstand
47:21 64:16
misunderstanding
66:13
misunderstood
42:15 57:6 66:15
mix
115:22
mixer
28:20 39:3 45:24 69:20 81:21 92:4 93:4 96:22 101:15 101:16 102:15 109:23 110:15 114:23
mixers
25:14 38:4,9 41:4,4 44:6 45:19 70:4 77:18 92:3 96:20 110:9 114:3,4,10 115:9 116:8 120:10
modification
104:1,5,13,17,18 105:4,25 106:10 107:10
modifications
103:17
modified
104:15
modify
103:22 104:9
moment
102:24
Monica
5:17
more
18:15 19:7,20 21:2 34:18 39:5 54:23 71:20 80:1,9 81:14 83:5 98:14 104:2 108:16 117:11
morning
7:5 8:20,22
most
115:16
mostly
97:25
mouth
105:17,21
move
39:17 45:8 47:6 83:5
mpeg-2
118:16
much
14:10 35:23 50:14 79:25 95:16 120:8 122:1
multiple
28:23 83:4,4 93:6 94:22 97:19 98:13 100:15
multiplexing
77:2

N

N
6:1 62:15 64:13,15 64:22 76:11,19 81:23,24 97:17,25 98:1,2,8,15,20,25 99:12,23 101:2
name
7:5 31:8 108:19 111:23 125:12 126:2
named
81:23 124:12
names
36:20
narrow
19:7 21:2
nature
117:15
NCO
28:21 39:3 81:21 101:15,17 102:15 109:23 110:15 114:24 116:1
NCOs
44:6 77:19 110:9 114:10 115:10,21 115:24
near
108:21
necessarily
46:5 66:4 100:19 102:10,19 109:13
necessary
123:7,8
need
19:7,20 21:2 23:20 27:3 33:10 35:11 37:6 45:7 70:17 78:11 84:5 89:15,20 90:23,23 105:17 106:4 108:4,25 117:21 122:8
needed
116:6
new
110:16
next
28:4 74:24 83:6
nice
30:25
night
36:6,6
nine
47:9 71:15
no
7:15,16 9:18 10:18 11:5,25 13:2 25:10 29:6,15 31:2 37:16 44:2 50:12 51:2 56:1 58:23 67:15 69:9 73:15 76:25 78:13 79:18 80:12 82:5 96:4,6,16 112:13 115:24 117:25 121:22,24 122:10,17
none
6:10,15,19 41:5 61:14,22 62:9
non-existent
56:12
nor
125:7,8
normal
75:20
normally
32:10 112:22
note
9:4
noted

MAGNA
LEGAL SERVICES

107:20
notes
13:1,4
nothing
7:21 124:18
Notice
4:12
now
13:5 20:17 29:6,15 45:25 48:8,13,20 49:18 50:8 51:22 58:13,15,15 71:25 72:24 75:17 76:9 85:18 87:3,10 88:10 88:19 90:3 102:23 103:6 106:9 107:8 107:24 109:4,25 110:18 119:10 120:25 126:5
number
7:6 12:11 15:3 39:12 39:13 40:6,7,8,10 40:12 42:12,13 43:12 44:5,5,11 45:23 54:16,20 55:4 55:6 62:15 63:9,17 65:3 69:25 77:6,18 97:13,14 110:13 115:3 117:5,8 124:7
numbered
14:1
numbers
9:3,7 12:10 13:20,23 14:6 63:12 68:16 115:23 116:2
numerical
45:19
numerically
25:14 38:5,9 45:8 47:5,13 70:5 93:4 120:20
numerous
91:11
NW
5:6

O

oath
7:14 123:5
oaths
124:9
objected
95:5,6
objection
7:13 15:20 16:18,25 17:9,18,25 18:6,13 18:23 19:19 22:10 23:12,13 24:15 25:9 26:1 28:13 29:10,19 30:16,20 31:17 32:15,24 33:17 34:12 36:25 38:23 40:1 41:11 42:2 43:6 45:2 46:6,25 48:15,23 49:1,4,7 49:21 52:12 54:4 59:7 64:18 69:5,17 72:5,15,19 73:12,25 74:20 75:5,13 76:12 76:20 78:17 79:3,19 80:13 81:11 82:8,22 84:2,11,19 85:5,11 85:21,23 86:4 87:12 89:8 91:3,18 92:1 94:20 98:16 99:1,13 99:24 101:4 103:19 105:11 106:2,14 107:19,22 108:2 109:8 110:4,23 113:12 114:20 116:11 117:24
objectionable
111:4
objections
7:15,16 23:12 49:6 94:25 124:21
obviously
14:24
obviousness
103:11
off
118:2 119:1 122:13
offense
78:10
offer
32:2 50:13
OFFICE
1:2 2:1 3:1
Off-the-record
122:14
oh
31:22 90:12 100:16 108:20
okay
7:11,17 8:10,20 9:2 9:10,19 10:3 11:3 12:12 20:23 23:22 24:4 25:20 27:12 31:13 32:3 38:18 44:3 50:19 51:5,7 51:18,18,23 52:24 53:25 55:6 58:13 59:17,19,25 60:5,9 61:2,6,18 63:5,15 66:21 68:4,23 75:25 76:4 85:2 86:15 89:23 90:12,13 91:14,22 94:16 95:14,23 97:9 100:24 103:9 105:10 112:24 113:5 119:15 121:21 122:12
on
1:15 4:5,7 12:21 13:8 13:15,21 23:16 27:20 28:18 29:22 34:18 35:20 37:2 38:13,15 39:7,8,13 39:19 43:24 44:5 47:18 49:24 51:15 52:14 53:14,14 55:7 58:19 59:2,20 60:16 61:12 62:23 63:6 64:20 65:3,14 68:6 70:5 72:22 75:14 77:8,18 83:5,9 86:16,25 87:1,3,5 87:17,22 88:6,10 93:8,11 98:6,7,8,10 98:14 101:11,21 103:4,11,15,16 104:1,4,5,6,9,14,15 104:17,18 105:3,3,4 105:8,20,24,25 106:1,10,11 107:10 107:12,18 110:7 113:13 117:14 120:5,6 121:15 122:6
once
9:10 115:11 120:7
one
13:25 14:2 21:17 22:12 24:21,25,25 25:4,11 26:11,21 27:9,20,20,22 28:9 28:10,12,21,22,23 32:19 34:2 38:8,8 38:13,14,24 39:2,5 44:7 46:15 47:6,8 51:8 55:10 58:16 66:3 67:8 69:25 71:14 73:19 74:10 77:23,25 78:4,4 83:5 84:8 88:15,16 88:16 89:13 93:22 98:12 100:17 101:7 101:14,19 102:24 108:3,6 109:6,19 110:2,18 111:3,7 112:16 114:24 115:4 116:8 117:7 117:11 118:1,6 119:10 120:2 122:11
ones
57:15 60:6 61:8,9 73:18,21 102:15,16 107:17 112:7
only
13:17,17 14:6 46:8 49:6 50:1 61:13,21

MAGNA
LEGAL SERVICES

62:9 78:3 92:7 96:25 103:15 109:22
open
13:18
opinion
15:15 22:7 24:10,13 24:20,21 25:6,20,22 41:14,16 46:4 47:5 47:18 48:14,21 49:18,24 75:14 82:21 97:1 98:3 109:20 114:1
opinions
93:12
opposed
103:16 121:5
orange
77:9,10
order
75:17 76:4
ordering
122:7,11,15
ordinary
18:3 25:8 34:9 73:7 74:6 83:10,14,20,23 83:25 84:21,25 97:7 113:9,16,19,24 114:2,13
oscillator
45:8,24 116:7
oscillators
25:15 38:5,9 45:20 47:6,13 70:5 93:5 117:20 120:21
other
10:12 11:2,3 12:24 12:25 13:2,13,13,15 13:18,22 25:1 29:7 29:16 31:23 32:20 34:22 35:14,14,20 57:15,16 65:17 69:24 71:7 73:3 80:21 88:9 101:6,7 102:6 107:16 111:10,12,19,25 112:1,5,7 113:21,21 118:9 121:14
others
11:7
otherwise
9:4 19:10
our
77:5 108:24
out
23:9 27:16 28:2,21 32:23 33:14,25 34:11 38:20 39:24 41:8 42:19 44:23 45:9 46:21 48:1,2 48:12 49:16 56:2 60:9 67:24 88:7 92:6 96:24 114:5,8 114:18
outcome
125:9
outline
13:1 16:16
output
26:12 27:14,24 28:2 28:25 33:15 38:14 40:12 58:1,3,5,8,20 59:3,5,13,14 61:12 61:21 62:1,8,12 70:11 72:3,14 74:25 75:4,12 76:11,19 78:19,23 79:5 80:16 82:6,11,12 97:18 98:6,7,7,24 99:12 99:18,23 100:7,15 100:23 102:3,6 103:2
outputs
28:24 46:3 77:3 80:7 82:1 92:5 96:22 97:19 98:13 100:4
Outputting
91:19 96:19
outside
29:2,7,16
overcome
69:13
own
28:24 38:14 120:1
Owner
1:9 2:8 3:8 4:6 5:13 8:2 111:11

P

Pacific
4:7 7:2
page
6:3 55:4,6,16 65:14 77:8 86:16,25 87:1 87:2,3,17,22 88:6 90:11 98:10 101:11 126:5
pages
125:1
paper
51:16
paragraph
63:6 83:12 86:19 87:15 88:10,23 90:4 90:11 92:11,14,21 93:23,24 94:10,17 95:2,9 96:8,15 97:2 102:24 103:7 113:1 113:3,6,14
parallel
59:21 77:3,12 81:25
Parham
5:15 8:1
part
15:22,23 19:3,23 34:3 44:12,20 66:25 69:3 77:9 110:15 111:22
particular
27:5 91:4 99:17 109:2 120:7 121:16
parties
125:7
parts
30:24 31:19 32:1 33:14,25 48:1,3
past
50:21 95:19,20
patents
12:14 20:1 21:2 29:22 38:11 39:15 40:9,9 43:15 45:14 45:22 50:4,5 65:18 73:3 76:7 80:3,22 83:8 88:9 91:9 94:6 97:8 101:6 102:6,22 112:4,6 113:21,22
patent's
65:5 66:17,21 69:1 69:11
path
28:20,25 38:14 83:16 113:17 117:21
Patricia
1:25 4:8 7:6 124:3 125:15
penalty
7:22 123:2
pending
21:11
per
83:7 118:14
perform
77:6,15 79:1
performing
82:20
performs
76:25 78:15 79:18 80:11 81:6 82:5
perhaps
18:14,15 19:5 20:4 25:4 36:2 47:12,13 76:2 84:13 86:10 89:10 99:5 112:17
perjury
7:22 123:3
person
73:7 74:6
perspective
73:10,10
Petitioner
1:6 2:5 3:5 5:2 8:4
phrase
25:21 26:14 30:9

MAGNA
LEGAL SERVICES

75:9
phrases
20:23 21:13 22:8 24:11
pick
30:24 45:9 47:6,7,8 114:22 120:21
picked
101:13
picking
28:1 38:1 45:7 46:15 83:5 114:4,7,11,14 114:15,17
picks
38:7 46:11
Pico
5:16
pieces
117:3
place
124:13
plain
18:3 25:24 83:10,14 83:20,22,25 84:20 84:25 97:7 113:9,15 113:19,24 114:1,12
plan
120:1
playing
24:1
please
7:17,25 10:4 12:5 18:24 39:19,20 40:18 41:18 47:21 49:5 50:8 51:3,6 52:22 54:11 61:18 62:6 76:14 103:6
plurality
83:15 90:8,9,20,21 113:16 120:22
plus
70:18 87:6
point
9:5 20:4 67:13 84:13 105:13 108:10 115:21,25
pointed
91:6
points
17:20,24
polarity
83:15
POSITA
24:23 26:15,21 27:3 34:6,24 35:1,3,7,8 37:6 66:3,7 73:14 73:16 75:10 83:13 83:22 92:17 94:5 97:6 104:15,19,24 107:25 108:17 112:13,16,19,21 113:15
posited
38:19
position
112:16
possible
45:18,18 75:3,6
potential
86:22
potentially
82:7
practical
115:3,16 116:5
preparation
11:1
prepare
10:9
preparing
10:15,20,25 11:7 14:18 16:7
prerogative
93:10
Present
5:11,20
pressed
110:12
presumably
58:1 71:5,18
pretty
120:8
previous
15:3 60:8 70:1
previously
51:22 88:19 119:1,24
printed
13:3
printouts
12:15,17
prior
9:14 15:16 16:13 30:10,13 33:6 53:5 53:10 54:3 65:11,21 65:22 66:1,5,10,11 66:19,23 67:4,7,9 69:2,14,18 71:6 79:21 94:7 96:7 98:18 103:21,21 104:1,9,14 111:14 124:16
probably
15:2 28:14 31:1 34:20 58:2 71:19,20 72:16 99:14 110:12 115:10,15
problem
52:21 122:17
procedure
9:13 56:7
proceeding
4:4
proceedings
122:20 125:2
process
9:17 15:14 23:25 52:6
processing
19:12,16 20:8,19 21:12 22:6 24:9 25:25 26:16 30:3 53:18 55:14 68:10
processor
53:21 68:13
produce
15:14
product
108:4,7,9,18 112:18 118:1,12 120:10 121:7,19
products
118:3,8,18 120:3 121:11
professor
36:5
programmable
115:25 116:2
proper
56:7 82:11
proposed
103:21
proposing
103:17
proprietary
121:14
prosecution
14:3 111:11,13 112:11
provide
54:12 80:14,15 81:25 87:18 89:2 94:24 100:4
provided
13:19 14:8 17:11,19 77:22 80:7 83:24 84:8,9,17,24 85:8 85:19 86:1 89:6,17 89:24 90:7,15 91:1 91:11,15,22 92:15 92:22 93:6,12,18 94:1,13 95:3,10 96:9,18 111:10,16
provider
119:25 121:2,19,20
provides
77:11 78:18 79:4 80:23 81:3 94:18 102:6
providing
78:23 80:7 82:6,11 87:10
publication
31:19
pull
36:1

MAGNA
LEGAL SERVICES

purpose
56:13
pursuant
4:11
put
17:20 49:6 105:17,21 108:4 111:21,21
P.M
122:19

Q

qualified
124:5
questioning
55:7
questions
9:5,16 10:4 20:17 21:4,10 22:23 23:9 23:20 41:21 50:3 56:6,8 88:22 89:14 93:13 121:23 122:9
quick
72:17
quickly
99:18
quite
15:21 35:16 59:8 66:12
quote
27:9,9 28:9,10 51:9 51:13 53:15,22 63:3 68:8 86:20 111:20
quotes
62:25
quoting
62:24

R

radio
19:12,16 20:8,19 21:12 22:6 24:9 26:16 70:11
raise
7:18
rate
70:13,18 71:11
read
23:2 64:6,20 65:1,8 66:8 73:14 96:14 97:1,8 106:4,22,24 107:6 112:17,24 113:5 123:1,6 126:5
reading
36:16 63:7 73:8 74:6 75:10 90:10 92:10 113:3
reads
51:8 126:5
really
10:23 14:20 26:23 29:23 39:8 47:17 50:1 57:14 71:2,23 78:13 81:24 101:22 105:21
reason
112:15 126:5
reasons
77:23 115:3,16 120:19
recall
9:13 27:10 29:20,21 66:17 67:11 68:2,14 68:21 89:21 96:11 110:25 112:24
receivable
62:18
receive
116:19,24 119:23
received
16:9 17:7,12 32:19 52:8
receiver
55:21
receiving
15:16 16:13
recess
50:22 95:24 119:18
recollection
14:22 29:7,16
record
7:25 14:8 120:15 125:2
recorded
124:22
redirect
121:24
refer
11:18 50:8 51:3 52:22 54:7 55:4 86:13 89:10 103:6
reference
12:13 47:15 103:22 104:18
referenced
111:18 112:8
references
21:17 50:6 66:5,6,11 111:15,23 112:10 112:20
referred
12:8 34:4
referring
20:18 54:10 61:16 88:6,18
refers
56:24 57:11,12 73:9
regard
15:3
regarding
10:1 111:11
regardless
63:15 119:1
related
18:15 19:8 111:19
relative
125:5,7
relied
83:9,20 103:15 104:5 105:3,25 106:1,10 107:9
rely
103:15 104:9 105:20 105:24 106:11 107:12
relying
104:6 105:4
remain
92:8 96:25
remaining
61:9
remember
14:20 18:1 29:5 30:23 31:1 32:4 35:16 36:20 54:19 57:1 59:16 66:10 73:6 81:4 111:22 113:3
remote
4:2 110:13 122:3
remotely
7:14
rendered
47:18
repeat
15:23 21:24 22:4 33:18 42:16,22 44:19 48:5 49:4 56:18 57:8 58:6 79:12 106:19
rephrase
69:10 73:15
replies
23:10
reply
10:11 11:11,16,18,18 14:19 15:9 16:5,10 16:14,16,24 17:3,12 17:21,23 50:3 83:13 113:14
REPORTED
1:24
reporter
4:10 7:5,11,17,24 8:10 104:23 106:21 107:21 116:21 122:5,17 124:6
REPORTER'S
124:1
representative
77:7
represented
38:16 77:10
representing
8:8 74:13

MAGNA
LEGAL SERVICES

request
79:14
requested
6:14 104:22 116:20
require
52:6 53:17 55:14 68:9 71:20 114:2 115:4 117:20
required
21:8 23:20 93:12
requirement
54:1
requires
70:12 71:10 121:16
requiring
69:14
respective
60:20,24
responsive
78:12
restate
15:23 48:6 70:9 76:13
restating
29:11
resulted
17:20
reversed
68:15
review
10:16 62:5 89:15,16 90:23,23 96:5 111:12,14
reviewed
10:11 51:19
re-ask
72:9
re-read
107:4
RF
33:1,7 58:2 59:25 60:18,19,23 61:6 65:3 69:20 71:7
right
7:18 11:14 13:24 26:24 27:21,23 34:16 37:19 39:1 43:25 44:9 46:15 47:9,10 57:5 58:4 58:15 63:25 64:7,20 71:4,7 78:2 80:15 97:16 98:8 100:6 105:8 109:16 110:6 110:8,10 112:3 114:6,8 115:4,13,15 117:7 118:15 120:18 121:25 122:11
right-hand
58:19 59:2,21 61:13
room
12:3
routing
80:15,24 81:3
row
63:24
Russ
111:21 112:7
Russ's
111:17

S

S
5:4
said
28:15 35:6 37:5 44:2 48:4 57:3,4 58:21 58:24 59:9 65:11 72:20,22 77:4 81:1 83:15 96:12 98:4 103:1 113:7,16 115:19 116:5 118:4
sake
99:16 118:21
sale
31:19
same
7:12 13:5 22:4 38:12 46:9 47:11 54:6 55:18,25 56:14 63:1 63:3,3,6 64:17 65:16 91:8 113:20 114:21 123:6
sampling
70:13,18 71:11
Santa
5:17
satellite
116:10,13 117:15 118:2,7,10,20,23 119:23,25 121:7
satellites
119:21
save
52:19 56:9 105:14
saw
32:6,12 105:13
say
15:7 18:17 20:18 21:7 23:13 31:20 35:10 38:1 41:15 56:8 58:23 59:10 64:24 65:19,22 70:16 71:2,22 82:9 83:12 92:25 95:5,6 100:11 101:22 104:16 110:24 118:20 121:9 123:1
saying
25:10 41:14 57:1,2 71:20 88:1 100:13 100:16 101:19
says
22:1,2 24:25 36:16 53:12 55:20 57:14 58:5 59:3 62:14 63:7,20 64:21 65:1 68:5 69:2 74:2 77:24 87:4
scenario
40:3,10 43:21 45:11 45:16 98:15 102:2
school
36:7
Scientific
36:8
scope
17:10,18,25 19:6,21 22:11 23:9,13,16 24:16 31:17 32:15 32:24 36:25 41:12 42:3 43:7 45:3 48:23 49:22
Scratch
70:7
second
15:6 17:3,12 20:2 61:25 65:14 77:8 83:13 88:6,15,18 98:10 101:11 111:6 111:6 113:14 115:20 119:6
secondly
115:11
section
51:20,24 53:2,4 55:11 60:8 72:21 86:17 87:14,18
sections
52:16 74:11,13
see
26:21,22 27:5 30:6 31:22 34:5,6,23 36:2 45:7 51:14 53:23 55:3,9 58:17 58:19 59:2,23 60:10 60:22 61:1,2 62:22 62:25 63:11,14 67:21 86:16,19 87:4 91:25 98:10 103:10 103:12
seeing
91:25
seems
14:2 61:10 69:19 97:24
seen
29:2 49:25
select
18:4 25:15 37:25 38:13 39:6 43:22 44:4,7,10,17 45:19 52:4 76:10,18 77:16 77:25 81:16 83:14

MAGNA
LEGAL SERVICES

84:21 101:20,21 109:22 110:13 111:2 113:16,20,23 114:2 115:1,10,22 118:5 120:22
selected 26:11,12 27:16,24 39:12 40:7 42:10 79:5 82:1 111:3 115:12,17
selecting 18:11,21 19:17 20:9 20:11,11,24 21:13 22:8,14 24:11 25:22 27:2 28:9 29:4,8,18 37:13,18 38:22 39:25 41:9 42:1 43:5,9,10,11 45:5 45:22 46:5,10,13,24 47:2,16 48:14,21 49:19 74:23 76:21 77:20 78:15,19 79:8 81:13,17,18,20 83:7 83:10,21 84:1,10,18 85:9,19 86:2 89:7 89:18,25 90:8,14,18 91:2,7,8,15,24 92:16,18,23 93:6,20 94:2,6,18 95:4,11 96:10,17 97:3 112:25 113:8,9,10 114:9,12,15,17
selection 45:1 55:24 76:25 77:15 79:1,18 80:6 80:12 81:6 82:15,17 82:17,21 83:1 91:23
selections 82:5
selector 21:21 22:19 25:13,18 26:8 27:8 37:23 39:9 76:9,17,18,24 77:15 78:15 79:1,17 80:11,23 81:2,24 82:5,20 98:9,12 99:20 100:3
selects 37:23,23 38:25 39:4 44:15,16 46:8 79:11 79:11
sending 68:7
sense 33:4 104:20
sent 52:3 63:23 101:25
sentence 52:20,20
separate 33:14,25 38:20 39:23
separately 74:19
separates 34:11 41:8,24 42:19 43:3 44:23 46:21 48:1,2,11 49:15
separating 114:18
serial 59:21 77:3,11 81:25 82:7
serialization 26:10
service 121:20
sessions 11:2
set 42:8 110:5,9 118:6 120:17 121:17 124:13
seven 47:8 71:15
several 36:19 98:6
shaded 73:19 74:11
shared 17:2
SHEET 126:1
sheets 32:1
shift 92:3 96:20
shifted 58:14 92:5 96:23
shifting 57:25
shortcomings 67:8
Shorthand 4:10 124:6
should 28:14 126:5
show 65:13 69:24 77:8
showed 36:22 91:7 93:23
showing 57:23 71:9 101:10
shown 38:10,11 39:14 60:17 61:3 63:8 74:11,13 83:16
shows 22:18 27:13 53:12 57:24 77:24
side 58:19 59:2,21 61:13 64:21
signal 19:12,15 20:7,19 21:12 22:6 24:9 25:25 26:16 27:20 27:22 32:19,23 34:11 38:19,20 39:22,24 41:8,23,25 42:19 43:1,4,12 44:24 46:3,20,21 47:25 48:3,10,12 49:15,16 51:25 52:2 60:18 61:7 68:7 70:12,12 82:11 83:16 92:4 96:22 102:19 109:14,18 113:17 114:14,18 114:19 116:18 117:4,10,19,22 118:12,24,25 119:5 119:23
signals 27:20 32:20,22 63:22 80:16 82:12 101:12 108:10 116:23
Signature 126:25
signed 15:15
similar 13:1 30:6 88:8 108:24
similarly 65:17
simple 24:7
simplicity 9:2
simply 14:8
simultaneous 40:15
simultaneously 115:15 120:15
since 71:6
single 115:6,24
sir 7:18
sitting 29:6,15 48:8,13,20 49:18 85:7,17 87:9 106:9 107:8
situation 110:1
six 47:8 71:14
skill 73:7 74:6 125:3
smaller 117:3
software

MAGNA
LEGAL SERVICES

36:17
solemnly
7:19
some
10:12 11:1,1 13:22 17:1,11,19 32:23 44:16 60:1,2,3,3 65:6 74:25 76:2 77:21 80:15 81:25 97:11 99:20 108:10 108:13,20 109:22 111:19
somebody
110:12 115:14
someone's
99:17
something
13:1 14:1 34:19 41:14 93:1 104:15 108:8,19 110:14 111:7 114:5
sometimes
35:10,11 44:17 98:19
sorry
11:24 15:21 21:1 30:18 31:9 33:18 35:5,16 50:10,13 52:13 57:6 58:21,23 58:24 62:23 63:12 63:25 66:25 68:20 70:6,6 72:7,16,17 80:25 87:1 89:13 92:10 106:15,17 122:2
sort
52:13
sounds
84:5 92:24
So-s
15:7
space
120:17
speak
9:20,25 50:25 96:2
speaking
23:12 49:1,3,7
specific
17:16 18:15,25 19:21 103:17 108:16
specifically
34:18 45:6 72:21 121:1,4
specification
62:1 63:1 73:4
spectrum
27:23 38:7,17 62:17 101:14
spell
31:11
spend
10:20 14:18
spent
16:4
split
32:19
split-up
32:21
spoke
30:18
stage
74:24 83:6
standards
118:14
start
47:23
starting
53:14 55:3,16 60:16 63:6 68:6 87:14
state
4:11 7:8 123:3 124:6
stated
113:13
states
1:2 2:1 3:1 53:15 67:16
stay
122:6
stenographically
124:22
step
46:1 64:10,11 66:16 117:2
still
35:5 105:7 117:20
store
20:12
straight
69:20 105:18
Street
5:6
strike
39:18 48:5 74:15 79:15 119:2
string
44:7
strings
28:22
structure
47:14 87:24 88:3,7 91:8 93:3 103:22 104:10
student
36:22
stuff
14:3
subject
11:12 36:21 50:5
submitted
10:12 11:11
subscribed
125:11
subsection
12:15
subsections
12:18
subset
100:22 101:24
substance
10:1
such
13:1 24:24 53:19 68:10 125:7
Suite
5:7
supervision
124:24
supplied
15:12 17:21
supported
102:8
supporting
10:14
suppose
74:2 75:6 97:18 110:5 117:7 122:3
sure
11:23 29:14 33:3 42:7 44:12 45:5,16 46:12 47:16,20 49:11 50:18 51:17 52:18 55:5 56:16 60:7 67:14 73:2 74:4 76:16 84:12 85:4 86:7 91:10 93:8 95:18 99:10 102:25 103:4 106:4 106:5,20 107:5 109:9 119:9 121:10
swath
51:10,11 67:17,18 81:19 83:3
swear
7:19
switch
77:1,5 80:15 81:14 81:24 87:2 97:19 99:19,20 100:1,3 110:15,21
switching
82:10
sworn
8:15 124:17
synonymous
18:12,22 19:18 20:25 21:14 22:9 24:12 37:13,18,19
system
38:18 39:22 41:6,19 41:23 42:5,5,11,24 44:10,14,16,22 46:2 46:20 47:24,24 48:9 49:14,24,25 110:20 115:8 118:17,23 121:13,16

MAGNA
LEGAL SERVICES

systems
19:13,16 20:20 21:13 22:7 24:10 26:17 33:7 67:9 116:13 121:14

T

take
33:13,24 38:5,6,19 50:10 54:23 66:7 78:10 95:15 98:5 110:19 119:6,10,11 119:12 122:4,12
taken
1:15 4:5 124:13
takes
28:21 41:7 43:1 46:3 46:20 47:25 48:9 49:15
taking
27:19
talk
45:12 84:4 122:6
talked
40:5 65:15 87:14
talking
12:14 19:8 21:2 26:4 27:4 28:1 32:25 33:1,10 34:15,18 38:12 39:3 46:17 50:4 69:19 70:21,22 71:5,12,23 81:17,21 82:16 87:24 88:13 97:23,24 103:2,5 105:6 107:15,17 108:5,25 111:18 120:9
talks
73:4 116:12
target
110:16 116:3
taught
35:19,24 36:7
teach
35:17 36:10,14
teaching
37:3,8
technology
18:5,11 75:24 76:2 110:20
television
37:24 42:5,24 44:22 46:2,20 47:24 48:9 48:9 49:13 75:18 76:5 83:15 90:8,20 110:7 113:17
tell
7:7 12:9 85:12 96:16
ten
38:19,21,21 39:22,24 41:7,8,23,25 42:19 43:2,4,20 46:3 47:9 47:9 50:17,20 57:24 57:25 58:11 60:1 61:7 71:15
term
32:9 34:16 86:6 87:11 89:3,7 91:2 92:16 93:20 94:1 95:3,10 107:24,25 109:3
terminologies
24:6
terminology
27:18
terms
26:19 27:6 97:11
terrestrial
118:2,11
test
39:11
testified
8:15 15:2 16:3,9 27:7 33:12 35:15 45:25 71:25 86:20 93:16 96:7 109:12
testify
124:17
testimony
7:19 10:1 34:8 35:1,7 37:12,17 41:13,16 65:4 70:2 77:14 78:14,22,25 79:15 79:17 80:11 82:4 83:2 85:10,17 86:3 87:9 92:13,20 93:24 94:9,16,19 95:1,8 97:5,22 98:22 124:11,20 125:3
Texas
30:24 31:10,23 32:7 32:13
than
11:3 12:24 13:13,13 13:18 25:4,7 26:6 34:22 35:14,20 39:5 42:13 43:23 44:4,11 54:23 57:15,16 58:2 65:2,3 80:3,9 97:17 98:1,2,15,20 99:6 102:3 108:7,16 111:3,6,6,10,25 112:7 115:18
thank
8:21 14:10,11 35:23 54:22 89:5 95:23 119:17 121:25
that's
10:22 11:14,22 14:13 16:8 22:17 23:13 28:5 37:21 39:14 40:11 41:1,20 42:20 43:14,14 44:1,2,17 45:5,21 46:9,16 47:16 48:13,21,25 48:25 52:20 55:6,18 56:4 57:17 59:5 60:7,10,17 62:13,24 63:24 64:14 65:8 70:7,19 71:12 72:16 72:22 75:20 78:5 79:5,24 83:6 92:19 93:9 94:18 95:21 97:16 102:7,8,21 106:13 107:1,3,14 109:16 110:15 111:3 113:20,23 114:25 115:2 118:1 119:13,15 121:4,15
their
120:1,5 121:14,15
them
12:22 15:8 16:7 32:23 46:15,22 52:5 56:24 60:3,4 74:18 78:1 89:16 93:5 109:22 115:25
then
13:25 22:18 27:16 28:4,18,18 33:13,24 37:8,21 42:15 55:15 64:8 67:23 71:8 75:9 86:10 92:6 96:23 101:10 104:11,25 108:24 113:19 116:6 118:20
there
29:20 30:2 31:6,7 32:5 34:14 36:19 38:3,4 41:5,23 42:25 59:21 61:24 62:24 71:6,13 73:4 73:5 75:22 77:21 82:19 91:4 100:6 101:17 107:21 109:17 115:20,24 122:3
thereafter
124:22
there's
28:22 66:11 75:21 76:2 118:9 120:19 121:13,13
these
9:11,14 12:25 13:14 14:19 15:10 29:22 30:10,13 33:6 38:24 39:5,13 44:5 47:9 52:10 65:17 76:7 83:7 97:7 109:23 120:10
they
12:21,23 13:10,22,22

MAGNA
LEGAL SERVICES

26:22 30:23 31:19 32:1 36:12,21 38:12 38:13 44:7 47:11 65:8 67:9 69:13 102:16 111:15 118:8 121:12
they're
58:14 118:18
thing
38:12 47:12 101:7 120:2
things
121:14
think
9:15,22 16:8 17:20 19:7 26:18 27:3,18 30:5,15 31:6 32:2 33:8 34:6,13,17,19 37:1,5,14,19,20 40:2 45:15,21 47:18 53:7 54:5 55:11 57:17,23 58:22 60:13 63:1 66:4,7 66:14 68:15 71:12 74:1,9,21 75:20,21 78:18 86:5 89:4 91:5,11 93:1,22 94:15,21 95:12 96:12 98:4 99:3,9 102:21 103:3,20 104:7,7 105:12 106:3,4,7 108:3,8 108:15,15,17 111:8 111:15,19 112:5,16 112:19 115:19 116:13 117:6,12 120:12 121:6,10,18 121:18 122:10
thinking
10:21 11:9
this
4:4 7:20 10:17 15:3 18:4,10,20,21 19:5 20:18,23 22:3,5 23:5,9 24:8,24 25:8 25:17 26:25 27:19 27:22 29:3,17,23 30:25 34:9 35:2,21 37:14 41:15,15 42:4 42:17 48:16 52:25 53:4 54:3 55:11,12 55:22 56:10 58:5 63:20 67:18 68:6 73:14,16,19 75:18 76:5 77:5 78:6 80:22 83:1,2,2 87:13,13 90:19 92:17 97:19 98:8,12 99:19,19 100:16 108:1 111:18 112:12 113:19 115:20 118:21 119:10 120:17 123:13 125:9,12
those
11:15 12:18,18 13:22 14:5 15:4 17:6 22:3 27:6 28:2,22,23 36:20 38:8,8 44:7 65:9 67:8 70:17 73:10 74:11,13,24 74:25 78:3,6 81:20 82:12 83:5 91:11 99:18 100:4,14,14 100:15 101:14 103:12 113:21 114:23,23,23 115:5 115:12,23 116:8 120:5
though
81:23
thought
29:24 47:17 50:2 56:10 57:4
three
8:24 9:11 10:11 11:9 11:12,20 12:7,13,18 13:21 14:19 16:5 39:13 47:8 50:5 65:14 71:14 77:8 88:6 98:10 101:11 118:3
through
14:1 22:21 28:3 36:4 39:10 62:13 63:24 67:15 77:16 82:2 89:20 90:2 91:20 97:21 100:2 103:3 113:24
throughout
94:9
thumb
13:18,21
thus
99:19
time
4:4,7 7:2 8:21 13:12 14:13 22:21 26:4,9 34:5 35:24 36:15 47:3 48:11 50:13 52:20 54:24 56:2,9 77:2 78:4 105:14 110:21 115:17 124:13,21
times
93:2 94:22 122:2
titled
86:17 87:18
titles
12:9
today's
8:23 9:17 10:10,16 10:20,25 11:8,13 13:16
told
41:15 94:15
too
111:4 118:10
took
30:22
top
42:8 110:5 120:17
total
43:12
totally
28:19 108:7
track
50:13
TRADEMARK
1:2 2:1 3:1
trained
22:22
transcribed
124:23
transcript
122:16 126:1
transmit
65:6 67:9 68:24 69:11,15
transmits
65:24 69:3
transmitted
63:18 64:3,9 72:2 100:19 102:10
treating
74:18
TRIAL
1:3 2:3 3:3
trick
76:1 92:24
trouble
34:21 35:13
true
109:24 123:9 125:2
truth
7:21,21,21 124:18,18 124:18
try
37:15 56:7 112:9
trying
24:17 52:19 56:9 74:22 75:21 81:12 92:25 117:8
TTL
31:10,14 34:3
tune
101:19,20 102:15,16 110:16 116:4 117:21
tuned
110:10
tuner
53:13
tuning

MAGNA
LEGAL SERVICES

19:12,16 20:20 21:13 22:6 24:10 26:16
turn
122:11
two
12:18 39:6,6 46:4,8 46:11 47:8 55:8 58:24 65:17 68:4 71:14 73:3 80:21 103:10,12
type
108:4,6 121:16
T-T-L
31:12

U

Uh-huh
69:23
unable
18:19
under
7:22 123:2,3,4 124:23
undergrad
31:16
undergraduate
36:11,12
understand
8:23 9:1,19,24 10:2 14:14 15:22 19:1,4 19:9,21,24 20:5,21 28:16,20 32:14 33:9 33:16,22 34:1,25 35:5 37:2,9 44:20 47:20 48:7 49:20 51:23 52:10 57:18 59:8 66:8 72:4,11 73:8,14,18 74:7,10 75:11 78:8 80:25 84:5 85:2,15 86:7 87:13,17,21 89:2 92:17 93:16 97:12 99:8 107:5 109:1,9
understanding
34:21 64:12 75:20 99:6 104:8,12
understood
10:6 26:15,22 34:10 37:3,9 41:9 49:12 57:3 83:14,22 113:15
undesired
51:13 52:1,2,8 56:23 57:13,22 58:9 61:9 61:14,22 62:9,20 64:3,25 65:7,25 67:10,20,25 68:8,25 69:4,12,16 72:1,13 73:3,5,17,21 74:8 74:12,18 92:6 96:24 101:7,8 102:12,16
UNITED
1:2 2:1 3:1
unless
9:3 35:3,8 47:4 50:15
unmodified
103:16 104:6,7,8,16 105:5 106:1
up
32:19 36:2,23 42:11 42:11 43:12,23 44:4 44:11,15 52:15 65:2 65:2 108:19 110:14 120:16
upon
83:20 118:23
us
105:14
usage
25:8,22 28:11 34:9
use
9:2 25:6,21 27:7 28:8 70:2 71:17 76:10,18 98:24 99:11 109:2 112:17,22,23,23 114:2,9
used
10:13 17:2 21:17 27:18 29:18 32:10 34:16 84:20 99:4,10 100:25 103:3 113:20 114:15 116:9 118:1,16 121:15
useful
120:13
user
109:4 110:1 111:2
users
102:11
uses
21:18 22:13 24:7 25:11 26:2
using
92:2 96:20 113:24 118:4
usually
121:13

V

v
1:7 2:6 3:6
value
43:11 66:8 99:20
variation
42:21 46:23
variations
34:14
various
88:11,24
vendor's
31:18
version
92:3 96:21 103:16
versus
101:23 117:15,16
very
18:17 19:6 20:13 22:13 23:1,19 24:7 30:22,25 52:6 53:17 53:19 54:2 55:14 68:9,11 70:20 77:4 80:16 86:6 98:9 102:4 119:14 120:12 122:1
via
5:11,20
videoconference
1:13 4:2 5:11,20
view
25:21 28:9 43:22 64:17 65:24 68:24 72:1,12 76:24 112:13
viewer
76:5
viewpoint
24:23
vs
126:2

W

walk
67:14,14
want
12:9 13:11 14:24 21:5 23:7 40:14 45:12 49:11 50:16 54:24,24 56:18 96:14,16 99:18 101:23 102:25 103:4 105:17,20,21 105:21 106:22 110:11,17 114:7,22 115:22
wanted
71:17 111:2 116:6 120:23 122:6
wants
43:25 104:19 109:5 112:23
was
8:15 11:23 13:19 14:7,13 15:12 16:7 26:7 27:8 28:7 29:18 30:21 31:8,15 34:3 35:24 36:7 37:10 38:19 39:17 39:21,23 42:14 50:2 51:25 52:3,19 55:12 56:9 61:24 62:24 63:25 64:1,12 65:19 65:23 67:9 70:7

MAGNA
LEGAL SERVICES

87:24,25 88:18 98:17,21 101:10 103:1,2 104:2,22 106:24 107:6,15,21 108:25 110:3 111:18,22 112:2 113:24 116:20,25 117:8,8,10 120:9,23 121:5 124:12,17
Washington
5:8
wasn't
11:23 22:16 60:7 72:17 83:18
waste
13:11 14:12 54:24
wasted
56:11
watch
75:17 76:5 78:4 100:12,17 101:23 109:5 110:1,7,18 115:14 120:14
watched
102:11
watching
99:17 110:7,18 111:3
way
23:5 24:1 32:2 35:14 41:13 57:17 80:17 95:5 102:5
ways
91:11
we
9:14 21:17,17 22:21 26:6 28:15,16,19 31:1 34:17 44:20 48:4 50:10,17 52:20 54:7 55:11 65:15 66:17 67:14,23,23 68:5 70:1 87:1,14 88:13,16 95:15 107:17 110:17,17 119:6 121:11,24 122:16
WEATHERWAX
5:14
welcome
50:24
well
8:6 10:12 15:2 31:18 39:15 40:19 41:19 51:12 57:23 67:19 69:9 71:2 73:15 77:13 79:15 88:8 90:16 99:9 101:5 102:14 108:3 119:25 121:25
went
22:21 39:22,22
were
9:10 10:13 17:2,6,20 31:6,7 33:7 36:12 36:19 45:6 52:3 57:25 58:11 63:7 75:17 87:1 88:16 103:3 107:17 111:15 117:18 122:20 124:21,22
we'll
55:11
we're
12:14 19:8 21:2 23:7 27:4 34:15,18 38:11 45:21,22 103:5 105:6 108:5 110:6
we've
34:22 45:13 46:17 50:4 73:18 81:17 82:16 110:18
whatever
23:2 63:17 89:22 102:18 104:18 110:6 111:4,7 112:18,23 118:16 119:22
whatnot
116:10
what's
14:8 22:19 37:22 61:12,21 62:8 93:8 93:10 109:1
when
11:18 20:18 30:21 32:6,12 34:23 35:24 51:6 69:15 73:9 84:4 85:8,18,25 87:22 97:25 98:8,19 104:16 108:25 112:24 114:25
where
12:3 24:25 29:8 33:9 40:10 43:24 46:16 49:14 60:13 61:24 62:12,13 64:7 67:23 77:9 90:10 97:25 98:15 100:2 110:1 111:18 117:13 118:4
WHEREOF
125:11
Whereupon
106:24 107:6 122:19
whether
22:7 24:11 48:14,21 49:19 63:15 64:14 79:10
which
12:13 15:4 16:10,14 19:3,23 22:19 26:7 28:5 34:23 38:1 44:12,20 57:20 61:7 65:15 69:2 70:3 77:5,9,10,11 80:10 82:19 88:13 99:22 100:7,7,17 113:7 116:5 121:16 124:7
while
29:23 36:5,7
white
57:15 73:21 74:13
who
4:3 73:24 74:2,2 89:13 111:2 120:2
whole
7:21 33:4 81:19 83:2 109:21 114:8 115:4 121:16 124:18
whose
73:10
why
14:13 27:12 28:7,11 55:13 70:22 98:14 101:22 120:19
wide
19:6 53:16
wideband
53:13 92:4 96:21
will
7:20 9:2 10:6 12:5 14:20 20:18 22:23 22:23 54:18
wish
104:24 110:1
wit
124:12
Witcoff
5:3 8:8
with
8:5,7 9:11,20,25 10:15,25 11:2,7,7 11:22 13:19 14:18 16:4 17:2 22:22 23:3,8,25 25:23 26:11 27:1 30:7 33:7 34:15 38:8 40:24 41:7,23 43:2 45:14,21,22,23,23 46:3 47:9 48:8 49:13 50:4,15,25 52:2 55:3,16 65:14 70:2,14 80:14 84:21 87:15 92:7 95:17,21 96:3,24 100:1 101:12,14,16 102:21 108:19 109:23,25 110:20 115:12 116:7,9 120:10,20 121:12 121:12
withdraw
9:23 16:20,21 18:8 117:2
within

MAGNA
LEGAL SERVICES

13:21 52:7 54:2 62:18
without
28:15 46:22,23 48:2 49:17 55:22
witness
6:3,18 7:9,12,14,23 8:14 15:21 17:1,11 17:19 18:1,14,24 19:20 22:12 23:16 24:17 25:10 26:2 28:14 29:11,20 30:21 31:18 32:16 32:25 33:18 34:13 37:1 38:24 40:2 41:13 42:4 43:8 45:4 46:7 47:1 49:23 50:19 52:13 54:5 59:8 64:19 69:6,18 72:16,20 73:13 74:1,21 75:6 75:14 76:13,21 78:18 79:4,20 80:14 81:12 82:9,23 84:3 84:12,20 85:12,22 86:5 87:13 89:9 91:4,19 92:2 94:21 95:20,23 98:17 99:2 99:14,25 101:5 103:20 105:12 106:3,15 107:4,15 108:3 109:9 110:5 110:24 113:13 114:21 116:12 117:25 119:17 124:12,20 125:11
word
18:4 20:9,10,14 24:25 25:7,8,11,23 26:3,22 27:25 28:8 29:3,17 30:4 34:5 34:23 59:9 84:10 85:9 103:3 114:15 117:1
words
18:11,21 19:17 22:3 22:13 69:24 71:7 105:17,21
work
121:12
worked
36:5 120:2,3
working
35:20 36:6,8
worries
11:25 67:15
wouldn't
46:23 47:14 115:20 116:6 117:25 118:1
writings
12:21,23
written
13:2

X

X
6:1

Y

yeah
31:25 32:25 36:4 49:23 55:2,16 60:3 62:24 72:20 76:7 103:12 116:12 119:12
yellow
30:25
yes
9:1,9,12,15 10:2,8 11:1 12:4,7 16:8,12 19:14 20:10,16,22 27:11 30:5,12,20 32:11,16 34:2 35:23 37:16 42:9 51:15 53:3,12,24 58:18,21 59:4,24 60:12 61:1 61:5,10 63:3,14 64:5 65:8 66:20 67:5,22 68:3,15,22 74:9 76:8 78:13 80:12 83:23 86:18 86:24 87:8,20 88:25 95:23 97:4 102:3,22 104:21 107:21 109:21 112:3 113:3 116:14 117:12,17 122:12
yet
110:22
you'd
37:15 62:5 108:15 116:6
you're
8:10 9:24,25 15:5 20:5,6 21:8,24 23:1 24:1 33:10 43:17 46:14 54:10 71:16 74:23 81:13 91:5,10 91:25 93:12 94:4 116:4 120:13,13,15 122:10
you've
46:14 48:16 93:11
y'all
50:15

Z

Zhang's
25:6,20 27:7 28:8 76:9,17 77:14 78:14 78:25 80:9 81:5 100:21,25 101:2 102:12 103:17 106:10 107:10 110:3,19 111:11,13 116:9,19 117:4,10
Zoom
13:18

#

#3400
1:25 4:9 125:15

0

00435
8:25
00438
8:25

1

1
14:1 51:20 52:22 53:8,12 55:14 56:20 56:21 57:9,16,19,23 58:7 60:20 66:18,22 66:24 67:4,16,23,24 69:1,7,19 71:1
100
53:13
1001
12:13
1002
86:13 88:17,21 90:6 92:12,14 93:25 94:17 95:2,9 96:8
1013
12:8 21:18
1016
5:16
102
60:18
1078
11:16,19 12:7
11,381,866
3:10
11,399,206
1:11
110
57:16
1100
5:6
114
92:11,14,21 93:23,25 94:10,17 95:2,9 96:8 97:2 113:1,3,6
115
90:4,11
12:30
122:19
1200
5:7
13
55:6
13th

MAGNA
LEGAL SERVICES

5:6
133
86:25 87:3
15
51:20 55:16 95:17
150
115:8,9,10,15 120:14 120:15
18
86:16 87:17,23
19
87:1 103:7
1983
36:4
1985
36:5

2

2
27:14 36:4 51:21 52:6 53:14 58:20,22 59:17,20,25 60:17 60:21 61:2,4,6,11 61:17,20 62:3,4,5,7 63:9,19 64:2,20 65:15 66:22 68:6,17 68:19 69:7 70:3,10 70:24 71:25 72:12 73:16 74:12,14 83:16 113:18
2:40
95:22
20
1:15 4:8 7:1 52:6 53:14 55:17 68:6,17 68:19 70:24 123:14 126:3
20005
5:8
2011
110:20
2018
54:21
2019
55:2
202.824.3000
5:9
2025
1:15 4:8 7:1 125:12 126:3
206
62:24
21st
125:12
212
87:15
230
22:18,19 25:12,13 37:21 76:22 77:20 78:20 79:8,9,10 80:7 82:2,18 83:6
240
76:9,17,18,22,24 77:1,10,15,22,24 78:15,24 79:1,4,11 79:17 80:8,9,11 81:14,23 82:5,10,20
260a
63:22
260n
63:22
27
51:21 60:16 83:12 113:14
29
51:8 52:23 67:16

3

3
28:5 38:10 39:14 60:21 61:4 70:3 83:17 113:18
30
14:2
31
51:8 52:23
310.307.4514
5:18
34
86:19
3400
7:6 124:7
35
88:10,23
36
62:13
362
50:9 51:4,20,24 52:11,23 53:1,3,5,8 53:10,25 56:20,24 57:9,11,12,21 58:7 58:16 59:1,20 60:5 60:16 61:12,20,25 62:1,11,21,25 63:4 63:5 64:2,12 65:5 65:16,24 67:3,6 68:5 70:11 72:1,12 72:25 73:3,8 74:7 74:15,17 75:10 80:21 83:17 84:22 86:14 88:3,8,14 90:6,12 91:8 92:11 92:15,22 93:2,25 94:17 95:2,9 96:9 97:3 101:6,16,18 102:5 103:8 107:16 107:18 113:2,7,11 113:15,21
39
62:13

4

4
58:15,22,25 59:13 60:15,21 61:4
40
95:19,20
400
70:17
43
63:6,13

5

5
62:13,22 63:5,13,24 72:21 98:11
54
63:24
56
63:24

7

7:57
7:2

8

8
6:5
8:57
4:7
80
90:11
800
53:16 70:17

9

9,210,362
2:10
90405
5:17

MAGNA
LEGAL SERVICES