

RECORD OF ORAL HEARING  
UNITED STATES PATENT AND TRADEMARK OFFICE  
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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QSC AUDIO PRODUCTS, INC.,  
Petitioner,  
v.  
CREST AUDIO, INC.,  
Patent Owner.

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Cases IPR2014-00127, -00129, and -00131  
Patents 6,023,153, 5,652,542, and 5,652,544  
Technology Centers 2800, 2500, and 2500

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Oral Hearing Held on Tuesday, January 27, 2015

Before MIRIAM L. QUINN (via video link), GLENN J. PERRY, and  
BRYAN F. MOORE, *Administrative Patent Judges*.

The above-entitled matter came on for hearing on Tuesday, January 27,  
2015, at 10:00 a.m., in Hearing Room A, taken at the U.S. Patent and  
Trademark Office, 600 Dulany Street, Alexandria, Virginia.

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P R O C E E D I N G S

(10:00 a.m.)

JUDGE PERRY: Please be seated. Good morning.  
I'm Judge Perry. With me on the Bench is Judge Moore.  
Judge Quinn is appearing by video to my left.

We are here this morning for oral argument on  
three inter partes reviews, IPR2014-00127, 00129 and 00131.

Per Judge Quinn's trial order, we are going to  
handle arguments serially on these three cases. In each case  
Petitioner will go first. Each side has 30 minutes. Petitioner,  
you may reserve as much time as you want for rebuttal, if you  
wish to reserve time.

And we may take a five-minute recess at some  
point during the morning if anyone needs to. So feel free to  
speak up. I will give you an opportunity to speak up at the  
conclusion of each case.

So let's begin with the Petitioner. Please identify  
yourself for the record. And let me caution both sides, if you  
refer to demonstratives by page or the record by page, please  
enunciate the page for the benefit of Judge Quinn who needs  
to follow along and may only have the audible cue. She may  
not be able to see what is being presented if you present  
something on the screen. So I would appreciate that.

MR. CRAIN: Judge Perry, may I ask a question?

JUDGE PERRY: Yes, please.

1 MR. CRAIN: There was an issue presented to the  
2 Board --

3 JUDGE QUINN: I can't hear. You need to step to  
4 the microphone.

5 MR. CRAIN: My apologies.

6 JUDGE PERRY: Please identify yourself for the  
7 record.

8 MR. CRAIN: My name is Andrew Crain for the  
9 Patent Owner. There was a question raised, and I wanted to  
10 bring it to the Board's attention before we started so that we  
11 were clear --

12 JUDGE PERRY: Is that microphone on?

13 MR. CRAIN: Is it on? Can you hear me?

14 JUDGE QUINN: Yes, I can hear you.

15 JUDGE PERRY: Okay. Thank you.

16 MR. CRAIN: With respect to demonstrative  
17 exhibits that Petitioner did not serve and I think there was a  
18 question about referencing to the record, before we started I  
19 just wanted to ask the Board for clarity on that point. Thank  
20 you.

21 JUDGE PERRY: I notice that those  
22 demonstratives did make it into the record, but I believe that  
23 happened on Friday, if I'm not mistaken.

1 JUDGE QUINN: I think your question is that  
2 Petitioner has not supplied demonstratives. Petitioner  
3 intended to refer to exhibits in the record. Is that correct?

4 MR. CRAIN: That is correct, Judge.

5 JUDGE QUINN: Okay. I believe our instructions  
6 were that you need to identify your exhibits during the  
7 process of your argument by exhibit number and, of course,  
8 page number so that we can follow that and the court reporter  
9 can track that down.

10 I'm not sure what else is needed at this point other  
11 than to make sure that you are clear.

12 MR. CRAIN: That clarifies it for me. Thank you.

13 JUDGE PERRY: Okay. So let's begin with  
14 Petitioner. It is 10:03.

15 MR. TULLETT: Good morning, Your Honors. I  
16 am Rodney Tullett from Perkins Coie in Seattle on behalf of  
17 Petitioner QSC Audio Products.

18 With me I have Mr. Grant Kinsel of our office, and  
19 he is going to be presenting the arguments for the 127, 129  
20 and 131.

21 JUDGE PERRY: Are you reserving any time for  
22 rebuttal?

23 MR. KINSEL: Yes, Judge. Grant Kinsel for  
24 Petitioner. We will reserve approximately five minutes for  
25 rebuttal on each of the three cases.

1 JUDGE PERRY: Thank you. Please proceed when  
2 ready.

3 MR. KINSEL: Thank you very much. The 127  
4 case concerns the '153 patent. And what is important about  
5 this patent is that Patent Owner has offered no substantive  
6 defense at all.

7 So, in other words, Petitioner has conceded that  
8 prior art, the admitted prior art and the two cited references,  
9 which are Hancock and Gordon, render these claims, all 22  
10 claims, unpatentable. There has been no substantive defense  
11 whatsoever.

12 Instead, the Petitioner -- sorry, the Patent Owner  
13 claims that the two primary non-admitted prior art materials,  
14 Hancock and Gordon, are not admissible evidence and are not  
15 prior art. And so those two items are subject to, in addition to  
16 Petitioner's -- Patent Owner's opposition brief, a couple of  
17 motions to strike.

18 And so with the Court's permission, I will handle  
19 all three of those issues at the same time, in other words, I  
20 will deal with the motions to strike and the responsive brief  
21 all at the same time. And, of course, if the Panel has any  
22 questions about any particular motions to strike or any issues  
23 with those motions to strike I would be happy to take them up.

24 But before I launch into our substantive defense of  
25 these papers, I want to point out something else that is very

1 important. Even if the Board agrees with the Patent Owner  
2 that the two references, Hancock and Gordon that we will talk  
3 about, are not admissible evidence or are not prior art, the  
4 Board should still find all 22 of those claims unpatentable.

5 The reason is that we have offered the declaration  
6 of Dr. Santi, he is our expert, and Dr. Santi has testified, and  
7 we find this at paragraph 33 and 34 of his declaration, and Dr.  
8 Santi's declaration is Exhibit 1004. He has testified that in  
9 light of the admitted prior art, all 22 claims of the '153 patent  
10 are obvious.

11 JUDGE PERRY: Even without the benefit of  
12 Gordon and Hancock?

13 MR. KINSEL: Exactly, even without those two  
14 references. And the Patent Owner has mounted no substantive  
15 defense with respect to the admitted prior art. They said  
16 nothing about the prior art.

17 So regardless of how the Board turns out vis-a-vis  
18 Hancock and Gordon, the claims are still obvious.

19 So with that let me --

20 JUDGE QUINN: But, counsel, let me ask you  
21 something. I think we instituted in the 127 case based on the  
22 grounds of the admitted prior art plus either Hancock or  
23 Gordon. There is no ground on which you rely solely on the  
24 admitted prior art.

1           Assuming that you have enough evidence with Dr.  
2 Santi alone, how do you contend the Board can consider a  
3 ground solely based on admitted prior art when we have  
4 instituted grounds that seem different from that.

5           MR. KINSEL: The Board has instituted on  
6 grounds that are broader, including Hancock and Gordon, but  
7 has also included the admitted prior art. So if you look at the  
8 institution decision you will see the Board identified the  
9 admitted prior art as disclosing many of those references.

10          And so even though the Board instituted on a  
11 broader basis, I think the Board can still make a determination  
12 on the narrower basis.

13          JUDGE QUINN: What do you mean by "a broader  
14 basis"?

15          MR. KINSEL: The Board instituted with respect  
16 to the admitted prior art and Hancock and Gordon. That's  
17 broader than what I'm suggesting, just the admitted prior art,  
18 so I think the Board can rule on just the admitted prior art  
19 even though it instituted on the admitted prior art and  
20 Hancock and Gordon, because the admitted prior art still  
21 shows all those limitations.

22          JUDGE QUINN: Wouldn't that be going beyond  
23 the trials that we have instituted on, however?

24          MR. KINSEL: I don't think so, Judge. I don't  
25 think so. I think it would still be consistent with the Board's



1 institution decision because the Board's institution decision  
2 relied on the admitted prior art. So the admitted prior art is in  
3 the record, and as is Dr. Santi's declaration, so those are in  
4 the record.

5 And I believe the Board can still render a decision  
6 based on just those decs, if it had to. Frankly, the Board  
7 doesn't need to because Hancock and Gordon are both prior art  
8 and admissible anyway, so a lot of this is much a do about  
9 nothing, but I raise it to make sure that the record is  
10 complete.

11 So let me then turn now to a discussion of the  
12 Hancock and Gordon pieces so that we get a sense of what  
13 we're talking about, what the specific pieces of prior art are.

14 And let me, if I may, provide a little bit of  
15 background. And I will put up for the sake of Judge Perry and  
16 Judge Moore here the cover sheet for the Hancock paper. I  
17 know, Judge Quinn, you can't see this.

18 JUDGE PERRY: Please identify the exhibit  
19 number and page.

20 MR. KINSEL: I will. This is Exhibit 1002 and it  
21 is page 1. So this is the cover sheet for the Hancock AES  
22 publication. This is one of the key pieces of the prior art that  
23 we are talking about.

24 And I want to show you this because I think it  
25 gives us some context for what we're talking about. What it

1 shows on the cover sheet is that this article was presented at  
2 the 89th Convention, 1990, of the Audio Engineering Society.

3 Now, the Audio Engineering Society is the  
4 premiere society for audio engineering. It was formed in  
5 1948. By the time of the Hancock paper it had put on 88  
6 separate conventions, this is the 89th, and we will see some  
7 others that were a little bit later, but this is the 89th separate  
8 convention.

9 And I think it is important to understand what the  
10 AES is. The AES isn't some fly-by-night website. This is the  
11 premiere place to go if you want to talk about audio  
12 engineering.

13 So let me put up, if I may, this is from page 3 of  
14 our reply brief. And it is discussing the AES's charter. And  
15 what it says is that the Audio Engineering Society -- again,  
16 formed in 1948 -- was formed for the purpose of collecting,  
17 collating and disseminating scientific knowledge about audio  
18 engineering; for preparing, publishing and distributing  
19 literature and periodicals related to this art.

20 So when we are talking about Hancock and Gordon  
21 and also Gittleman, we're talking about articles presented at  
22 the premiere conference where there is really no real  
23 suggestion, no material suggestion, that this was some kind of  
24 fly-by-night organization where the materials wouldn't have  
25 been actually presented.

1                   So as with Hancock, Gordon -- this is Exhibit  
2   1003, page 1 -- Gordon is also a document that was presented  
3   at an AES convention, in this case the 97th Convention. So  
4   we are talking about almost 100 conventions of the AES by  
5   the time this one was presented.

6                   There is an objection -- and I will digress just for  
7   a moment -- there is an objection to a piece of prior art that's  
8   part of the 542 case. It is called the Gittleman reference.  
9   And it raises some of the same issues as with respect to  
10   Hancock and Gordon.

11                  And I thought with the Panel's permission that I  
12   would just kind of lump that one in with my discussion of  
13   Hancock and Gordon, if that's all right. If it's not, we can  
14   come back to it.

15                  JUDGE QUINN: Counsel, with regard to these  
16   Hancock and Gordon papers, did you attempt to contact either  
17   of the authors to file these preprints?

18                  MR. KINSEL: We attempted to contact the AES  
19   and had no luck. We did not reach out to the authors of the  
20   publications, as far as I am aware.

21                  JUDGE QUINN: What evidence do we have that  
22   these were, indeed, presented and that anyone attended the  
23   presentations that are alleged to have occurred on those dates?

24                  MR. KINSEL: There is a lot of evidence. Let me  
25   lay it out. Number 1, there is the evidence from Jessica King.

1 And Jessica King's declaration, what it shows is that the AES  
2 website lists consistent information with what is shown on  
3 these cover pages.

4 In other words, the AES website also reflects that  
5 these papers were presented at the convention at the same  
6 time or effectively the same time as is shown.

7 JUDGE QUINN: From what I understand, the  
8 declaration of Ms. King is not there to show that these were  
9 actually presented, just there to show that you can get them  
10 from a website?

11 MR. KINSEL: The declaration of Ms. King is  
12 intended to show where we obtained the documents from, that  
13 they were obtained in the place where you would expect to  
14 find AES presentations.

15 There is a couple of different threads of argument  
16 running through here, and maybe if I separate them out I can  
17 address them and get to your point, Judge Quinn.

18 JUDGE QUINN: I understand that. I have read  
19 the record. My question to you is what evidence do you have  
20 that shows us that these were, indeed, presented, something  
21 outside of the document itself that says presented, what  
22 evidence do you have?

23 MR. KINSEL: As I mentioned, we have Jessica  
24 King. We also have substantial circumstantial evidence from  
25 Mr. Cordell.

1           Mr. Cordell is Patent Owner's expert. And he  
2 testified, he identified his document that looks -- his AES  
3 presentation that looks almost identical to the presentation  
4 that we have shown here, and he said that in his experience,  
5 when he presented his paper, when papers were presented,  
6 they were made available to anyone who wanted them, anyone  
7 who wanted to pay for them, and that there was an on-site  
8 bookstore for publication of the materials.

9           Now, he wasn't at the conventions, the Hancock  
10 report and the conventions, although he claims he was, but his  
11 evidence is circumstantial evidence of what would have  
12 happened with respect to these papers, too.

13           One can reasonably conclude that these papers,  
14 like Mr. Cordell's papers, were presented, that the material  
15 that is shown on the documents is not false or misleading.  
16 There is no suggestion from Patent Owner that there is  
17 anything mysterious or upsetting about these documents.  
18 There is no indication that these conferences didn't occur on  
19 the days that both the AES says and the papers themselves say  
20 they occurred.

21           So clearly these papers can be authenticated as  
22 genuine documents of the AES reflecting articles that were  
23 presented at these conventions.

24           Now, in addition to the fact that the articles  
25 themselves were presented, the articles were made available to

1 anyone who wanted to pay for them. It says so right on the  
2 cover.

3 So if you look, for instance, again, this is the  
4 Gordon paper, Exhibit 1003, it says: Additional preprints may  
5 be obtained by sending a request and remittance to the Audio  
6 Engineering Society.

7 So it is not necessary for us to even show that  
8 these papers were presented at these conventions, although I  
9 think we have. The documents show that they were available  
10 to the general public. And that's the touchstone for a printed  
11 publication.

12 A printed publication doesn't need to be presented  
13 at the convention. It just needs to be available to those of  
14 interest. To anyone who is interested it needs to be available.  
15 It kept be kept confidential. It can't be kept as a secret. It  
16 just needs to be available.

17 And what we've shown, I think clearly, is that this  
18 document was available to anyone who wanted it long before  
19 the priority date. So whether or not these conventions took  
20 place -- and I don't think there is any evidence, certainly no  
21 evidence to suggest that the conventions didn't take place as  
22 they say they did, there is certainly no evidence to suggest  
23 that these papers weren't presented as they say they  
24 were -- but even putting all of that aside, the fact of the  
25 matter is the documents were publicly available before the

1 priority date and so, as a result, they are printed publications  
2 within the meaning of 35 U.S.C 311(c).

3 So there are a couple of additional threads that run  
4 through the argument. And I think, Judge Quinn, you might  
5 be, when you asked me what evidence besides what's  
6 presented on the paper shows presentation, I think you might  
7 be reacting to some of the hearsay objections. And so with  
8 the Panel's permission I will address those so that we can get  
9 them out on the table.

10 The first issue I think that we have to take up is  
11 really just authentication under Rule 901. The Federal Rule  
12 of Evidence 901 requires only that the fact-finder have a  
13 legitimate basis to infer that a document is what its proponent  
14 purports it to be.

15 And so I've given you some evidence I think that  
16 allows you to infer that these documents are what they purport  
17 to be. Now, that's not even a preponderance of the evidence  
18 standard. This is a standard for authentication that is  
19 significantly less than a preponderance of evidence. All it  
20 requires is a legitimate inference.

21 And so let's see what's on the balance for whether  
22 these things are authentic documents. On the balance we have  
23 got Ms. King's declaration which shows that we got the  
24 documents from a place where you would expect to find them,  
25 the AES website.

1           We have got Mr. Cordell's testimony showing that  
2           his AES publication looks exactly like the publication that we  
3           presented. And we have got the AES website's bibliographic  
4           information that's consistent with the bibliographic  
5           information on all of these documents.

6           JUDGE QUINN: I think the issue here with the  
7           declaration, the way I see it, is that these were not published  
8           on the Internet in any time frame near 1994 or the other date  
9           that these were "preprinted."

10          You have come in with a declaration of someone  
11          who can at best authenticate that they are accessible from the  
12          website as of the time that you had looked for them.

13          And anything beyond that, such as trying to  
14          identify that they may have been available before that time  
15          frame, you are actually trying to assert the truth of the matter,  
16          which is when were they printed or when were they  
17          accessible, without personal knowledge of the person that  
18          they, indeed, were.

19          So the issue here is how far are you looking to  
20          authenticate these references with a declaration of a person  
21          who has no personal knowledge of the particular workings of  
22          the AES conference?

23          MR. KINSEL: As I mentioned, and maybe it will  
24          help if I put up -- let me put up, so I can discuss in specifics,  
25          authentication under the Federal Rule of Evidence 904.



1 JUDGE PERRY: Counsel, you have four minutes,  
2 unless you want to cut into your reserve time.

3 MR. KINSEL: Thank you. Under Rule 904 we can  
4 authenticate a document by its appearance, its contents, its  
5 substance or the circumstances surrounding its obtaining,  
6 being obtained.

7 That's what the Jessica King declaration goes to,  
8 the circumstances under which we obtained the document. We  
9 are not suggesting that Jessica King can testify about the AES  
10 or any of its policies.

11 We are merely using her declaration to show that  
12 one would expect to find a document from the AES on the  
13 AES website, and that's precisely where we found that  
14 document.

15 So it's like saying that Ms. King went to the  
16 library to get a book and copied the contents of the book. Her  
17 declaration for that purpose just shows that she got the  
18 material where you would expect to get it.

19 And that's standard bread and butter authentication  
20 testimony. That comes in in almost every District Court in  
21 the country to authenticate where a document came from. You  
22 got it from the place that you would expect to get it. And  
23 that's all we need to show.

24 But we've gone beyond that. We've put in  
25 evidence from Mr. Cordell that shows that his records are

1 consistent with ours. And we put in evidence of the AES  
2 website, as I mentioned, being consistent with the  
3 bibliographic information on those documents. So that's  
4 authentication.

5 The separate question of hearsay is -- I think  
6 where you were going, Judge Quinn -- and hearsay we handle  
7 quite simply. There are two issues with respect to hearsay.

8 First of all, I don't think we are offering it for  
9 hearsay purpose. These documents are authentic articles  
10 presented at conventions before the priority date of these  
11 patents. And so as a result we don't need to rely on the cover  
12 pages.

13 But even if you think we do and we need to rely on  
14 those cover pages for a hearsay purpose, they clearly fall  
15 within the hearsay exception for ancient documents under  
16 Rule 803-16 or under the residual hearsay rule under 807.

17 And I'm happy to go through those specific tests  
18 with the Panel in order to make you comfortable with that.  
19 But in a nutshell, the ancient document exception says  
20 statements used in documents that are more than 20 years old  
21 can be used for hearsay purposes.

22 So these documents are clearly more than 20 years  
23 old. Whether they were presented or otherwise is besides the  
24 point. They were all clearly more than 20 years old. And so  
25 they fall within that exception.

1           The residual hearsay exception has a number of  
2 different parts, each of which I think we satisfy. But I want  
3 to raise a more general point here. Patent Owner has  
4 conceded that these documents render these claims  
5 unpatentable. There is no question about that. There is no  
6 question about the prior art rendering these things  
7 unpatentable.

8           And so if we take a super-pedantic approach and  
9 try to exclude documents on the basis of unfounded hearsay or  
10 unfounded authentication concerns, and I will remind the  
11 Panel that there is not a stitch of evidence to suggest that  
12 these documents are not authentic, and normally when you get  
13 into an authentication battle somebody puts in a document and  
14 the other side says, well, wait a minute, you know, I was there  
15 that day and that document wasn't handed out.

16           That is not what you have here. The only evidence  
17 you have on the scale is from us. There is not a scrap of  
18 evidence from the other side that these documents are not  
19 exactly what they purport to be.

20           And so what we are looking at is potentially  
21 extending a patent monopoly on patent claims that are  
22 manifestly unpatentable using bread and butter invalidity  
23 references. AES publications are bread and butter invalidity  
24 references in just the same way that an IEEE article would be  
25 a bread and butter invalidity reference.

1                   And I think that there is a real danger here of  
2 turning this into a different kind of proceeding. We don't  
3 have any way to get discovery.

4                   So to answer your question earlier, Judge Quinn,  
5 did we contact the author? We did not. But we don't have  
6 any ability to subpoena the author. If the author wants to give  
7 us a declaration, he gives us a declaration. If he doesn't, you  
8 know, I guess we're out of luck.

9                   But that can't be the standard in a proceeding like  
10 this where we don't have discovery as a matter of right, we  
11 don't have the right to subpoena authors or AES or anybody  
12 else. And so the only evidence that we can put out is the  
13 evidence that we can control, which is materials obtained  
14 from a reliable source and authenticated as such.

15                  I believe I'm into my reply time, so I will stop.

16                  JUDGE PERRY: Thank you, counsel.

17                  MR. KINSEL: Thank you.

18                  MR. CRAIN: May it please the Board. Before I  
19 get into the response I do have hard copies for Judge Perry  
20 and Judge Moore. We did serve the demonstratives that I'm  
21 going to talk to, and certainly, Judge Quinn, you can follow  
22 along as well.

23                  May I approach and provide those?

24                  JUDGE PERRY: Please. Thank you.

1                   MR. CRAIN: Thank you. As I begin, I think it is  
2 helpful if we remind ourselves of the scope of the inter partes  
3 review.

4                   The prior art here that is available may only  
5 consist of patents and printed publications, and I believe there  
6 was even a suggestion by Mr. Kinsel that, even if the Board  
7 were to not consider the Hancock and Gordon references, that  
8 there could, in fact, be a determination of unpatentability and  
9 cancellation of the claims at issue, based upon the admitted  
10 prior art and the testimony of Dr. Santi.

11                  We would agree that this would constitute a new  
12 ground and would not fall within the printed publication  
13 patent allowance of the inter partes review and the scope.

14                  So I'm not prepared to address that beyond that.  
15 We would consider that a new ground.

16                  But as far as a printed publication, as is shown on  
17 slide 2, a reference from Paper 21, on page 2: The reference  
18 is considered to be a printed publication upon a satisfactory  
19 showing that the reference has been disseminated or otherwise  
20 made available to the extent that persons interested and of  
21 ordinary skill in the subject matter of the art, exercising  
22 reasonable diligence, can locate the reference.

23                  And it is our contention that the two references at  
24 issue, the Gordon and Hancock reference, do not satisfy this  
25 requirement.

1                   And I want to point out, too, that under the Statute  
2     315, it is the Petitioner's burden to meet this requirement, to  
3     show that, in fact, there is a printed publication, that the  
4     references constitute printed publications.

5                   We've already been talking about this -- moving to  
6     slide 3, or page 3 -- we are talking specifically about the  
7     Gordon and Hancock references. Like Mr. Kinsel, I, too, will  
8     reference what we will call the Gittleman reference. And I  
9     believe that's in the 129 IPR. And we will talk more about  
10    that one later.

11                  But for the same reasons that Hancock and Gordon  
12    failed to constitute printed publications, the same is true for  
13    Gittleman. So we share that point, that these do fall or rise  
14    together.

15                  Turning to slide 4, we see Exhibit 1003. And I  
16    believe that Mr. Kinsel showed an image with respect to this  
17    issue. This is the Gordon preprint.

18                  Now, it is actually unclear just exactly what a  
19    preprint is and what a preprint is not. We do have some  
20    testimony, and I will reference that, from both Mr. Santi and  
21    Mr. Cordell, who is Patent Owner's expert in two different  
22    matters, as the Board is probably full well aware of, but the  
23    issue that's being presented to this Board is that the  
24    documents at issue, Gordon and Hancock, are preprints that  
25    were actually presented at these respective AES conferences.

1 JUDGE PERRY: Counsel, is there any evidence  
2 put into the record that these papers were not presented at  
3 their respective conventions?

4 MR. CRAIN: That is a great question. And by  
5 Patent Owner, we have no knowledge whether they were or  
6 were not presented. The point that we're making is that this is  
7 the Petitioner's burden.

8 And I will have a slide that talks about that, and  
9 there is one that you may have seen, where Petitioner has  
10 pointed out the alleged failures by Patent Owner that the  
11 Patent Owner has -- things that the Patent Owner could have  
12 or should have done, which is essentially proving a negative  
13 with respect to this preprint and whether or not it was actually  
14 presented.

15 JUDGE QUINN: Can you discuss that now?  
16 Because I'm interested in knowing, to the extent that Patent  
17 Owner -- that the Petitioner has shown that on its face there is  
18 some question about that this may have been presented to an  
19 audience that qualifies as the public, they seem to take the  
20 position that now somehow Patent Owner has the burden to  
21 prove that it wasn't.

22 So I would like to hear more about you from the  
23 perspective of the Patent Owner's burden on this issue.

24 MR. CRAIN: Okay. And I would like for -- I'm  
25 going to jump ahead then to answer your question, Judge

1 Quinn. And I will be jumping to slide 16 to address your  
2 question, Judge Quinn. So if you will let me turn to that.

3 JUDGE PERRY: And please identify the exhibit  
4 number that you are speaking about.

5 MR. CRAIN: I am actually -- slide 16 contains an  
6 excerpt of Paper 25, at page 11, which was also discussed at  
7 Paper 34, pages 3 and 4. And before I get into the content of  
8 that, Judge Quinn, you made the statement of something to the  
9 effect that this paper was actually presented.

10 And if the Board goes and examines the  
11 Massachusetts Institute of Technology, the MIT versus, I  
12 think it is the Fortia matter, and this is a case that was relied  
13 on by Petitioner in support of its argument that these, in fact,  
14 are printed publications.

15 As I understand the MIT case, as I will call it, and  
16 the citation there, this comes from Petitioner's papers, by the  
17 way, 774 F.2d 1104, the paper there, there was actually  
18 evidence in the record, Judge Quinn, that the paper was  
19 presented to six individuals. There were six people that  
20 received copies of the paper. And it was presented to in  
21 excess of 50 people.

22 Now, with that foundation, to answer your  
23 question in the context of slide 16, we do not have that  
24 evidence in the record that the paper was presented, by  
25 Petitioner, and we have no record or evidence from the record



1 from Patent Owner that it was not. There is no assertion that,  
2 in fact, it clearly was, other than what is presented on the face  
3 of the document itself.

4 And on slide 16 there is three things, I believe,  
5 that Petitioner criticizes Patent Owner for not doing. The  
6 first pertains to presenting a declaration, saying that the  
7 document was not published or disseminated, saying that we  
8 would essentially prove the negative issue of that.

9 As we heard from Petitioner, they contacted AES  
10 and got no response. We did not contact AES, Judge Quinn,  
11 because we believe that this is Petitioner's burden to establish  
12 this document as a printed publication.

13 The second thing is that, you know, that we did  
14 not contact, Patent Owner, did not contact the authors or did  
15 not present any declaration from the authors themselves,  
16 Hancock, Gordon, Gittleman. Well, that's true of Petitioner.  
17 We did not contact them because, as we understand the  
18 burden, it is not ours.

19 And third is the contacting of the AES librarian.  
20 No one contacted the AES librarian, assuming that there is  
21 such a person or an office in the AES. We did not because we  
22 did not believe it is our burden, but nor did Petitioner.

23 JUDGE QUINN: What about the Cordell  
24 declaration that Petitioner alleges is circumstantial evidence  
25 that whatever seemed to have been routine in the conference

1 that Mr. Cordell presented at, that must have also happened in  
2 these other conferences that we're dealing with right now?

3 MR. CRAIN: That's a good question, Judge  
4 Quinn, and I would like to direct your attention in response to  
5 that question to slide 14, and we will also talk about slide 15.

6 Slide 14 is from Paper 25, page 10, and discussed  
7 also at Paper 34, pages 7 through 9. As I understand the  
8 argument, Patent Owner's expert in a completely separate IPR  
9 proceeding is being offered to show the usual and customary  
10 practice of the Audio Engineering Society.

11 Now, by no means do we contend that the Audio  
12 Engineering Society is a fly-by-night organization, as was  
13 mentioned by Petitioner's counsel. And I would like to circle  
14 back to point out that the documents themselves contain  
15 statements from AES disclaiming the contents of the  
16 respective documents, where AES has made affirmative  
17 statements to make clear that they do not, you know, take  
18 charge for the response or the contents of these documents,  
19 which would include the components upon which Petitioner  
20 relies.

21 But with respect to Mr. Cordell and the reliance  
22 that Petitioner places on him, he is not any agent or acting  
23 authority, you know, individual for the Audio Engineering  
24 Society.

1           No evidence from AES has been presented other  
2 than someone who happens to be a member and, as pointed  
3 out, has attended perhaps 30 to 40 percent of the AES  
4 conferences, which we now see they constitute maybe a  
5 hundred or perhaps more, over the life of his career.

6           And with respect to, turning to focus now, and on  
7 slide 14 I just wanted to make clear that it is being presented  
8 that Mr. Cordell can identify the usual and customary  
9 practice.

10           But it makes clear on slide 15, which represents  
11 two sections of Paper 34, where if you direct your attention,  
12 Judge Quinn, to the bottom highlighted quote there,  
13 Mr. Cordell made clear to us that I do not know all of the  
14 policies of the AES; I am only speculating.

15           He was able to give his firsthand knowledge of the  
16 instances that he attended, which is somewhere, as he  
17 speculated, 30 to 40 percent of the AES events. He was able  
18 to tell us maybe what happened in the instances of his own  
19 attendance, but he was not able to tell what happens by AES  
20 as a matter of usual and customary practice.

21           JUDGE PERRY: Is there any reason, counsel, for  
22 us to believe that the practices at the other 70 percent of the  
23 conventions would be different from the experience that  
24 Mr. Cordell testified to?

1                   MR. CRAIN: Well, Mr. Cordell's testimony  
2 doesn't tell us about the other 70 percent. So we would have  
3 to make that assumption. We would just have to assume that  
4 if this was done -- at this event that it is always done.

5                   And certainly from over time of individuals  
6 attending conferences, trade shows and of the like, things  
7 change, things are done different, schedules change,  
8 sometimes things are presented, sometimes they are done  
9 differently, you know, there are certainly factors that could  
10 support that something is different at different times. We  
11 don't know exactly what happens the other 70 percent of the  
12 time.

13                  JUDGE PERRY: Counsel, are the Hancock and  
14 Gordon references in the same exact position or are they  
15 different because Hancock ultimately made its way into the  
16 journal of the AES?

17                  MR. CRAIN: There is no evidence of record with  
18 respect to any of these documents appearing in the journal of  
19 the Audio Engineering Society.

20                  But with respect to that I would like to make a  
21 clear note that there, in fact, is a Journal of the Audio  
22 Engineering Society, and the Journal of the Audio Engineering  
23 Society is a document or a publication that apparently AES  
24 has been publishing for some period of time. It has volumes,  
25 editions. We can go look up any volume and edition of the

1 Audio Engineering Journal and find whatever it may contain.  
2 And that would clearly give us some insight.

3 What we're dealing with here is something much  
4 less formal. We are not dealing with a journal article of the  
5 AES. We are dealing with a preprint that is unclear whether  
6 or not it was actually presented, which is the authentication  
7 issue that Petitioner is giving us.

8 They are telling us that this is a preprint that was  
9 actually presented. And they are giving us the documents  
10 themselves to rely on and the librarian. But I want to come  
11 back and make sure I've addressed your question.

12 With respect to whether or not these documents, or  
13 there may be any other articles out there with respect to  
14 Hancock or Gordon, I believe that is not of the record. And I  
15 would not want to characterize that or speculate with regard to  
16 that.

17 I do believe there is a difference with respect to  
18 Hancock and Gordon on this ancient document, the 20-year  
19 issue. I think Gordon falls less than the 20-year issue under  
20 Hancock -- I'm sorry, under the Federal Rules, so I would  
21 point to a distinction there.

22 If I may speak to the issue of the librarian. We  
23 have already spoken about at least one of the instances that  
24 Petitioner is relying on other than just giving us the document

1     itself and saying trust the document, Cordell, we talked about  
2     Mr. Cordell. The other is the librarian.

3             Now, I think it's clear to everyone we are not  
4     talking about the AES librarian. I think everyone gets that.  
5     We are talking actually about the librarian of the law firm of  
6     Perkins Coie, who happens to be counsel for the Petitioner,  
7     where perhaps someone walked down the hall a couple of  
8     doors and asked the librarian to pull this document.

9             And if I could turn now and go back -- I'm sorry to  
10    be jumping around but I want to be as responsive to these  
11    questions as we can -- if you direct your attention, please, to  
12    slide 9.

13            The librarian of the Perkins Coie law firm  
14    submitted this declaration, which was talked about during  
15    Petitioner's argument, submitted this declaration that she was  
16    able to access the document approximately sometime in 2013,  
17    shortly before the petition was filed, and was noted by Judge  
18    Quinn, we would agree with the Board, or agree with the  
19    statement that, at most, if anything, all that Ms. King's  
20    declaration establishes is that the document was available  
21    when it was downloaded approximately sometime in 2013.

22            But the additional point I would like to make, if  
23    we could turn to slide 10, please, and slide 9 and 10, by the  
24    way, constitute Exhibit 2002, page 2. The highlighted portion  
25    there shows an alleged publication date of September 1, 1990.

1 Well, this date is inconsistent with the date  
2 reflected upon the AES preprint, which gives us not a specific  
3 date of when it may have allegedly been presented, but a date  
4 range.

5 And the point I would draw from this is two, the  
6 first being that there is inconsistencies here that give us  
7 feelings not to have full faith on what the preprints may be.

8 And the second is, if, as you see here with the  
9 Hancock reference having an alleged publication date of  
10 September 1, 1990 -- and all of this information, by the way,  
11 could have been easily extracted from the face of the  
12 preprint -- you will also see that the Gordon reference, when  
13 Ms. King gave us the website screen shot of that, shows an  
14 alleged publication date of November 1, 1990, also  
15 inconsistent with the alleged November 1994 date.

16 If we go back and look here it is, I believe -- yeah,  
17 November 10 through 13, some date range there. It  
18 appears -- and if you look at Gittleman you will see the same  
19 thing from Ms. King's declaration. We see an alleged  
20 publication date by the AES on the very first day of the month  
21 when the AES conference was held.

22 JUDGE QUINN: Isn't that typical of these  
23 publications that, because it is a multi-day conference, that  
24 the website or the place or repository for the conference  
25 papers will have at least the first day of the month or the last

1 day of the month, depending on the convention for that  
2 conference?

3 MR. CRAIN: I don't know what may be typical for  
4 events or conferences. This is an alleged date of when the  
5 paper was actually published.

6 I think there is at least question on whether or not  
7 these dates are accurate because they do not agree with the  
8 presentation dates, and keeping in mind we are looking for a  
9 date of publication here.

10 JUDGE PERRY: But still, counsel, this one is a  
11 full seven years before the patent priority date.

12 MR. CRAIN: Correct.

13 JUDGE PERRY: Seven years.

14 MR. CRAIN: That is correct.

15 JUDGE PERRY: We can quibble about a week or  
16 two or a month, but is there evidence to suggest that these  
17 papers were not made available to the convention seven years  
18 before the patent priority date at issue?

19 MR. CRAIN: There is no evidence to suggest that  
20 they were or were not other than what the documents  
21 themselves say. And for that reason, Judge Perry, it is Patent  
22 Owner's position that Petitioner has not met the burden to  
23 establish this and has not presented a preponderance of the  
24 evidence with respect to this issue.



1 JUDGE PERRY: Do you think that, given what  
2 appears on the cover page of Hancock and Gordon, that the  
3 Patent Owner had no duty to provide any evidence whatsoever  
4 countervailing what appears to be on the face of the  
5 documents themselves?

6 MR. CRAIN: I'm not sure I understand your  
7 question.

8 JUDGE PERRY: Do you think that the Patent  
9 Owner had no duty at all to come forward with evidence to  
10 oppose what appears to be on the cover page of Gordon and  
11 Hancock?

12 MR. CRAIN: Well, as I would understand it, if a  
13 prima facie case has been made then, perhaps, there is a  
14 burden to rebut. The response I would have to that is that we  
15 don't believe that the information that was provided  
16 establishes that prima facie case to rebut.

17 We have pointed to the documents themselves and  
18 that show that there are at least questions raised by AES  
19 itself -- and may I direct your attention, to respond to your  
20 question, Judge Perry, I'm on slide 7 -- so if I understood your  
21 question correctly, once Petitioner presented Exhibit 1002,  
22 did Patent Owner have a responsibility to come back and say  
23 no?

24 The reason we would say that the Patent Owner did  
25 not was because they had not established a prima facie case,

1 and as we see in the statement that's highlighted there, the  
2 final sentence, the AES itself, because these are preprints and  
3 not journal articles, they tell us they take no responsibility for  
4 the contents. And that has to include the entire document,  
5 unless it tells us what it does and does not include.

6 JUDGE MOORE: Right, but doesn't the paragraph  
7 after that say that an additional preprint may be obtained by  
8 sending a request and remittance to the Audio Engineering  
9 Society?

10 So whether or not this document as it exists was  
11 presented, isn't there further evidence on the face of the  
12 document that the document itself was available upon request?

13 Is it your position that that would not be enough to  
14 make this a printed publication?

15 MR. CRAIN: Thank you for reminding me of that.  
16 Mr. Kinsel had mentioned that. In response to your question,  
17 Patent Owner would respectfully say that it would not,  
18 because it doesn't tell us when this offer were made available,  
19 when these preprints were made available.

20 We don't know when the AES created this  
21 document that is a preprint and made it such that people  
22 could, in fact, take up that offer of the AES. So there is no  
23 understanding of when that would have occurred.

1 JUDGE PERRY: If the word "preprint" did not  
2 appear on the cover page of these documents, would we be  
3 having this same discussion?

4 MR. CRAIN: I think you probably would, and I'm  
5 trying to be responsive to your question. If it had  
6 information, much more like you might find in a periodical  
7 that has volumes and editions and what have you, that might  
8 give us -- take us a different road, down a different way.

9 But whether or not they call it a preprint, I don't  
10 know that that necessarily gives us, you know, takes us down  
11 this path versus not, because we don't have, on the totality of  
12 it, the information that we would expect to have that would  
13 make this document a self-authenticating document, keeping  
14 in mind that it is being presented to this Board for really two  
15 purposes: That it is a preprint, so if you take that away that  
16 would be one thing.

17 But the other part of it is that it is being presented  
18 as something that was actually presented on these dates that  
19 Petitioner represents that it was.

20 So I don't think, in answer to your question, that  
21 would resolve the inquiry because it still would not tell us  
22 whether or not this document was actually presented to  
23 anyone. And going back to the MIT v Fortia case, did anyone  
24 receive it? Did anyone actually attend the event? Did the

1 event go down? So I would respectfully submit the answer to  
2 your inquiry is no.

3 I actually think I'm to a point where I could  
4 probably conclude, but I would want to leave the Board with  
5 two thoughts.

6 JUDGE QUINN: I have one question before you  
7 conclude.

8 I heard from Petitioner's counsel that there is no  
9 contention that these references teach the limitations and that  
10 they render the claim unpatentable. Is that true?

11 MR. CRAIN: May I rephrase the question to make  
12 sure I understand? Is it, does Patent Owner agree that the  
13 references, the content of the references renders the claims at  
14 issue obvious? Is that the question?

15 JUDGE QUINN: Yes, sir.

16 MR. CRAIN: Okay. Patent Owner obviously has  
17 not addressed any substantive issues with respect to the  
18 documents because Patent Owner's position is that you don't  
19 get there.

20 The first issue is -- are the documents printed  
21 publications? And because our argument, and we are making  
22 the argument that they are not, we have not addressed that  
23 issue because we don't believe that it is necessary. We did  
24 not present an expert, any substantive technical expert with  
25 this case.

1           So I understand the ramifications of the statements  
2           and the claims that the Petitioner has made, but Patent  
3           Owner's position on that is, because you do not pass the first  
4           step, you do not get to the second.

5           The final point I will leave the Board with is that  
6           Petitioner says that the document is what it purports to be.  
7           And Patent Owner strongly disagrees with that statement, that  
8           the Gordon reference and the Hancock reference constitute  
9           printed publications that were presented -- a printed  
10          publication or a preprint that was presented.

11          There is no evidence by Patent Owner -- by  
12          Petitioner that demonstrates to us that any of these references  
13          constitute events that were actually presented at any point in  
14          time. And it is our position that that is Petitioner's burden  
15          that was not met.

16          And for that reason we believe that the claims  
17          should be found patentable over these references and we  
18          believe that the Board can make that determination that Patent  
19          Owner -- I'm sorry, Petitioner has not met its burden with  
20          respect to establishing patentability -- I'm sorry, that they are  
21          printed publications without ever getting to the second issue.

22          Thank you.

23          JUDGE PERRY: Thank you, counsel. Petitioner,  
24          you have five minutes for your rebuttal.

1                   MR. KINSEL: Thank you very much. This is  
2 Grant Kinsel again for Petitioner. I want to make just a  
3 couple of very quick points.

4                   First I would like to talk about burden of proof.  
5 That was a topic I think, Judge Quinn, you raised and I think,  
6 Judge Perry, you raised it as well. How does burden of proof  
7 work here? Burden of proof works here by Petitioner putting  
8 into evidence that these documents are what they purport to  
9 be, that they are authentic documents presented at these  
10 conventions and made available thereafter.

11                  We presented evidence through Jessica King,  
12 through Mr. Cordell and through what the documents  
13 themselves say. So we discharged our initial burden of proof.

14                  It was then incumbent on the Patent Owner to offer  
15 some evidence in rebutting that. That's their job. The burden  
16 of persuasion shifts. There is no evidence on the other side.

17                  And so what the Board is left with is --

18                  JUDGE QUINN: What is your authority for this  
19 burden shifting, because our rules are very clear that  
20 Petitioner has the burden of proof by a preponderance of the  
21 evidence?

22                  MR. KINSEL: There is no question that we have  
23 the overall burden of proof by a preponderance of the  
24 evidence.

1           The question is once we have put in some  
2 evidence, once we have put in our initial evidence, is there  
3 any then burden for the other side to respond? And the  
4 answer there is, yes, of course they have to respond. They  
5 can't just say no -- well, I guess they can but they do so at  
6 their own risk.

7           JUDGE QUINN: What is your authority for this?  
8 Do you have any authority for this?

9           MR. KINSEL: The way the burden of proof works  
10 in every case. It is the same way the burden of proof would  
11 work in a jury trial or in a motion or in any other place. You  
12 submit your evidence. The other side then responds to that  
13 evidence.

14           There is no evidence on the other side. And so  
15 what I'm getting to, Judge, is that we've clearly met our  
16 burden of preponderance of the evidence because we put our  
17 evidence on the scale. And there is no evidence on the other  
18 side.

19           So all we need to show is that it is more likely  
20 than not that these documents are what they purport to be, that  
21 they are authentic articles presented at these conventions.  
22 That's how it works.

23           JUDGE QUINN: With all due respect, I mean,  
24 there is a controversy here as to whether what you supplied  
25 actually meets the preponderance of the evidence standard or

1 that you actually met any prima facie case that these were  
2 printed publications. It is our job to weigh the evidence and  
3 we have to see a preponderance of the evidence for you to  
4 succeed.

5 So the question here is: Is your evidence alone,  
6 regardless of whether Patent Owner came with countervailing  
7 evidence, is your evidence sufficient in light of the  
8 deficiencies that have been pointed out to prove printed  
9 publication by a preponderance of the evidence?

10 MR. KINSEL: Well, I submit it is. And I would  
11 want to make one slight note. I think this goes to Judge  
12 Moore's point earlier.

13 It is not only the question of whether these articles  
14 were presented at these conferences. As each of the  
15 documents show, they were available to anyone who sent in a  
16 check, anyone who sent in a check. And that is the very  
17 definition of public availability.

18 So even if the Panel doesn't agree that we've  
19 carried our burden of showing that these documents were  
20 presented at the conference, that doesn't mean that the  
21 Hancock and Gordon papers are not prior art. The documents  
22 say on their face that they are available to anyone who wants  
23 them.



1                   And that's the definition of publicly available.  
2           That's the touchstone for whether these documents are a  
3           printed publication.

4                   The AES website, in addition -- I want to just  
5           make two other quick points -- Mr. Cordell's testimony is  
6           relevant because it shows that what he experienced is likely to  
7           have happened in other cases.

8                   We're not saying that he is an expert in the AES'  
9           procedures. It is standard circumstantial evidence, if I put in  
10          evidence about what, you know, what a clerk at a store does  
11          three days of the week, that's evidence to suggest what he  
12          does those other days of the week.

13                  And that's the point of the Cordell deposition and  
14          testimony, that it tends to show what the AES tends to do,  
15          making it more likely than not that these documents were  
16          actually presented.

17                  So unless the Board has any other questions, I am  
18          done.

19                  JUDGE QUINN: Well, I think the difference  
20          between that hypothetical is that the store clerk actually  
21          works for the store, and in this situation Mr. Cordell doesn't  
22          have any affiliations with AES.

23                  So it is going a little bit farther than that.  
24          Wouldn't you agree?

1                   MR. KINSEL: No, not at all, actually, Judge  
2                   Quinn. Respectfully I disagree.

3                   Whether he has an affiliation or not is beside the  
4                   point. The question is what experience has he had? When he  
5                   showed up at these things, were these articles presented? And  
6                   in each case he says they were. He has attended something  
7                   like 30 to 40 percent of the conferences. He says in all of  
8                   those the conference papers were presented.

9                   Now, that's certainly relevant circumstantial  
10                  evidence for what happens at other conferences that he was  
11                  not attending. Whether he worked for them or not, working  
12                  for them I think is irrelevant.

13                  The question is what does the experience look  
14                  like? And it is uniform for all of his experiences. And so one  
15                  can infer from those uniform experiences that they happened  
16                  in other cases, too.

17                  JUDGE QUINN: Do you have a schedule of the  
18                  conference such that we can verify that the paper, which they  
19                  have session numbers on them, that they actually were part of  
20                  the scheduled presentation?

21                  MR. KINSEL: The session numbers, if you look at  
22                  the AES website that's found in print, that's found in Ms.  
23                  King's declaration -- which I can put up -- show that the  
24                  session numbers disclosed in the AES website match the  
25                  session numbers shown on the papers.

1           So AES thinks, at least with respect to the website  
2     that we have attached to Ms. King's declaration, AES thinks  
3     that these conferences happened. AES thinks these sessions  
4     happened. They have got the same conference number.

5           Now, admittedly, I suppose the AES could have  
6     copied the session number from the face page of the  
7     document, but there is no evidence suggesting that that is  
8     what they did.

9           But certainly the AES -- and there is evidence in  
10    the record in the form of Ms. King's declaration -- suggest  
11    that the sessions that these documents relate to occurred.

12          So unless the Board has any further questions, I  
13    will sit down.

14          JUDGE PERRY: Okay. That concludes our  
15    proceedings on the 127 case. And we can now begin argument  
16    on the 129 case.

17          Petitioner, whenever you are ready.

18          MR. KINSEL: Thank you, Judge.

19          Thank you. Again, this is Grant Kinsel for  
20    Petitioner.

21          JUDGE PERRY: Do you wish to reserve any time?

22          MR. KINSEL: I will reserve five minutes again, if  
23    I may.

24          JUDGE PERRY: Okay.

25          MR. KINSEL: Thank you, Judge.

1           The '542 patent, that's the patent that's at issue in  
2 this case, concerns the existing -- the inclusion of a  
3 preexisting digital signal processor in a preexisting power  
4 amplifier.

5           The '542 patent doesn't purport to describe any  
6 new or inventive power amplifier. Indeed, the '542 patent's  
7 discussion of power amplifiers is drawn directly from the  
8 prior art.

9           There is nothing new about the power amplifier  
10 disclosure in the '542, nor does the '542 patent disclose  
11 anything new or different about DSP's. These are preexisting  
12 DSP's. There is no disclosure of any new DSP's.

13           So what are the supposed inventions on the two  
14 claims that are at issue here in this proceeding, and the Board  
15 instituted only with respect to claims 5 and 13, so obviously I  
16 will restrict my discussion to claims 5 and 13.

17           Well, I will put these up now. The supposed  
18 innovation with respect to claims 5 and 13 --

19           JUDGE QUINN: Counsel, it is very difficult to  
20 hear you when you step away from the podium. I'm sorry. I'd  
21 like to hear everything you say.

22           MR. KINSEL: I beg your pardon. I tend to  
23 wander. I need a leash of some sort.

24           Claims 5 and 13 are the two claims that  
25 are -- there is a pop-up, there you go, a pop-up in front of

1 Judge Quinn's face there -- so claims 5 and 13 are the two  
2 claims that were instituted. And so what is the supposed  
3 innovation here?

4 What claim 5 and 13 does, is claim 5 and 13 add to  
5 the requirement of a power amplifier and a digital signal  
6 processor, a current detector and voltage detector. And that  
7 the digital signal processor then uses the detected current and  
8 voltage to calculate impedance of the load. Now, that's claim  
9 5.

10 And claim 13 talks about how the digital signal  
11 processor calculates the amount of power supplied to the load.  
12 So that's the supposed innovation here really with respect to  
13 claims 5 and 13, a voltage and current detector, and using  
14 detected current and voltage to calculate in one case  
15 impedance and in another case power.

16 Now, before I move away from those two points,  
17 there is no dispute in the record that calculating impedance  
18 and calculating power are trivial. Mr. Cordell agrees. Dr.  
19 Ellis agrees. So everybody is on the same page that this last  
20 requirement of calculating power and calculating impedance is  
21 really just a trivial mathematical multiplication.

22 Mr. Cordell calls it straightforward. You can find  
23 that at Mr. Cordell's declaration, paragraph 23, where he says  
24 that, Cordell paragraph 23.

1           So what are we left with? We are left with a prior  
2 art amplifier, a prior art digital signal processor, I'm going to  
3 show you that the current and voltage detectors are prior art,  
4 and trivial impedance and power calculations. That is a  
5 recipe for an obvious patent.

6           So with that let me turn now to the key references.  
7 I will talk about what they teach and show you why these  
8 claims are obvious.

9           There were four key pieces of prior art that the  
10 Board instituted on: Porambo, Black, Tsurushima and  
11 Gittleman. Porambo and Black collectively demonstrate that  
12 it was well known to use a DSP with a power amplifier to  
13 monitor impedance and power.

14           Tsurushima and Gittleman show that it was well  
15 known in the art to determine impedance by detecting current  
16 and voltage.

17           JUDGE MOORE: Back to the issue of Gittleman,  
18 could you just speak briefly on whether or not it is your  
19 position, if Gittleman was found not to be prior art, whether  
20 the combination of Porambo, Black and Tsurushima would  
21 render claims 5 and 13 unpatentable?

22           MR. KINSEL: Gittleman is really supplemental to  
23 Tsurushima. I don't think that there is any real disclosure in  
24 Gittleman that is not also in Tsurushima.

1                   So even if the Board determined that Gittleman  
2                   was not prior art or was otherwise not admissible, I don't  
3                   think it has any impact on the petition because Tsurushima is  
4                   still a ground that can be combined with Porambo and Black  
5                   and it was instituted on that ground. So Gittleman is really  
6                   additive. It doesn't really add a whole lot. It doesn't add any  
7                   specific disclosure that is not already in Tsurushima. So I  
8                   don't think it has any effect on the outcome of the petition.

9                   Let me talk a little bit about Porambo. This is  
10                  figure 1 from Porambo. And what Porambo shows is a couple  
11                  things. Porambo shows the use of a DSP -- you can see it  
12                  right here, number 28 -- in the signal line of an amplifier used  
13                  for manipulating how the signal sounds. But, more  
14                  importantly, Porambo shows the use of a DSP to monitor the  
15                  impedance of the speakers.

16                  And so let me describe how it does that. And you  
17                  can see this really better in figure 2 -- figure 3, I beg your  
18                  pardon. It is figure 3 from Porambo. Let me describe what  
19                  we've got here.

20                  What happens in Porambo is an input signal is sent  
21                  via what they call clipping loop 74 to the audio amplifier.  
22                  And the signal is increased in intensity until the amplifier  
23                  begins to clip. And then that signal is drawn back until the  
24                  clipping stops.

1           At that point a signal is sent via 72, loop 72 to the  
2     DSP, and the DSP's job is to figure out where that clipping  
3     range occurred. If that clipping range occurred in a preset  
4     range of normal impedance, then the DSP figures out that the  
5     car speakers that this thing was connected to are properly  
6     connected.

7           If the DSP figures out that the clipping range is  
8     below the normal range, that it clipped sooner than it should  
9     have, then the DSP determines that there is a short-circuit.  
10    And if it happens at a higher range, the DSP figures out that  
11    there is an open circuit in the speakers.

12           I think Porambo does a nice job of sort of  
13    summarizing this. And you can see this at column 5, lines 24  
14    through 30 of Porambo, where he says, lines 24 through 30:  
15    If the clipping threshold detected occurs at a level of signal  
16    70, which is within a predetermined range corresponding to an  
17    acceptable or normal impedance, range 90 as shown on figure  
18    4, it will be understood that the conductor 76 and 78 form a  
19    complete circuit to the amplifier and speaker terminals on  
20    speaker 80.

21           So what is really going on here is that  
22    Porambo -- and this is the key teaching I think from  
23    Porambo -- Porambo is telling you that you can use a DSP to  
24    monitor the impedance of a speaker system. You don't have to  
25    just use the DSP to manipulate the audio signals themselves.



1 You can use it to do other things. And that's sort of the key  
2 teaching I think of Porambo.

3 And so now we're going to add to that. We're  
4 going to add Black. And what does Black show? This is  
5 figure 2 from Black. And really what Black shows in a  
6 nutshell is that one can use a DSP to monitor power of an  
7 amplifier. Now, this is an amplifier circuit for an RF  
8 amplifier. It is not an audio amplifier.

9 And I know that is subject to some contention and  
10 we can talk about that if the Panel wants to. But the fact of  
11 the matter is Black discloses clearly the use of a DSP to  
12 control power into the amplifier.

13 So that's what you see here in this loop down here.  
14 The 225 loop is a loop that causes -- that the DSP uses to  
15 reduce power to the amplifier when the amplifier is showing  
16 that it is in saturation, that it is being saturated.

17 JUDGE MOORE: But the DSP doesn't directly  
18 monitor voltage and current?

19 MR. KINSEL: That's correct. That's correct.

20 JUDGE MOORE: In either of Porambo or Black?

21 MR. KINSEL: That's correct, yes.

22 JUDGE MOORE: Another question along the lines  
23 of the previous question.

24 Patent Owner raised an issue that possibly for  
25 claim 5 Petitioner did not put in evidence, specific evidence

1 pointing to portions of Black as part of its combination to  
2 meet the limitations of claim 5.

3 So the question I have is, once again, if the  
4 combination was Porambo and we will say Tsurushima and  
5 Gittleman, without Black, would that based on your evidence  
6 render the claim, the limitations of claim, I think it is  
7 specifically 5 in this case, unpatentable?

8 MR. KINSEL: It would. It would. Because Dr.  
9 Ellis has testified in his declaration that it would be obvious  
10 for a person of skill in the art using the current and voltage  
11 detectors of Tsurushima, knowing about current and voltage  
12 detection based on Tsurushima, to use those detectors with a  
13 DSP.

14 And what Black adds to that is simply the notion  
15 that you can monitor power. But power and impedance are  
16 intimately related. And both Mr. Cordell and Dr. Ellis have  
17 testified that a person of ordinary skill in the art knows that  
18 impedance is just the opposite of power, that one is a  
19 multiplication and the other is a division, and there is nothing  
20 inventive about calculating power versus calculating  
21 impedance. If you can calculate impedance, you can calculate  
22 power, and vice versa.

23 So without Black the combination still renders this  
24 claim obvious, claim 5. To put it slightly differently, I don't  
25 think that Black really adds all that much to either

1 Porambo -- it certainly doesn't add anything to Tsurushima or  
2 Gittleman. It doesn't really add very much.

3 JUDGE MOORE: Thank you.

4 MR. KINSEL: So that's Black in a nutshell.  
5 Unless the Panel has specific questions about how it operates,  
6 which I'm happy to address, I will move on to Tsurushima and  
7 Gittleman.

8 Tsurushima says things about as clearly, certainly  
9 clearer than I can, about what it is all about. So if you look at  
10 the abstract from Tsurushima -- and it is unnumbered but it is  
11 toward the bottom there -- Tsurushima says or describes what  
12 he has invented: Further, the detecting circuit is preferably of  
13 the load impedance detecting type, for example, responsive to  
14 both the load current and the load voltage so as to avoid  
15 misoperation of the protective circuit.

16 That really, in a nutshell, that sums up what  
17 Tsurushima is all about. Tsurushima is about monitoring  
18 impedance by using detected current and voltage. That's what  
19 Tsurushima is all about.

20 So if we look at figure 6 from Tsurushima,  
21 effectively the way it works -- and, Judge Quinn, I am going  
22 to lean a little bit over here, and I will try to keep my voice  
23 up so hopefully you can hear me -- what happens in  
24 Tsurushima is that current is detected at these four resistors,  
25 R9A, R10A, R9A -- 9B, and 10B. That's where the current is

1 detected. And the voltage detected along that line is  
2 designated T3.

3 And when Tsurushima, when this circuit detects  
4 that the impedance has dropped below a preset value -- in the  
5 case of Tsurushima it is one ohm -- when it drops below that  
6 one ohm, then this circuit back here shunts the power to the  
7 transistors to protect the transistors.

8 Now, that's effectively how it works. It is pretty  
9 straightforward. It does use a threshold, effectively. If the  
10 impedance drops below that threshold, that's when the  
11 shunting circuit comes on-line and does its thing. And that's  
12 what Tsurushima does.

13 And then finally -- and I should add and let me  
14 just put this in the record because I think it says it certainly  
15 better, again, than I can say it. So I will just read it. This is  
16 what Tsurushima describes as his preferred embodiment.

17 And that is at column 2 of Tsurushima, lines 1  
18 through 9: In a preferred embodiment of the invention, the  
19 detecting circuit detects the current through and a voltage  
20 across the load, that is, the load impedance, and the switching  
21 circuit is made operative as aforesaid when the load  
22 impedance declines below a predetermined value, for example,  
23 in response to a short circuit in the load.

24 So there are your current and voltage detectors.  
25 These are your current and voltage detectors of the claim.

1           Gittleman, as I mentioned earlier, really doesn't  
2     have a lot to add to that. But I will put up Gittleman, figure  
3     1, just so we can talk about it quickly. Gittleman adds to that  
4     or says, effectively, the same thing.

5           It has got current and voltage sensors right here  
6     that are sensing current and voltage being delivered to the  
7     load here, and when those detected current and voltage  
8     figures get -- current and voltage get out of whack, it will  
9     send a signal to the dissipation limiting circuit that then  
10    causes the amplifier power to be reduced so that the amplifier  
11    is out of saturation.

12           JUDGE MOORE: Okay. So in Tsurushima the  
13    current is coming off those transistors, and I'm just comparing  
14    it to Gittleman, you can leave Gittleman back up, but here in  
15    Gittleman you see that the line is directly between the  
16    amplifier and the load.

17           Is there any significance to that difference?

18           MR. KINSEL: Patent Owner has suggested that  
19    Tsurushima isn't protecting current to the load because  
20    Tsurushima's resistors are here, the front of the load, and so  
21    perhaps from that perspective Gittleman deals with that.  
22    Gittleman is here, closer to the load.

23           But, you know, frankly, I think that's all much ado  
24    about nothing. And I'm going to steal my colleague's analogy.  
25    If I have a patent on counting the number of cars on a

1 freeway, I can count them as they enter the on ramp, or I can  
2 count them as they are driving down the road.

3 And that's effectively what Tsurushima is doing.  
4 It is measuring the current and voltage that is going to be  
5 delivered to the load. It is doing it somewhat upstream of the  
6 load, but it is still measuring current and voltage to the load,  
7 number 1, and, number 2, that's what Tsurushima says. Right?  
8 He says I am detecting current and voltage through the load.

9 And to take a little bit of a step back, this is an  
10 obviousness combination. It is not an anticipation  
11 combination. So enablement is really beside the point. The  
12 question is not whether somebody would take this specific  
13 Tsurushima circuit and slap it in with a DSP.

14 The question is would somebody of skill in the art  
15 take the teaching of Tsurushima, which is that you can  
16 detect -- monitor impedance by detecting current and voltage,  
17 and then apply that to a digital system.

18 That's the question, not whether this particular  
19 circuit would be the one that you would use because  
20 remember -- and I think this is a real important  
21 point -- remember the claims are generic. The claims just  
22 claim a generic voltage and current detector. They don't tell  
23 you how you are supposed to detect current. They don't tell  
24 you how you are supposed to detect voltage. It is generic.

1                   And so what we have shown is at least two pieces  
2 of prior art where it was well known to detect current and  
3 voltage. And so these are current and voltage detectors.  
4 Now, maybe they are not ideal. Maybe they are. Who knows?  
5 But the fact of the matter is that the key teaching is there.

6                   JUDGE MOORE: You headed towards, and  
7 obviously to Patent Owner's argument, what is the  
8 significance that we have analog references and we are talking  
9 about combining them into a digital processor?

10                  MR. KINSEL: A really good question. It is a  
11 matter of trivial engineering to feed an analog signal to a  
12 digital DSP. Dr. Ellis has said that. And, in fact, if you look  
13 at Porambo, Porambo discloses exactly how one would do  
14 that.

15                  So Porambo, in figure 1, shows you exactly what  
16 you want to do. If you want to interface an analog signal with  
17 a digital signal processor, what do you do? You put in an  
18 analog-to-digital converter. That's shown right here in figure  
19 1.

20                  But Porambo discloses exactly how you do it.  
21 And, you know, clearly interfacing an analog-to-digital signal,  
22 analog-to-digital converter with a DSP, is not inventive.  
23 There is nothing in the specification that would suggest to you  
24 that Patent Owner invented converting analog signals to  
25 digital signals. These are standard off-the-shelf parts.

1           In fact, Porambo identifies two or three specific  
2 analog-to-digital converters that one can use to interface with  
3 the digital signal processor. So making the leap from the  
4 analog realm of Tsurushima to the digital signal processor in  
5 the claims is certainly not an inventive leap. It is certainly  
6 well within the realm of someone of skill in the art.

7           JUDGE PERRY: Counsel, you have got three  
8 minutes.

9           MR. KINSEL: Thank you. Then I will wrap up  
10 and save the rest of my time for rebuttal. Thank you.

11          JUDGE PERRY: Thank you. Patent Owner,  
12 whenever you are ready.

13          MR. CRAIN: Thank you, Judge Perry. I am going  
14 to reference the demonstratives that Patent Owner has served  
15 and provided.

16          Judge Quinn, I trust that you have an electronic  
17 copy as well.

18          JUDGE QUINN: I do.

19          MR. CRAIN: I would like to start out with slide  
20 2. I would like to talk for a moment briefly about the '542  
21 patent.

22          The field of the invention of the '542 patent tells  
23 us, in the background of the patent, it tells us that it is about a  
24 digital signal processor placed in the signal path, the audio  
25 signal path, of an audio amplifier.



1           So that sets the boundaries of what we are dealing  
2     with. And that will become relevant as we talk about Black.  
3     But what I would like to do, I think one of the key differences  
4     between Patent Owner and Petitioner in this particular  
5     proceeding pertains to what is and what is not the level of  
6     ordinary skill in the art and whether the individuals relied  
7     upon by each respective party constitutes the testimony of a  
8     person of ordinary skill.

9           JUDGE MOORE: Well, first of all, are you saying  
10    that an expert in order to testify must be exactly a person of  
11    ordinary skill in the art? May they be a person of slightly  
12    more or slightly less skill? I just want you to be specific in  
13    what you are saying here.

14          MR. CRAIN: I believe that the testimony that the  
15    experts provided here should tell us what a person of ordinary  
16    skill in the art would know and would be.

17          And if the individual does not himself or herself  
18    constitute a person of ordinary skill in the art with respect to  
19    the subject patent, I certainly think that can affect the weight  
20    that any evidence to be given, by an individual that does not  
21    him or herself constitute a person of ordinary skill in the art,  
22    to tell us what one of ordinary skill in the art would be.

23          Typically, in my experience, you know, the experts  
24    would at least be one. So they would generally be higher. The  
25    experts would be of extraordinary skill in the art.

1           But there is at least, in these cases we need to  
2 understand what is the level of skill in the art that one would  
3 have? And if an individual does not have it, how is that  
4 individual able to tell us either what something means to a  
5 person of ordinary skill in the art or what someone else would  
6 know if it is merely being conjecture.

7           With respect to the level of ordinary skill in the  
8 art in this case, I think both of the proffered experts generally  
9 agree. Mr. Cordell has told us that the level of ordinary skill  
10 in the art would be someone that has either a Master's degree,  
11 and at least one year of design and testing experience with  
12 audio power amplifiers, or a Bachelor's degree and three  
13 years.

14           If you look to slide 3, we see that Dr. Ellis  
15 generally is approximately the same. He says in his opinion a  
16 person of ordinary skill in the art would have a Master's  
17 degree in electrical or electronics engineering, Master's  
18 coursework, and then he would also have practical experience,  
19 he or she would have practical experience designing and  
20 testing electronic amplifiers.

21           Now, Judge Moore, to circle back to your  
22 question, because I think it is an important point in this IPR,  
23 when Dr. Ellis was asked on slide 4, which is from Paper 21,  
24 about whether or not he himself is a person of ordinary skill  
25 in the art, he acknowledged that, in fact, he is not such a

1 person with respect to the '542 patent, and telling us that he  
2 does not fit the very description that he indicated a person of  
3 ordinary skill in the art would have in order to understand and  
4 tell us what some of these issues mean.

5 When we further probed into this, with talking  
6 about amplifier protection circuits, much like we see with  
7 Tsurushima and Gittleman, the V-I limiting circuits, he  
8 explained to us, again, that he does not consider himself  
9 competent to analyze or understand amplifier design.

10 He considers himself "competent to analyze and  
11 understand amplifier design, but I would not represent myself  
12 as an expert." And the part that I didn't quote there or didn't  
13 highlight there is on the preceding part.

14 The reason he tells us this is essentially that as he  
15 serves as a professor at Columbia University in the Electrical  
16 Engineering Department, he considers it his responsibility to  
17 have familiarity with all of the subject matter taught by  
18 Columbia University.

19 But I'm not sure that equates to giving him the  
20 requisite knowledge to be a person of ordinary skill in the art  
21 with respect to the technology under the field of an invention  
22 of the '542 patent, as Patent Owner has asserted.

23 Moving to slide 6, we further see this take  
24 form in -- I don't want to belabor the point but I think it's a  
25 point worth making. Dr. Ellis actually serves as the expert for

1 Petitioner, not only for the '542 patent, the 129 IPR, but also  
2 with respect to the '544 patent, that we'll talk about shortly,  
3 and that's the 131 IPR, I believe.

4 In his cross-examination he shared with us that the  
5 total time that he spent preparing his declarations for those  
6 two IPR's, which he indicated was split equally, was only 20  
7 hours totally. So that would mean 10 hours obviously for this  
8 IPR.

9 Now, if you look at what is involved in that, that  
10 was 10 hours total to review the '542 patent and everything  
11 that it teaches; to review the prosecution history, as he told us  
12 that he did in his declaration, which was around 113 pages, I  
13 believe; the nine separate references that are asserted against  
14 the '542 patent, and that's Exhibits 1005 through 1012. That's  
15 approximately another 200 pages. And then to write his  
16 opinion, which totaled 60 separately-enumerated paragraphs.  
17 All in 10 hours.

18 Now, I'm not suggesting that he didn't do these  
19 things, but that further supports the notion that his testimony  
20 should be given little, if any, weight because he doesn't  
21 himself rise to the level of what one of ordinary skill in the  
22 art of the '542 patent would understand. And the report that  
23 he had really has very little of that time that he spent going  
24 into it.

1           By comparison, Mr. Cordell, there is no challenge  
2 to Mr. Cordell, Patent Owner's expert, on whether or not he is  
3 one of ordinary skill in the art. There is no challenge as to  
4 whether or not he has designed and tested amplifiers. And, in  
5 fact, it is referenced in Patent Owner's paper, I believe Paper  
6 21, he has actually written a book on designing audio  
7 amplifiers. I have a copy here. I won't show it. But, you  
8 know, he has actually written a book.

9           So on the one hand you have an expert that doesn't  
10 rise to the level of ordinary skill. On the other you have one  
11 that wrote the book. The conclusion there is obviously that  
12 Mr. Cordell really should be given great weight with respect  
13 to his opinions on the '542 patent.

14           I would like to talk about the references  
15 Mr. Kinsel today walked through and talk to some of those  
16 and some of the issues that came up there. There is, as, Judge  
17 Moore, you pointed out, there is a little bit of unclarity with  
18 respect to the four references -- I'm on slide 7 for everyone's  
19 benefit -- Porambo, Black, Gittleman and Tsurushima.

20           As I mentioned earlier, Patent Owner's position  
21 with respect to Gittleman, which is an AES preprint, is the  
22 same as we talked about with respect to the Gordon and  
23 Hancock references. But I will address it in this instance  
24 since we did address some other references.

1               So we have these four documents. The first one I  
2 would like to talk about -- or before I even get into them,  
3 turning to slide 8, I would like to focus the Board's attention  
4 to the two claims that are at issue, claims 5 and 13.

5               Specifically if you would direct your attention,  
6 please, to the highlighted portion in claims 5 and 13, and you  
7 will find that these are the same element we find in both  
8 claims. And Mr. Kinsel, I think, talked about the detected  
9 current, detected voltage. And it tells us here that the digital  
10 signal processor has an input for receiving the detected  
11 current and detected voltage.

12              The Petitioner's argument against each of these  
13 identical claim elements is actually different. Now, on slide  
14 9, if you would look at the top box you will see that the  
15 argument for this very claim element is a combination of the  
16 Porambo reference and the Tsurushima reference.

17              But on claim 13 the argument against this element  
18 of the digital signal processor and the input for the detected  
19 current and voltage is Porambo and the Black reference.

20              So we see this, I'm not exactly sure of -- to fully  
21 understand the argument that Patent Owner -- or Petitioner is  
22 making, but we see an inconsistency here, nonetheless we will  
23 address each one of these references because we believe that  
24 they do not render obvious this claim element.

1           Moving to Porambo on slide 10, we have  
2 highlighted a portion of the DSP shown in figure 3 of the  
3 Porambo patent from Exhibit 1005.

4           JUDGE MOORE: Mr. Crain, just quickly, let me  
5 be sure of where you are going. Are you arguing that as to  
6 claim 13 you wouldn't have had, and that claim element, that  
7 you wouldn't have had notice of the argument that Petitioner  
8 was making in regard to Porambo and Tsurushima and vice  
9 versa?

10           In other words, if the Board were to look to the  
11 arguments made in relation to claim 5 and a finding in  
12 relation to claim 13, would it be your position that you didn't  
13 have notice of those arguments?

14           MR. CRAIN: Well, that's an interesting question.  
15 I'm not sure I thought about it in exactly that way. But when  
16 we look at the petition -- and this actually kind of goes back  
17 to a point you were making with respect to Black and I think  
18 with respect to claim 5.

19           We see no reference to Black in claim 5, how it is  
20 specifically applied to the elements of the claim. I perhaps  
21 maybe would have expected it to appear in this claim element  
22 for claim 5, but I don't see it.

23           So with respect to notice, I can only deal with  
24 what I understand to be the assertion against the elements. To  
25 the extent that it is not specifically asserted against a claim

1 element, I'm not sure if it is Petitioner's position that this is  
2 just duplicative. I mean, we substantively disagree with the  
3 content of Black, for example, and I want to go through that,  
4 but I think there is a telling inconsistency here of why we  
5 have two different combinations with respect to the exact  
6 same element.

7 And I do think that -- because with respect to  
8 claim 5 and its omission of Black with respect to any claim  
9 element -- that there is a question with regard to whether or  
10 not it is actually asserted.

11 Does that answer your question, Judge?

12 JUDGE MOORE: Right. The reason why I use the  
13 word notice is because if you were going to argue, for  
14 instance, that Black could not be used in association with  
15 claim 5, I'm assuming the argument would be we had no  
16 notice that they were making this argument and, therefore, we  
17 couldn't respond to it.

18 And it seems to me that you have responded, in  
19 relation to the exact same claim element, to all of the  
20 arguments that are on this page. So there is no issue of you  
21 being unable to respond to the arguments made by Petitioner.

22 MR. CRAIN: Yeah, and I see that point because, I  
23 mean, we had the exact same claim element in two different  
24 claims. So, you know, if I am going to respond to it in claim  
25 13, does that apply to claim 5?



1           I have to say that it does, to the extent that we do  
2 believe it is substantively not compelling to show that it  
3 renders obvious this element. But it is at the end of the day  
4 omitted from claim 5. And we weren't exactly sure how to  
5 deal with that. And we did notice in the institution decision  
6 that claim 5 does address Black.

7           So we have, you know, moved forward to engage  
8 the Black reference for claim 5 mostly because it was  
9 referenced in the institution decision as part of the  
10 combination.

11           With respect to Porambo, you did hear a  
12 description from Mr. Kinsel with regard to Porambo  
13 describing a system for motor vehicles that determine the  
14 connection status between the amplifier shown in green on  
15 slide 10 and the DSP -- and the speaker there. And I won't go  
16 through the inaudible tone thing. I think Mr. Kinsel did  
17 describe that.

18           I think the point that Patent Owner would like to  
19 make with respect to Porambo is that the connection path 74,  
20 and I believe that Mr. Kinsel referenced that, is merely a  
21 binary signal with respect to the presence or absence of  
22 clipping.

23           Now, when I go back to claim -- I'm going to slide  
24 back two slides to slide 8. It is clear that the detected current  
25 and detected voltage must be current and voltage values

1 because, as Mr. Kinsel pointed out, there is a calculation  
2 performed at the very end of that claim.

3 In claim 5 it is calculating impedance and in claim  
4 13 calculating power. So clearly we must be talking about  
5 data values. But in Porambo we have no data values that are  
6 communicated between the amplifier and the DSP, only an  
7 interrupt signal, and there is an interrupt pin on the DSP, as  
8 Porambo tells us.

9 So whether or not it is essentially clipping?  
10 Yes/no. It is a yes/no, signal. There is no data associated  
11 with that. And I don't think any expert, Mr. Cordell or the  
12 proffered expert by Petitioner, disagree on that.

13 Turning to slide 11. And it shows us there an  
14 excerpt of Paper 21 at line 35. It has actually a little snippet  
15 of the cross-examination of Dr. Ellis. And both he and  
16 Mr. Cordell agree that there is no detected current or voltage  
17 level communicated between the amplifier and the DSP but it  
18 is merely a binary signal.

19 JUDGE QUINN: Even if it is a binary signal, it  
20 has some indication of at least an expected threshold or a  
21 range within which the circuit is activating.

22 So it may not be direct but it would be an indirect  
23 representation of some value. Isn't that correct?

24 MR. CRAIN: It would be the absence or presence  
25 of a condition. But that would not enable the DSP to perform

1 any calculation of an associated impedance or power value  
2 based upon the presence or absence of that condition without  
3 the requisite data that is required to calculate the impedance  
4 or voltage. So it would tell you the condition and nothing  
5 more.

6 JUDGE QUINN: Well, but you don't disagree that  
7 one of skill in the art knows how to make the calculations  
8 needed. You are contending, though, that these circuits don't  
9 give you the data with which to make those calculations?

10 MR. CRAIN: That's essentially correct. Correct.  
11 Correct, Judge Quinn.

12 JUDGE MOORE: But we are dealing with an  
13 obviousness challenge here, right? So isn't it true that, for  
14 example, Tsurushima teaches sending those values, so the  
15 issue would be not whether Porambo by itself receives those  
16 values but whether one of ordinary skill in the art being aware  
17 of Tsurushima would combine those and then calculate that  
18 value?

19 MR. CRAIN: And by no means do I mean to  
20 suggest that Porambo stands on its own. You are correct, it  
21 has to be in combination with the other references. And that's  
22 a perfect segue into the next slide, 12, which is Tsurushima.

23 One of the statements that you made, Judge Moore,  
24 I'm not sure Patent Owner would agree with, is that there is an  
25 output of any detected values of current or voltage.

1                   And this goes back to which individual is the  
2 Board going to rely on? Is it going to rely on Dr. Ellis who  
3 tells us that, well, one of ordinary skill in the art would look  
4 at Tsurushima and say I could just pull some data values out  
5 of that, although he does not tell us there. In the petition  
6 there is no reference that you would go to any specific place  
7 in Tsurushima and do that.

8                   The argument, as I understand it, that was  
9 presented, that one of ordinary skill in the art would know  
10 how to do that. But to understand what Tsurushima is, it is a  
11 purely analog V-I limiter, current voltage limiting circuit. It  
12 is not, there is no hint or suggestion of a DSP. And I think  
13 that's important.

14                  It is merely a switch. When a condition is  
15 detected -- much like Porambo -- when a condition is detected  
16 the switch operates. It effectively shunts the amplifier  
17 directly to the load so that it protects the circuitry that we  
18 see.

19                  And for your benefit, Judges Moore and Perry, I'm  
20 pointing to the output stage 13. Judge Quinn, that is on slide  
21 12 you see the output stage 13. It is meant to protect the  
22 VFET's and the resistors there because what you have  
23 happening is, if the impedance of a load goes, for example,  
24 less than an ohm, your voltage is going to decrease also, but  
25 that means you are going to have a current spike.

1           There is no instance here where we are actually  
2     measuring the current, but we are going to know that there is  
3     a current spike, and that current spike would fry those  
4     resistors. It would damage those VFET's.

5           So what this circuit is meant to do is merely meant  
6     to close the switch that is found in Section 15, transistors Q3a  
7     and Q3b. When that switch closes it creates a direct shunt  
8     between the amplifier and the load.

9           And I still am trying to answer your question,  
10    Judge Moore. And with respect to that, again, which  
11    individual is the Board going to rely on, whether it is Dr.  
12    Ellis or Mr. Cordell with respect to what one of ordinary skill  
13    in the art would indicate with respect to this.

14          And he tells us that it is just a switch. And on  
15    slide 13, that a person of ordinary skill in the art would not  
16    break any of the connections of Tsurushima and reconnect  
17    them to a DSP because the V-I limiter of Tsurushima is  
18    merely pre-configured to detect a specific threshold.

19          There is no point that he identifies that you could  
20    break this thing, and nor does Dr. Ellis tell us where he would  
21    do that in the petition.

22          JUDGE MOORE: Right. But, of course, once  
23    again we are talking about obviousness, so we are not talking  
24    about physically combining the Tsurushima reference with the

1 Porambo reference. We are talking about what they teach and  
2 the understanding of what they teach. Isn't that correct?

3 MR. CRAIN: The understanding is that you have a  
4 V-I limiter. I think we saw from the summary of Tsurushima  
5 it talks about detected current. But when you really get into  
6 the subject matter of what Tsurushima is, it is, when there is a  
7 predetermined threshold of what is happening there, the  
8 switch operates, but we don't see any notion of where you  
9 could draw a detected current value to extract a current or  
10 voltage value from so that this, you know, could be operable.

11 And this is, you know, as far as persons of  
12 ordinary skill in the art, Mr. Cordell would tell us that one of  
13 ordinary skill in the art would not do that, would not look to  
14 Tsurushima for the purpose for which it is offered by  
15 Petitioner.

16 I think this is further confirmed in slide 14 where  
17 Mr. Cordell, Patent Owner's expert, reaffirms that Tsurushima  
18 is merely a switch. It is not calculating any load impedance.  
19 It makes clear this is a very common switch. In fact, he  
20 references Chapter 15 of his textbook where he has written  
21 about these greatly.

22 So I think the Board can justifiably rely on  
23 Mr. Cordell that one of ordinary skill in the art would not  
24 look to Tsurushima to try to extract any detected current or  
25 voltage values, because that's not how Tsurushima operates.

1           If I may, I would like to move on to Black. Black  
2 is a completely different situation in that Black describes an  
3 RF, radiofrequency, power amplifier used in radiotelephone  
4 communication systems for TDMA, cell phone communication  
5 systems.

6           And what is going on in the Black reference is that  
7 you have an amplifier that is oscillating or cycling at a very  
8 high frequency, extremely high frequency. And so, therefore,  
9 to do this you must have specialized circuitry to do this. This  
10 is a completely different application.

11           And, of course, to summarize the argument that  
12 Patent Owner has made, and Mr. Cordell, the expert for Patent  
13 Owner has confirmed, is that one of ordinary skill in the art  
14 would not look to Black and its RF Class C amplifier  
15 application for any type of combination for use in an audio  
16 amplifier instance.

17           Because what you basically have in Black, it is  
18 very similar to Porambo, it is merely a saturation loop. It  
19 looks to see is there a saturation condition? If there is a  
20 saturation condition, you know, the detector looks, the  
21 detector 211 -- I'm on slide 15, Judge Quinn -- detector 211  
22 gives us a -- there is a power, what is the output power.

23           That comes into a comparator where it is compared  
24 with a reference voltage. And if there is saturation, again, it  
25 is a flag. There is a flag up or a flag down. Saturation would

1 give us a flag up such that the DSP would take the output  
2 power and reduce it. It performs zero calculations on the  
3 power because it doesn't have the current and voltage data.

4           There is no data being communicated to the DSP.  
5 It is merely the presence or absence of saturation. And that's  
6 a theme that we see in these references. There is no detection  
7 of actual values of current and data. It is merely the presence  
8 or absence of a certain condition.

9           JUDGE MOORE: Now, when I look at this figure  
10 here, it seems to me that the circuit elements that we are  
11 dealing with, besides the fact that the DSP itself, as you say,  
12 or the amplifier may be a Class C or whatever, but the  
13 workings of the circuit and the elements of a circuit seem to  
14 be basic circuit elements.

15           So why would one of ordinary skill in the art not  
16 look to this? Would it be that they wouldn't look to an RF  
17 application in general so it would just be that they would  
18 never get to this? Because it seems to me once they have this  
19 in front of them, that the elements that they would need to  
20 deal with, the teaching that they would have to learn from, are  
21 simple circuit element teachings.

22           MR. CRAIN: Aside from the fact -- in response to  
23 your question, Judge Moore -- that the elements do not teach  
24 the data current values doing the flag operation, the interrupt  
25 type operation, I think you did hit it correctly that one of



1 ordinary skill in the art -- and if I may turn to slide 18 in  
2 response to your question -- that the person of ordinary skill,  
3 the only person of ordinary skill in the art of the '542 patent  
4 at the time of the invention has -- is of the opinion that one of  
5 ordinary skill in the art would not look to any RF application  
6 with respect to an audio amplifier.

7 So that person of ordinary skill in the art would  
8 not have even thought to look this way because these  
9 applications, as is quoted at the bottom of slide 18, are vastly  
10 different and very unlikely that an audio engineer would have  
11 read or sought ideas from Black.

12 So, Judge, I would submit that that is specifically  
13 responsive to the question that you posed there.

14 JUDGE QUINN: What is the difference? I mean,  
15 there is the same components. They are used for the same  
16 purpose.

17 What is the vast difference other than the field of  
18 application seems to be, you know, one is RF and the other  
19 one is audio?

20 MR. CRAIN: And that would take us to slide 19,  
21 if I may, to answer your questions, because class -- audio  
22 amplifiers, and this is an excerpt again from Paper 25, audio  
23 amplifiers are normally constructed in various classes, Class  
24 A, Class AB, Class B, and also Class D we don't see here.

1           But the distinction, Judge Quinn, is that Class C  
2     amplifiers, which are RF amplifiers, are very specialized and  
3     they are vastly different. The construction of the amplifiers,  
4     you know, whereas an audio amplifier you may have  
5     differences in impedance and load, you may not have that in  
6     an RF amplitude. It is a max impedance situation.

7           So it is a completely different situation where you  
8     have the impedance in an antenna versus impedance in the  
9     speaker and the situations that may occur there. For that  
10    reason, one of ordinary skill in the art wouldn't necessarily  
11    look to the RF.

12          And this excerpt from some technical text, you  
13    know, reminds us that Class C amplifiers are employed for  
14    RF. And the last sentence there is that the design is a rather  
15    specialized topic.

16          So to answer your question, Judge Quinn, there is  
17    a level of complexity there that, you know, we see in this  
18    reference. As Judge Moore mentioned, well, we see some  
19    basic components.

20          But, again, because these are clearly RF  
21    applications, they are understood to be vastly different such  
22    that one of ordinary skill in the art --

23           JUDGE PERRY: Counsel, you have three minutes.

24           MR. CRAIN: Okay. I've got to move.

1           JUDGE QUINN: I understand that there may be  
2     assumptions that have to be made depending on which  
3     amplifier you select, but an amplifier is an amplifier and  
4     performs the same function on all of the circuits, and unless  
5     you are saying that these references, because they are directed  
6     to the RF field they are somehow non-analogous, we have to  
7     consider their teachings, do we not?

8           MR. CRAIN: Well, I think, to answer that, they  
9     are different because of the specific requirements of the  
10    application. So for an RF, it would have circuitry and  
11    components and needs that would not be present in an audio  
12    application.

13           So if I were to take the statement you made that it  
14    is just an electrical amplifier, well, then we wouldn't have  
15    classes, we wouldn't have differences between the various  
16    amplifiers because, you know, the field has noted that they  
17    are, indeed, extremely different.

18           But as my time runs out here, and this goes back to  
19    the point that we don't believe that Dr. Ellis is one of ordinary  
20    skill in the art, he has indicated he has no understanding of  
21    what a Class C amplifier even is. So I think that further goes  
22    toward whether or not his opinion should be given any weight.

23           Any other questions from the Board?

24           JUDGE PERRY: No. Thank you, counsel.

25           MR. CRAIN: Thank you very much.

1 JUDGE PERRY: Petitioner, do you care to rebut?

2 MR. KINSEL: Thank you. Grant Kinsel again for  
3 Petitioner. I will make three very quick points and I will  
4 begin with where we left off.

5 Black is clearly analogous art and its teachings  
6 have to be considered here. I will point out that both Black  
7 and the '544 are in Class 330, which is amplifiers. So if you  
8 look at the fields, the relevant fields, U.S. fields, they are  
9 both in the amplifier art so they are clearly analogous art.

10 I would like to touch on the questions about Dr.  
11 Ellis. Dr. Ellis has a Ph.D. in electrical engineering and  
12 computer science. There is no question that he is competent  
13 to testify as an expert here. It is certainly true that he didn't  
14 have as his job designing and building power amplifiers, but  
15 that's not required to testify about what a person of ordinary  
16 skill in the art in 1994 would have known.

17 The '542 patent is not really about power  
18 amplifiers. It is about the use of a digital signal processor  
19 and calculating these current and voltage values. Dr. Ellis,  
20 that is exactly in Dr. Ellis's wheelhouse. That is exactly the  
21 kind of expertise that he has.

22 So there is no question that he is qualified to  
23 testify about what a person of ordinary skill in the art would  
24 have known in 1994.

1           The final point is, we have heard a lot about  
2   Mr. Cordell and how he wrote the book and all of this. But  
3   what you haven't heard from Patent Owner is any evidence  
4   from Mr. Cordell or anyone else saying that it would not have  
5   been obvious to use the teachings of Tsurushima and  
6   Gittleman to detect current and voltage and interface them  
7   with the DSP.

8           That's common engineering. And Mr. Cordell  
9   never one time says that that was an engineering leap. There  
10   is no evidence, for instance, in the record of secondary  
11   considerations of non-obviousness. There is no indicia at all.

12          There is no evidence of commercial success or  
13   acceptance in the industry. There is no secondary evidence  
14   whatsoever to suggest that there was some sort of technical  
15   leap being made here.

16          And Mr. Cordell, despite spending 200 hours  
17   rooting through these references to try to find quibbling  
18   differences, never says one time this would not have been  
19   obvious to do. And I think that's the key thing to take away.

20          Unless the Panel has some questions, I'm done.

21          JUDGE PERRY: Thank you, counsel.

22          JUDGE QUINN: I do have a question. We just  
23   heard Patent Owner address that there are questions as to  
24   whether a person of ordinary skill in the art would turn to

1 certain references because of the assumptions and the  
2 classifications of the power amplifiers.

3 And my question to you is, given that the expert,  
4 your expert is more in line with a DSP expert, or his expertise  
5 is more in line with DSP, what do we do with the situation  
6 that you are relying on someone who doesn't have as much  
7 experience with amplifiers but is making statements regarding  
8 how these amplifiers may be designed and/or interface with  
9 the DSP?

10 MR. KINSEL: He is clearly capable of speaking  
11 to that. There is no question about that.

12 Dr. Ellis has, as I mentioned, an electrical  
13 engineering degree from MIT, a Ph.D. He runs the Electrical  
14 Engineering Department. He testified in detail that he is  
15 responsible for everything that is taught in the electrical  
16 engineering group at his university, including the design of  
17 amplifiers.

18 Now, it is true, as I mentioned, that he was never  
19 paid to design or test amplifiers. But the record is also clear,  
20 and there are a number of references that we have cited to Dr.  
21 Ellis's testimony, where he has testified that he designed  
22 amplifiers, that he has tested amplifiers, that he has used  
23 amplifiers.

24 He understands the art sufficiently to testify as to  
25 what a person of ordinary skill in the art would do.

1           And so the question is not so much, again, not so  
2 much whether these particular circuits, the Tsurushima circuit  
3 or the Gittleman circuit, would be used with the DSP. The  
4 question is would the core teaching of these references, that  
5 one can detect current and voltage and use that as a measure  
6 of impedance, be used with a DSP system?

7           And that's clearly -- that's the heart of this patent.  
8 That's what this patent is about. And that's right in the  
9 wheelhouse of Dr. Ellis. So I think Dr. Ellis is the credible  
10 one as opposed to Mr. Cordell.

11           Does that answer your question, Judge?

12           JUDGE QUINN: Yes. Thank you.

13           MR. KINSEL: Thank you. Any other questions?

14           JUDGE PERRY: No. Thank you, counsel. That  
15 concludes argument on the 129 case.

16           Let's take a five-minute recess and then we will  
17 have argument on the 131 case. We will go off the record  
18 now.

19           (A recess was taken from 12:02 p.m. to 12:09  
20 p.m.)

21           JUDGE PERRY: We are back on the record. We  
22 are reconvening for argument on the 131 case. Counsel.

23           MR. KINSEL: Thank you. Again, Grant Kinsel  
24 for Petitioner. I apologize for the Panel waiting.

1           The '544 patent has some very straightforward  
2 claims. And what the '544 patent purports to claim is the idea  
3 of using a programmer with a removable connection attached  
4 to an amplifier with a DSP.

5           That's what the claims here are all about. Now,  
6 again, the '544 patent doesn't teach anything new about power  
7 amplifiers, doesn't teach anything new about DSP's. And  
8 more importantly, it doesn't teach us anything new about this  
9 removable connection, which is really the heart of these  
10 claims.

11           So let me start by posing a question. Is it really  
12 the case that the Patent Owners were the first to come up with  
13 the idea of using a programmer attached to an amplifier with a  
14 DSP by a removable connection, were they really the first to  
15 do that? The answer is, without a question, no.

16           Now, there are some claim construction issues  
17 with respect to this patent. Normally I would want to begin  
18 with those claim construction issues so we can sort those out,  
19 but they arise really with respect to the dependent claims.

20           And so if it is all right with the Board I will  
21 continue with claim 1 without diverting into claim  
22 construction and we can talk claim construction if we are able  
23 to get into some of those dependent claims where it arises.

24           So let me put up claim 1. And here is what claim  
25 1 requires. Claim 1 has an input port for receiving input



1 signals. It has got the digital signal processor that we have  
2 seen in the other patent, in the '542. It has got a power  
3 amplifier. And then it has got an external programmer.

4 And then the key limitation is really this last one,  
5 a programming signal input port for receiving at least one  
6 programming signal from the external programmer -- and here  
7 is the key point -- the external programmer being removably  
8 connectible to the programming signal input port for  
9 modifying at least one of the signal processing functions, and  
10 the signal processing function parameters defined in the signal  
11 processing circuit.

12 And that's really the key limitation. That's where  
13 the battleground is. Is there a removable connection or is  
14 there not?

15 So there are two key pieces of prior art in this  
16 case. There is patent 5,822,775, to Sudo, and there is the WO  
17 application 91/08654 to Krokstad.

18 I have put up figure 1. This is figure 1 from Sudo.  
19 And what Sudo describes is a microcomputer 20 under the  
20 control of a keyboard that can be used to program functions  
21 and parameters into a DSP.

22 And the program is stored, the sound programs are  
23 stored here in program ROM 14. The parameters or the  
24 coefficients, as they are called in Sudo, are stored here in the  
25 buffer memory. The DSP then uses the coefficients and these

1 programs to act on an audio signal and outputs that audio  
2 signal through a D-to-A converter to an output.

3 Now, I do have to say candidly Sudo does not  
4 disclose what happens to this output. It doesn't talk about the  
5 output stage. It didn't talk about an amplifier. But there is no  
6 dispute in the record that it would be obvious to a person of  
7 skill in the art to connect Sudo to its digital-to-analog output  
8 to an amplifier.

9 So that's not really a contested issue but it is not  
10 specifically in Sudo. What Sudo really is only about, or Sudo  
11 is mostly about, is how one writes these new coefficients that  
12 are stored in this buffer memory without interrupting the  
13 sound. That's really what Sudo is about.

14 Sudo is not really about this microcomputer and its  
15 connection to the interface. But what Sudo shows and what  
16 can't be reasonably disputed is that the prior art shows one  
17 can use a separate microcomputer, under the control of an  
18 input device like a keyboard, to program a DSP with different  
19 functions and different function coefficients.

20 That can't be disputed. And that's what Sudo  
21 indisputably shows. You have got a microcomputer  
22 controlling a DSP.

23 Now, let me talk a little bit about Krokstad.  
24 That's the second piece. This is figure 4 from Krokstad. And  
25 what Krokstad is, is a programmable hearing aid. And the

1 way it works is there is a DSP in the hearing aid, and a user  
2 can push a button on his hearing aid if he is having trouble in  
3 a particular environment, and the functions that are  
4 programmed into that hearing aid will change so that it can  
5 improve the hearer's hearing, the user's hearing.

6 But Krokstad importantly also discloses using a  
7 removable connection to program or reprogram that hearing  
8 aid. So let me put up page 5 from Krokstad. This is what  
9 Krokstad talks about. This is on page 5. "A sixth object is to  
10 provide a hearing aid in which the stored response functions  
11 can be reprogrammed in that the hearing aid is connected to a  
12 computer via an interface for input of new response  
13 functions."

14 So what Krokstad talks about is that one can store  
15 one's hearing aid in a case and plug that case into a computer  
16 via an RS-232 connection, an old-fashioned serial connection,  
17 and the settings and functions can be updated.

18 And the reason why one would do that is so, if you  
19 go to the audiologist and the audiologist says, you know, your  
20 hearing has gotten a little bit worse and so I want to change  
21 these functions a little bit, it gives the audiologist a chance to  
22 figure out how to do it and change those functions.

23 So that's what Krokstad says at page 21. On page  
24 21 Krokstad says: "The hearing aid can easily be  
25 reprogrammed to suit altered user conditions and changes in

1 the hearing of the user or the hearing of another user." By the  
2 way, that's kind of gross but, anyway, "reprogramming is  
3 performed in that the random access memory, RAM 1, in the  
4 case or secondary section 2 is connected via an interface IF of  
5 type RS-232 to a computer, e.g. a personal computer which is  
6 connected to an audiometer system."

7 So what do we have? We have Krokstad  
8 connecting a computer to this DSP and changing the  
9 functions. And the connection is a removable connection. It  
10 is by definition a removable connection.

11 But that's not all. Krokstad also discloses the use  
12 of an amplifier with this DSP. So figure 4-D, which I won't  
13 put up for the moment, but figure 4-D shows that if you need  
14 to use an amplifier, one can be included.

15 And at page 18 Krokstad specifically says that one  
16 can use a Class D amplifier controlled directly by the digital  
17 signal. And so now we've got an amplifier under the control  
18 of a DSP that can be removably programmed with an external  
19 program.

20 JUDGE MOORE: Maybe we could return, because  
21 there are two challenges, there is Sudo and Porambo, right,  
22 and Sudo and Krokstad. So for the combination of Sudo and  
23 Porambo, you still need to show removability. So we've been  
24 talking a lot about how Krogstad shows removability.

1                   And I guess the question is, I heard your  
2 presentation earlier, but where does Sudo show removability  
3 or is that something that Sudo does not need to show?

4                   MR. KINSEL: I don't think Sudo needs to show it.  
5 The question -- again this is an obviousness challenge -- so  
6 the question is would it have been obvious to a person of skill  
7 in the art to use a removable connection to program the  
8 amplifier?

9                   And Dr. Ellis gives a whole laundry list of reasons  
10 why it would be advantageous to do that. For instance, to use  
11 one programmer to program multiple amplifiers, to replicate  
12 settings, et cetera. So there is a motivation to use a  
13 removable connection.

14                  The claims themselves don't disclose any  
15 particular kind of removable connection. It just says a  
16 removable connection. And because it is just a generic  
17 removable connection, any old removable connection will do.

18                  Now, the parties' experts agree that Sudo could  
19 have been implemented as a PCI card, for instance, which  
20 would slot into a computer, and, by definition, would be a  
21 removable connection. And given that the claims themselves  
22 don't require any particular kind of removable connection,  
23 that PCI implementation would be sufficient.

24                  So I think that, regardless of whether at the end of  
25 the day Sudo is a removable connection or not is beside the

1 point because, first of all, there is Krokstad anyway, and  
2 Krokstad is clearly a removable connection, so that element is  
3 clearly taught.

4 But even if we were simply restricted to Sudo, it  
5 would be obvious to use a removable connection, particularly  
6 in light of the fact that the specification doesn't describe any  
7 particular removable connection. It doesn't describe how one  
8 would make it, how one would use it. It doesn't say anything  
9 about it.

10 So I think, in answer to your question, Judge  
11 Moore, I think regardless of the combination, whether it is  
12 Sudo and just Porambo or Sudo and Krokstad, it is all there.  
13 In any case, we do specifically have a combination of Sudo  
14 and Krokstad. So whether Sudo specifically teaches a  
15 removable connection I don't think matters at the end of the  
16 day.

17 JUDGE PERRY: So you acknowledge that within  
18 the four corners of Sudo and Porambo, those two documents  
19 do not in and of themselves teach removability?

20 MR. KINSEL: Yes, I do. So if I can, I'm going to  
21 return a little bit to Krokstad because there is one more point  
22 that I want to make with respect to that reference, and I think  
23 it is an important one.

24 The '544 patent talks about functions and  
25 parameters and it identifies some specific functions. So I'm

1 going to put up the '544 patent in just a moment. And this is  
2 section -- column 1, lines 30 through 36, where the '544 talks  
3 about various kinds of functions that can be ultimately  
4 incorporated into the digital signal processor: "The various  
5 elements of the signal processing circuit define a plurality of  
6 sound processing parameters, such as a frequency and an  
7 amplitude of a cross-over function, relative levels and routing  
8 in a mixer, response times, ratios and thresholds in a  
9 compressor, and frequency, gain and bandwidth in an  
10 equalizer."

11 So that's what the '544 calls functions. Well,  
12 Krokstad discloses saving those same kinds of functions,  
13 almost identical. So let me put up where that is. That's at  
14 page 12 of Krokstad.

15 In about the middle part of this paragraph, the first  
16 full paragraph, I should say, Krokstad says on page 12: "The  
17 dynamically-limited signal is conveyed to an equalizer 34 in  
18 the form of a digital filter network whose primary function is  
19 tone control but which in reality enables a number of  
20 functions to be performed.

21 "Firstly, the equalizer 34 can constitute a divider  
22 filter or cross-over to the acoustic transmission channel, ATC,  
23 perform correction for the effective amplitude response of the  
24 sound generator, SG, correct any phase distortion in the  
25 cross-over frequency range, perform an adaptation to the

1 user's hearing residue and possibly also a  
2 frequency-dependent compression."

3 So Krokstad by itself really has effectively  
4 everything in this claim. We have got a DSP that is  
5 programmable, that stores functions. That's what Krokstad  
6 says. Stores coefficients. That's what Krokstad says. That  
7 can be programmed with a removably connectible separate  
8 computer.

9 So you take Krokstad and the teachings from Sudo  
10 and you have clearly everything that is in claim 1 of the '544  
11 patent. Now, there are really two challenges here that the  
12 Patent Owner puts up. So let me address those two  
13 challenges.

14 First, Patent Owner says that Sudo doesn't disclose  
15 a removable connection, that it is a hardwire connection. And  
16 there is lots of discussion in the papers about, you know, are  
17 these dots on Sudo pins, are they hardwire connections, are  
18 they a PCI board? It is immaterial.

19 And it is immaterial, as I said in response to your  
20 question, Judge Moore, because there is already clearly taught  
21 a removable connection in the art. Krokstad clearly teaches  
22 that. So whether or not at the end of the day Sudo is  
23 removable doesn't really matter because Krokstad is  
24 unquestionably removable.



1           The second challenge that the Patent Owner puts  
2 up is that one wouldn't take the specific RS-232 connector in  
3 Krokstad and use it with the Sudo device. And, again, this  
4 misses the point and kind of goes back to what we were  
5 talking about a little while ago.

6           This is an obviousness challenge. The question is  
7 not whether you would use the specific circuits, in this case of  
8 Sudo and the specific removable connection of Krokstad, and  
9 marry them. The question is whether you would take the  
10 teachings from these two patents and put them together.

11           And what are the teachings from these two  
12 patents? And this much is unquestionable. Sudo teaches at a  
13 minimum using a separate microcomputer to program DSP's  
14 with both functions and coefficients. Krokstad at a minimum  
15 teaches a removable connection to do that very same thing.

16           So was there a motivation to combine them? Sure,  
17 lots of motivations to combine them. As Dr. Ellis testified,  
18 Dr. Ellis testified that one would combine them so that you  
19 could replicate programming across various amplifiers and so  
20 that you could use a separately-purchased computer to  
21 program these things. So there is lots of good reasons why  
22 one would marry these pieces of art.

23           And those are really the only two criticisms,  
24 again, other than Crest's complaint that Dr. Ellis isn't a person  
25 of skill in the art, as to why these things wouldn't be

1 combined. And the thing that is wholly missing from Crest's  
2 response with respect to this Patent Owner is a statement  
3 anywhere in the record from Cordell or any other evidence  
4 that it would not have been obvious to a person of skill in the  
5 art, who knew about using a programmable computer -- a  
6 separate computer to program the DSP, to simply put a  
7 removable connection in there.

8 Why would that not have been obvious? There is  
9 no indication in the record. There is no evidence in the  
10 record. There is no evidence of commercial success. There is  
11 no evidence of significant hurdles or unexpected results.  
12 There is no evidence of that.

13 So I would submit that claim 1 is clearly, clearly  
14 rendered obvious by the combination of Krokstad and Sudo at  
15 a minimum.

16 JUDGE PERRY: Counsel, you have about five  
17 minutes left.

18 MR. KINSEL: Okay. I will reserve the rest of my  
19 time then with respect to that. Thank you.

20 JUDGE PERRY: Patent Owner, whenever you are  
21 ready.

22 MR. GRAVOIS: May it please the Board. Your  
23 Honors, my name is Robert Gravois. I am backup counsel for  
24 Patent Owner, Crest Audio. I will be presenting Patent

1 Owner's oral argument for the '544 patent, which is subject to  
2 the 131 proceeding.

3 Now, the '544 patent is directed towards audio  
4 amplifiers. But before I discuss some of the challenges of the  
5 claims I would like to discuss some of the features of these  
6 audio amplifiers that are relevant to some of the points I want  
7 to discuss today.

8 Now I'm on slide 2. Slide 2 includes figure 1 of  
9 Exhibit 1001 which illustrates an example of one of these  
10 audio amplifiers. As you can see here, the audio amplifier  
11 includes an amplifier housing, which is labeled 110 in this  
12 figure, which includes a signal processing circuit.

13 Now, in this signal processing circuit there is a  
14 digital signal processor for processing audio signals. And in  
15 addition, there is an external programmer illustrated here as  
16 element 200. This external programmer can be removably  
17 connected to this programming signal input port labeled 120.

18 Now, when this external programmer is connected  
19 to this amplifier, it can read and modify information for that  
20 signal processing circuit.

21 In addition, this information can be stored on this  
22 external programmer. The external programmer can be  
23 removed from the amplifier and then plugged into another  
24 amplifier, and in this way it can replicate settings across  
25 multiple amplifiers.

1           As you know, there are two challenges to claim 1.  
2     The first challenge is based on Sudo and Porambo. As you  
3     know, claim 1 recites an amplifier comprising, among other  
4     things, an external programmer and a programming signal  
5     input port for receiving at least one programming signal from  
6     the external programmer.

7           The claim also recites the external programmer  
8     being removably connectible to the programming signal input  
9     port. Patent Owner believes that Petitioner has not  
10    established by a preponderance of the evidence that the  
11    combination of the cited references show or suggest this claim  
12    element.

13           Now, Petitioner's argument for claim 1 under  
14    ground 1 is that Sudo discloses a removably connectible  
15    external programmer. So let's talk about Sudo.

16           So Sudo involves a DSP for processing audio.  
17    And Sudo teaches that a user can change sound fields for this  
18    DSP. A sound field is like audio effects that can be applied to  
19    this audio signal.

20           So a user can press a button on this keyboard  
21    21 -- and, Judge Quinn, I'm on slide 5 -- so a user can press a  
22    button on this keyboard 21, and sound field data is transferred  
23    into the DSP.

24           Now, Bob Cordell, Patent Owner's expert, has  
25    explained that this system here is like a conventional home

1 stereo or car stereo system where you can just push a button  
2 on the panel and change sound fields, such as a stadium sound  
3 field or a hall sound field.

4 Let's talk about this interface 19. Bob Cordell,  
5 Patent Owner's expert, explains to us that a person having  
6 ordinary skill in the art would recognize that this interface is  
7 not a connector. It is circuitry that is internal to the DSP. It  
8 involves a wide parallel bus with extremely fast signals going  
9 through it and is subject to tight timing constraints.

10 This microcomputer right here is a, as Bob  
11 Cordell, Patent Owner's expert, explains, would recognize this  
12 as being an integrated circuit chip.

13 So in ground 1, Petitioner argues that this  
14 connection between the microcomputer and the DSP is a  
15 removable connection.

16 Now, it appears that Petitioner concedes that Sudo  
17 does not provide any showing or suggestion that this is a  
18 removable type of connection. In fact, their expert agrees as  
19 well.

20 I guess I can skip over this now since Petitioner  
21 has agreed that Sudo, within its own teachings, does not show  
22 or suggest this claim element.

23 It appears that Petitioner now relies on this PCI  
24 argument. Petitioner argues that this connection right here

1 could be a PCI interface. Now, this argument was raised for  
2 the first time in Petitioner's reply to the opposition brief.

3 Now, none of the references involve PCI. Instead,  
4 the only evidence that Petitioner relies upon is two things:  
5 The first thing is the testimony of their expert, Dr. Ellis.

6 So Dr. Ellis brought up this PCI argument when he  
7 said that he was envisioning the system of Sudo being subject  
8 to a research development environment where chips were  
9 being removed and researchers were studying this system.

10 However, Sudo is not about this at all. There is no  
11 indication that this system is being subject to a research  
12 development. So that contention is just not substantiated by  
13 the facts.

14 JUDGE PERRY: Counsel, isn't microcomputer 20  
15 external to the DSP?

16 MR. GRAVOIS: Yes, I believe so.

17 JUDGE PERRY: And I see a node drawn in a  
18 circular fashion connecting the microcomputer with the  
19 interface of a DSP. What does that imply? Are you saying  
20 that's a hardwire connection?

21 MR. GRAVOIS: That's correct. So Bob Cordell,  
22 Patent Owner's expert, has explained that this actually teaches  
23 that this is a hardwire connection.

24 So Bob Cordell explains that a person having  
25 ordinary skill in the art would recognize that this is an

1 integrated circuit chip right here, this microcomputer, and that  
2 the A-to-D and the D-to-A are also integrated circuit chips.

3 Now, you will recognize that this connection  
4 between the microcomputer and the DSP is illustrated in the  
5 exact same fashion that these connections between the A-to-D  
6 and the D-to-A for the DSP are shown.

7 Bob Cordell tells us a person having ordinary skill  
8 in the art would recognize that this connection right here is a  
9 printed wiring board trace, which is permanent. It is not a  
10 removable connection. It is a hardwire connection.

11 Again, I mentioned before that this connection  
12 between the microcomputer and the DSP is illustrated in the  
13 exact same fashion. So this indicates that this is also a  
14 hardwire connection between the microcomputer 20 and the  
15 DSP 2.

16 Now, if this was some sort of a removable  
17 connection, you would expect to see some kind of indication  
18 of such, but, as Petitioner appears to concede, this is not a  
19 removable type of connection.

20 Now, the second piece -- the second thing that  
21 Petitioner relies upon to make its PCI argument is the  
22 testimony of Bob Cordell, Patent Owner's expert, during his  
23 cross-examination.

24 Now, if you read that testimony, Bob Cordell,  
25 Patent Owner's expert, is actually being asked to speculate

1 how this system in Sudo could be further modified in view of  
2 the PCI standard in order to implement the PCI standard.

3 So Patent Owner respectfully objects and believes  
4 that this is a new ground for challenging the validity of the  
5 patent. Again, there is nothing in the references to indicate  
6 that PCI is involved.

7 Now we can move to the second challenge to claim  
8 1.

9 JUDGE QUINN: Let me ask you a question about  
10 the point you just made. Sorry for the little delay here.

11 MR. GRAVOIS: Sure.

12 JUDGE QUINN: So the Petitioner relies on Dr.  
13 Ellis's declaration for the point that the connection to the  
14 interface suggests, it doesn't say teaches or discloses, but  
15 suggests removability.

16 So in that sense that is the support, an opinion of  
17 someone who looks at the diagram and can draw that inference  
18 from the diagram.

19 You challenge that in your response, and then they  
20 are coming back in their reply and giving additional detail to  
21 overcome your rejection, I mean your objections to that  
22 statement that Dr. Ellis said.

23 Why is that outside the scope if you have  
24 challenged the initial assertion, and they are just providing  
25 additional detail after a suggestion, isn't it proper that when



1     there is a statement made that you think it won't be challenged  
2     and then it does get challenged that you would then support  
3     that with additional information?

4             MR. GRAVOIS: So let's first talk about the  
5     second thing that Petitioner relies upon to make this  
6     argument, which is the cross-examination of Bob Cordell's  
7     testimony. And that testimony is actually Bob Cordell  
8     speculating on how this system could be further modified in  
9     view of the PCI standard in order for Sudo to implement the  
10    PCI standard.

11            Now, with respect to Dr. Ellis's testimony, that  
12    argument was never made in the petition, as you pointed out.  
13    It was only made in his cross-examination where he is  
14    speculating, or he is envisioning, is the word he used, that  
15    Sudo could be in this research development where chips are  
16    being removed.

17            But that just doesn't exist. That's not  
18    substantiated by the facts in the exhibits and the references.  
19    There is no PCI. So his argument is just not supported by the  
20    facts.

21            In addition, we have not had any opportunity to  
22    respond to this new PCI argument because it was brought up  
23    for the first time in their reply brief.

24            Does that answer your question?

25            JUDGE QUINN: Yes. Thank you.

1                   MR. GRAVOIS: So let's discuss the second  
2 challenge to claim 1 which is based on this combination of  
3 Sudo and Krokstad. Again, it is the same claim element of the  
4 external programmer being removably connectible to the  
5 programming signal input port.

6                   And now I'm on slide 11 here. So slide 11 shows  
7 an illustration of figure 4 of Exhibit 1007. So Sudo  
8 involves -- sorry, Krokstad, so Krokstad involves digital  
9 signal processors being used in the context of hearing aids.

10                  Now, there are two portions to this hearing aid.  
11 On the left side there is this portion that is worn by the user,  
12 and that includes the DSP portion. On the right side is the  
13 storage case which is used for programming this DSP.

14                  Now, to program the DSP, this RS-232 connection  
15 is first used, and a computer is plugged into this external  
16 storage case, and data is transferred from the computer to this  
17 RAM 1. Later the hearing aid can be attached to this storage  
18 case and data is transferred from RAM 1 to RAM 2.

19                  So let's talk about this RS-232 connection. So  
20 Patent Owner's expert, Bob Cordell, explains to us that  
21 RS-232 is an old, slow, serial type of connection. Data is  
22 transmitted very slowly using this connection.

23                  But let's go back to Sudo. So Sudo teaches that  
24 when a user presses a button on this keyboard, this  
25 microcomputer detects that button press and transmits data

1 extremely fast into this DSP without interrupting the  
2 operation of the DSP. So let's dig down a little bit more on  
3 how this transfer occurs.

4 So when a user presses a button on this keyboard,  
5 the microcomputer responds by indicating to the DSP that it  
6 intends to send some data. When this DSP is ready to receive  
7 the data, it notifies the microcomputer, data is transferred  
8 extremely quickly, and the transfer of the data has to end  
9 before this DSP reaches its next instruction read cycle.

10 In other words, there is a very tight window when  
11 data can be transferred. So this data, which includes program  
12 data and coefficient data, has to be transferred extremely  
13 quickly into this DSP.

14 JUDGE MOORE: You know, as we mentioned  
15 earlier, we are dealing with obviousness now.

16 But how do you respond to the argument that this  
17 RS-232 connection, the concept of it being removable is what  
18 is being combined into Sudo?

19 MR. GRAVOIS: Right, so the Supreme Court in  
20 KSR has made it clear that in order to establish obviousness  
21 the challenger must show that each and every claim element is  
22 shown, suggested or rendered obvious by the prior art and that  
23 any proposed modification or combination would have been  
24 obvious.

1           And there is a reason for this, because it is very  
2           easy for hindsight bias to creep into an obviousness analysis,  
3           especially when you are talking about technology that is 20  
4           years old.

5           I'm sorry, did I answer your question on that?

6           JUDGE MOORE: Yes. That's fine.

7           MR. GRAVOIS: So let's say somehow we could  
8           attach this RS-232 connection in between this microcomputer  
9           20 and the DSP 2 here. Now, the data would be extremely  
10          slow. The program data and then the coefficient data would  
11          not be able to be transmitted into this DSP in time before the  
12          DSP reaches its next instruction read cycle.

13          So this would interrupt the operation of the DSP  
14          which, in fact, Sudo states that it is necessary to be able to  
15          transfer this data in such a way that it doesn't interrupt the  
16          operation of the DSP. It actually uses the word "necessary."

17          So Patent Owner's expert, Bob Cordell, explains  
18          that an RS-232 connection between the DSP and the  
19          microcomputer would not work because it would not be fast  
20          enough to satisfy the needs to transfer the programming  
21          information from the microcomputer to the DSP.

22          JUDGE QUINN: Let me ask you something  
23          because my colleague is onto something here. The concept  
24          here that I think Petitioner is advancing is that using an  
25          interface, such as an RS-232, provides for the removability of

1 a component attached to another device, another board or  
2 something to that effect.

3 I don't think that we are looking at this with the  
4 concept that we are going to take Sudo and put in an RS-232  
5 port. It is a technique of including an interface that we are  
6 looking at, is that technique known in the art, and would that  
7 technique then, could it be applied predictably to the other  
8 components.

9 And what I'm hearing is that you think that it is  
10 too slow to put it over any other device and that would mean  
11 it doesn't work. That is sort of putting them together  
12 incorporating the actual piece into the other, and that's not  
13 what we are doing here. We are applying the knowledge and  
14 not the actual part.

15 MR. GRAVOIS: Okay. Well, so let's go talk  
16 about this connection in Sudo, the microcomputer to the DSP.  
17 Bob Cordell, Patent Owner's expert, had explained that this,  
18 the microcomputer, would be located extremely close to this  
19 DSP for engineering considerations, such as noise. This  
20 would have to be extremely close.

21 There is not -- we have no record, no indication  
22 that there is any sort of type of connection that could be used  
23 that would be fast enough to even do this. So we submit that  
24 would not be obvious, even if there was some sort of  
25 connection that was fast enough, it would not be obvious

1 because of the technical hurdles that would be involved to do  
2 this. It would just involve too many engineering limitations.

3 JUDGE QUINN: But are you saying  
4 that -- including an interface would be technically  
5 challenging, but it is not impossible -- are you saying that it  
6 occupies the level of skill in the art, someone with incredible  
7 experience, a Master's degree and a design of circuitry?

8 MR. GRAVOIS: According to Patent Owner's  
9 expert, that's correct. It would not have been obvious to a  
10 person of ordinary skill in the art even if it was possible.

11 JUDGE QUINN: Yeah, but give me the reasons.  
12 Give me the facts. It is not possible. Why? Is it too  
13 difficult to put in?

14 It is not going to work right off the bat is not a  
15 good explanation because we presume that a person of skill in  
16 the art has some creativity and is able to solve problems.  
17 Right?

18 MR. GRAVOIS: That's correct, but there is  
19 nothing in the record that shows any sort of type of  
20 connection that would be possible of making this work.

21 These components are integrated circuits that are  
22 located very close together on printed wiring board traces.  
23 And, again, we're not sure why you would want to make a  
24 removable connection here.

1           Remember, this is like a system, like a  
2       conventional home stereo receiver or a car stereo receiver  
3       where a user is simply pressing a button to change sound  
4       fields. So there is not even a motivation to do so.

5           For that reason we believe that Petitioner's  
6       proposed combination of making this removable connection is  
7       just not obvious.

8           JUDGE PERRY: Counsel, but Sudo is a circuit  
9       having very specific properties that requires this fast  
10      interaction.

11          The claim itself does not necessarily require that  
12      speed that is expressed by Sudo and on which you base  
13      incompatibility with an RS-232 serial interface.

14          MR. GRAVOIS: That's correct. And to establish  
15      obviousness Petitioner must show that its proposed  
16      combination of references is obvious. So it would have to  
17      show that the proposed combination of Krokstad, with that  
18      RS-232 connection, with Sudo would be obvious.

19          Now, I'm not sure how that's relevant to whether  
20      or not the '544 patent claims a connection that is fast or slow.

21          JUDGE PERRY: My point is that Sudo is cited for  
22      programming a digital signal processor. And Krokstad  
23      teaches a removable interface.

1                   Why are we hung up on the particulars of the  
2 internal workings of Sudo in making your incompatibility  
3 argument?

4                   MR. GRAVOIS: Well, if somehow the two, the  
5 teachings of Sudo and Krokstad could be combined, it would  
6 result in a system that just wouldn't be able to function as  
7 intended. Under the case law that's a showing of  
8 non-obviousness.

9                   And I'm not sure if I answered your question or if  
10 I understood your question.

11                  JUDGE PERRY: I think that's sufficient.

12                  MR. GRAVOIS: I'm on slide 14. And, in fact,  
13 Petitioner's expert, Dr. Ellis, has admitted that this RS-232  
14 connection would be unsuitable for Sudo. Why? Because it is  
15 too slow.

16                  Now, in the interest of time, I'm going -- if it is  
17 okay with the Judges -- I'm going to skip over to claim 13,  
18 which is challenged under two grounds and, Judge Quinn, I'm  
19 on slide 19 and now 20.

20                  So claim 13 recites: "Wherein the controller  
21 comprises a microprocessor for receiving programming  
22 information from at least one of the input device and a control  
23 circuit of the amplifier." Let me give you some context to  
24 this claim.



1           Claim 13 depends from claim 9, which recites that  
2     the controller is in the external programmer. So the '544  
3     patent incorporates by reference the application that led to the  
4     '542 patent. And in the IPR proceeding for that patent, the  
5     129 proceeding, the Board held that the phrase "at least one  
6     of" followed by a list of categories separated by "and" rather  
7     than "or" is a conjunctive list in which each one of the  
8     members of the list is necessary to satisfy the claim. And this  
9     Panel cited the Superguide v. DirecTV Federal Circuit  
10    decision.

11           So the Patent Owner respectfully submits that the  
12    Board should apply the same reasoning that the Federal  
13    Circuit in Superguide and DirecTV did, and hold that this  
14    claim element requires at least one of both the input device  
15    and a control circuit of the amplifier.

16           Now, in its reply brief, Petitioner argues that this  
17    interpretation should not apply because the specification does  
18    not require receiving programming information from both the  
19    input device and the control circuit of the amplifier.

20           However, the claim language itself is explicit and  
21    uses the word "and" not "or." So Petitioner's claim  
22    construction for this claim phrase should fall.

23           JUDGE MOORE: Now, Superguide, the case, does  
24    say that the context, in other words, the specification, you

1 know, can be looked to. It is not an absolute rule where you  
2 have this "at least one of" and you use the "and."

3 So Petitioner says that these, in the specification,  
4 these two, the input device and the control circuit, are in the  
5 alternative, in other words, they are not used together in the  
6 same embodiment.

7 Is that correct, or could you talk about what the  
8 spec says about input device and control circuits?

9 MR. GRAVOIS: No, that's not correct. There is  
10 no indication in the specification that those are alternative  
11 embodiments which exclude that from each other. The claim  
12 language itself states it receives programming information  
13 from at least one of the input device and a control circuit of  
14 the amplifier.

15 Now, as you know, claims are supposed to be  
16 construed from the viewpoint of a person having ordinary skill  
17 in the art. A person having ordinary skill in the art would see  
18 the word "and" here and not interpret that to be "or."

19 Now, I'm on slide 21. Petitioner's argument is that  
20 Sudo discloses an external programmer with a CPU that  
21 receives programming information from an input device, keys  
22 on a keyboard. As you will note, they do not even address the  
23 phrase "and a control circuit of the amplifier."

24 Now, because they have not addressed all of the  
25 limitations of the claim, Patent Owner submits that they have

1 not shown by a preponderance of the evidence that the cited  
2 references show or suggest all claim elements.

3 JUDGE PERRY: Counsel, you have five minutes.

4 MR. GRAVOIS: Thank you. In addition, Patent  
5 Owner's expert tells us Sudo makes no mention of a  
6 microcomputer receiving information, especially programming  
7 information from the DSP. In Sudo the microcomputer merely  
8 transfers programming information to the DSP.

9 Are there any questions on this claim?

10 JUDGE PERRY: No.

11 MR. GRAVOIS: So let's move to claim 21. Claim  
12 21 recites: "Wherein said digital signal processor receives  
13 and stores a combination of at least two signal processing  
14 functions."

15 Now, you will note the claim explicitly states the  
16 phrase "a combination." It does not state wherein said digital  
17 signal processor receives and stores at least two signal  
18 processing functions.

19 Now, let me give you some context to this. So the  
20 '544 patent incorporates by reference the application that led  
21 to the '542 patent. And in that application it explains that  
22 sometimes it is desirable or even necessary to combine  
23 multiple signal processing functions.

24 Now, Bob Cordell, Patent Owner's expert, gave an  
25 example of two signal processing functions being combined.

1 He said that it may be desirable to combine a cross-over  
2 function with an equalizing function.

3 Now, you may ask, well, why does that matter?  
4 The reason is because, if you combine two functions, it may  
5 result in storage savings, reducing the amount of storage that  
6 is required to save that signal processing function.

7 So there is definitely a distinction between a  
8 combination of at least two signal processing functions and  
9 two separate signal processing functions.

10 Now, Petitioner's argument is that a person of  
11 ordinary skill in the art would have considered programming a  
12 DSP and an amplifier to perform at least two signal  
13 processing functions to have been obvious in view of  
14 Krokstad, but Petitioner does not even address the limitation  
15 "a combination."

16 So for that reason we submit that Petitioner has  
17 not shown by a preponderance of the evidence that this claim  
18 is rendered obvious.

19 JUDGE MOORE: Now, outside of the statement in  
20 the application that led to the '542, that combinations may be  
21 necessary, you said that your expert gave an example.

22 Does the application itself that you are relying on  
23 give examples or is this example just something that the  
24 expert has given?

1                   MR. GRAVOIS: That example -- the benefit is not  
2 disclosed in that application, but our expert did testify to that.

3                   So I am now on slide 26. Bob Cordell, Patent  
4 Owner's expert, testified there is no mention or suggestion of  
5 functions being combined to create a new and different  
6 combination of functions in the cited references.

7                   So, therefore, we submit that Petitioner has not  
8 shown by a preponderance of the evidence that this claim is  
9 rendered obvious.

10                  Now, claim 21 essentially is the same argument.  
11 Again, the claim recites a combination of at least two signal  
12 processing functions. And in their arguments, in the petition,  
13 they fail to consider the term a combination in the claim  
14 element, a combination of at least two signal processing  
15 functions.

16                  For the same reasons as I just discussed, we  
17 believe that Petitioner has not shown by a preponderance of  
18 the evidence that this claim is rendered obvious.

19                  Now, it just occurred to me, I recall when we were  
20 talking about the RS-232 argument being combined with  
21 Krokstad. I just want to point out that in Petitioner's reply  
22 they did not address their RS-232 argument.

23                  JUDGE PERRY: Okay. You are out of time. So  
24 please conclude. Please wrap it up.

1                   MR. GRAVOIS: That concludes my presentation.  
2     Thank you.

3                   JUDGE PERRY: Thank you.

4                   MR. KINSEL: Thank you. Grant Kinsel for  
5     Petitioner one last time. I will make a couple of quick points.

6                   First of all -- and this goes to something, Judge  
7     Perry, that you were talking about -- the art here has to be  
8     commensurate with the scope of the claims. And that is the  
9     largest defect I think with the Patent Owner's argument about  
10    this notion that you can't combine Sudo with Krokstad, et  
11    cetera.

12                  The claims themselves don't require any particular  
13    kind of configuration, either a removable connection or for  
14    the programmability of the DSP. The art that we have  
15    submitted is certainly commensurate with the scope of those  
16    claims.

17                  With respect to the question of claim 13, I would  
18    like to address that just briefly. That's the at least one of A  
19    and B question. As, Judge Moore, you point out, Superguide  
20    specifically says this is not a uniform rule. You have to apply  
21    it in light of the specification.

22                  Now, the specification specifically describes these  
23    embodiments in different language. So, for instance, at  
24    column 6, lines 41 through 45, there is a description of  
25    programming input that doesn't come from the control circuit,

1 but the amplifier. So the specification doesn't tie these two  
2 things together.

3 And, more importantly, if we construe this claim  
4 in the conjunctive, we are going to be writing the words "at  
5 least one of" out. And let me give you an example that I think  
6 may illustrate that.

7 Let's say I have a claim that says at least one  
8 patent litigator and one patent prosecutor must attend this  
9 hearing today. Okay. Now, if there is a lot of patent  
10 litigators and a bunch of patent prosecutors, then we can  
11 construe that claim as requiring both a patent litigator and a  
12 patent prosecutor because the "at least one of" applies to each  
13 class of individual.

14 Whereas here, in this claim, you have got only one  
15 item from each. If you construe it as conjunctive you write  
16 out at least. So let me give you the counter-example. At least  
17 one of Mr. Kinsel and Mr. Tullett have to appear for the  
18 hearing today.

19 Now, if we construe that in the conjunctive as  
20 requiring both Mr. Tullett and Mr. Kinsel, then we have  
21 written the words "at least one of" completely out of the  
22 claim. And that's why you can't construe claim 13 in the  
23 conjunctive. There is only one input device and one control  
24 circuit.

1           And so construing them in the conjunctive will  
2 write that claim phrase "at least one of" out. And so once that  
3 claim language is properly construed, we have shown that  
4 there is art, Sudo, Krokstad, et cetera, that shows getting  
5 signal processing information from an input device.

6           Claim 21, the combination limitation, there is no  
7 disclosure in the specification for this reading of combination  
8 that would be so unnatural. Patent Owner has described this  
9 reading of the word combination as somehow an amalgamation  
10 of two or more processing functions.

11           That's not the common and ordinary meaning of  
12 that word, at least in this context. The common and ordinary  
13 meaning of that word is to store a combination of multiple  
14 functions. And that's what the art shows. There is nothing in  
15 the specification that supports this amalgamation reading, and  
16 I think there was an admission to that effect.

17           And, finally, I did want to clarify the record about  
18 something. We kept hearing over and over again about how,  
19 you know, we have conceded that Sudo doesn't show a  
20 removable connection.

21           And I think this really goes to Judge Quinn's  
22 point, which is we have said that Sudo suggests a removable  
23 connection. And our expert has drawn a conclusion based on  
24 that.



1                   In answer to your question earlier, Judge Perry,  
2       where I said Sudo doesn't talk about that removable  
3       connection, that's all we were saying. I wasn't suggesting in  
4       some way that we had conceded the removable connection  
5       element from Sudo. It is just merely that Sudo doesn't  
6       expressly describe it. He doesn't. And, you know, that's just  
7       the way the record is. So I wanted to make sure that the  
8       record was clear on that point.

9                   And with that, I will wrap up, unless there are  
10      questions.

11                  JUDGE QUINN: I have a question. Assuming that  
12      we don't accept the inference drawn from Sudo that your  
13      expert has drawn, that you have a suggestion of a removable  
14      connection, how do we get to where we can apply KSR, where  
15      we are looking for the teachings, which I understand you are  
16      just taking the teaching of Krokstad with the RS-232  
17      connection or port or whatever you want to call it, and that  
18      teaching being teaching one of skill in the art that it teaches  
19      how to interface two devices, one computer and another one  
20      being the DSP.

21                  But in light of what the Patent Owner has raised  
22      regarding the technique, that technique of using an RS-232  
23      port, that's not a technique that would be used with Sudo.  
24      And so how could we say that that's a known technique that

1 could be applied in light of KSR unless we are also going  
2 through evidence that Sudo would need to be modified?

3 Can you clarify, which of the two are we looking  
4 at here?

5 MR. KINSEL: So if I understand the specific  
6 question, Sudo, the teaching that we are talking about here  
7 from Krokstad is the ability to use a removable connection.  
8 And that's what I meant earlier when I said that the art has to  
9 be commensurate with the scope of the claim. The claims  
10 teach or claim a removable connection. Now, we have got  
11 that in Krokstad.

12 We also have in Krokstad and in Sudo the ability  
13 to program the DSP with a removable computer, at least in  
14 Krokstad. There is a dispute over whether that separate  
15 computer is removable in Sudo. But we don't need to show  
16 under KSR that Sudo would be modified with Krokstad.

17 What we need to show is that one of skill in the  
18 art, of ordinary creativity, who is looking at his or her  
19 problem of do I connect, do I want to connect my stand-alone  
20 programmer to a DSP, would he or she look at this art and  
21 come up with the '544 patent? The answer to that is yes.

22 Again, the question isn't one of modification of  
23 Sudo. It is not one of modification of Krokstad. It is a  
24 question of is there teaching in the art for the claim

Cases IPR2014-00127, 00129, and 00131  
Patents 6,023,153, 5,652,542, and 5,652,544

1 limitations, which are generic and broad, and only cover  
2 things like a removable connection and a programmable DSP.

3 So have I answered your question specifically? If  
4 not, I would be happy to go on.

5 JUDGE QUINN: That's okay. We have got it.  
6 Thank you.

7 MR. KINSEL: Okay.

8 JUDGE PERRY: Thank you, counsel. That  
9 concludes the argument on 131, and all three cases are  
10 submitted. Thank you, all counsel, for their helpful  
11 arguments. We appreciate it. And we are off the record. We  
12 are adjourned.

13 (Whereupon, at 1:08 p.m., the hearing was  
14 adjourned.)

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Cases IPR2014-00127, 00129, and 00131  
Patents 6,023,153, 5,652,542, and 5,652,544

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