## In the Matter Of: SDI vs. BOSE IPR2013-00465 and IPR2013-00350**ANDREW LIPPMAN** March 10, 2014 800.211.DEPO (3376) EsquireSolutions.com

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

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SDI TECHNOLOGIES, INC.

Petitioner

vs.

BOSE CORPORATION Patent Owner

Case IPR2013-00465 Patent 8,364,295 B2

Cago IDP2012 00250

Case IPR2013-00350 Patent 8,401,682 B2

VIDEOTAPED DEPOSITION OF ANDREW B. LIPPMAN, Ph.D.

March 10, 2014

9:18 a.m.

Fish & Richardson P.C., One Marina Park Drive Boston, Massachusetts

Susan A. Romano, RMR, CRR, CSR #119393



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23	
24	



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1	ANDREW B. LIPPMAN, Ph.D.
2	March 10, 2014
3	PROCEEDINGS
4	
5	THE VIDEOGRAPHER: This is Media
6	No. 1 to the videotaped deposition of Andrew B.
7	Lippman Ph.D. in the matter of SDI Technologies,
8	Incorporated versus Bose Corporation being heard
9	before the United States Patent and Trademark Office
10	before the Patent Trial and Appeal Board. The case
11	number is IPR2013-00465 and IPR-2013-00350.
12	This deposition is being held at the law
13	offices of Fish & Richardson, One Marina Park Drive,
14	Boston, Massachusetts. Today's date is March 10,
15	2014. The time is 9:18 a.m. My name is Ara
16	Hollisian and I'm the videographer. The court
17	reporter is Susan Romano.
18	Counsel, will you please introduce
19	yourselves and affiliations, and the witness will be
20	sworn.
21	MR. HEBERT: My name is Mark
22	Hebert of Fish & Richardson representing Bose
23	Corporation. With me is Jolynn Lussier, also of
24	Fish & Richardson, also representing Bose



1	Corporation.
2	MR. MOORE: Aaron Moore of
3	Foley & Lardner representing the petitioner, SDI.
4	
5	ANDREW B. LIPPMAN, Ph.D., the deponent,
6	having been satisfactorily identified and duly sworn
7	by the Notary Public, was examined and testified as
8	follows:
9	EXAMINATION
10	BY MR. HEBERT:
11	Q. Good morning, Doctor Lippman. How are
12	you?
13	A. Good morning.
14	Q. You're not under any medication that
15	would affect your ability to understand my questions
16	or give full and truthful answers at this
17	deposition, correct?
18	A. That's correct.
19	Q. Okay. You've probably been deposed a
20	number of times before, right?
21	A. Yes.
22	Q. About how many, would you say?
23	A. Oh, God. I don't know. On the order of
24	ten. Perhaps more.



1 | analog mode, correct?

- A. Okay. I apologize. Yeah.
- Q. Do you know why there's no button on the remote relating to any of the digital modes?

MR. MOORE: Objection. Vague.

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- A. I think if you were using it in digital modes, they would simply take over.
- Q. First of all, to address Mr. Moore's objection, you would agree with me that there is no button shown on page 7 to -- of the remote to put it into digital mode, correct?
- A. I don't see a button that's so labeled, yeah.
- Q. Okay. And do you know why there's no button to put it into digital mode but there is a button for the Pro Logic analog mode?

18 MR. MOORE: Objection. Speculation.

- 19 | Foundation.
  - A. I think it would be hard for me to know why they had done that. I never asked them.
  - Q. When you were reviewing the manual for the ADA310W, Exhibit 1011, did you notice that there was a button for one of the analog modes but not for



1	A. Nothing.
2	Q. Did you save them? Did you download
3	them?
4	A. No.
5	Q. You just clicked away?
6	A. Yes.
7	Q. Okay. Did you search for any other Altec
8	Lansing products in connection with this Internet
9	research that you did?
10	A. Not as I recall, no.
11	Q. Just the ADA310W?
12	A. Yes.
13	Q. Did you search for the ADA310W without
14	the W?
15	A. Gee, I don't know. Might have. I might
16	not have typed in the W some time, but I don't think
17	I deliberately distinguished it and searched it as a
18	separate thing.
19	Q. Did you search for the ADA104?
20	A. No.
21	Q. If you refer to page 7, the sideways page
22	describing the remote control, you see it talks
23	about turning the ADA104 unit on and off, right?



Α.

Yes.

What is the ADA104 unit? Ο. 1 I don't know. 2 Α. When you reviewed Exhibit 1011, did you 3 Ο. notice that it -- that the sideways page talked 4 about turning the ADA104 unit on or off? 5 Α. Yes. 6 7 Q. Did you inquire as to what the ADA104 unit was? 8 Α. No. 9 10 Did you attach any significance to that 11 portion of the document referring to a different 12 product? Α. 13 Yes. 14 Ο. And what significance did you attach to that? 15 I wanted to verify that the A -- 310W 16 Α. 17 indeed had a remote control and an IR receiver. I looked for it on the Internet to see. 18 And what did you learn? 19 Ο. It did. 20 Α. 21 Okay. Ο. 22 Α. I'm comfortable that it did, and I'm --23 Q. Did you -- you didn't print out any of



those pages, though.

1	Q. When you say "what we have from the
2	Wayback Machine," you're referring to Exhibit 1010?
3	A. Yes.
4	Q. Okay. That sentence that you just
5	referred to in paragraph 40 of your declaration,
6	which says the IRMan system provided a remote
7	control and an IR receiver that plugged into a
8	computer to control software running on the computer
9	and, in particular, to control the WinAmp software.
10	That was the sentence you just referred
11	to, right?
12	A. Yes.
13	Q. Okay. Who wrote that sentence?
14	A. Me.
15	Q. What was your basis for saying that?
16	A. What I knew about WinAmp, what I knew
17	about IRMan.
18	Q. Where did you learn what you knew about
19	IRMan?
20	A. Where did I learn that? You mean like
21	from what references?
22	Q. Yes. Sure. From what references, if
23	any?



A. I know it from at least this

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1 (indicating), but I might have also read about it in other books some time ago.

- O. What other books?
- A. I'm not sure, but -- I'm not sure.
- Q. Whatever these other books are, they weren't submitted as exhibits to the IPR, right?
  - A. To this case?
  - Q. Yes.
    - A. Correct.
- 10 Q. And you don't know what those books are.
- 11 A. Gee, I -- I haven't thought about it.
- Q. Any other references that you -- that educated you about IRMan?
  - A. I don't think so.
- Q. Can you describe for me the remote control that came with IRMan?
- A. IRMan worked with a variety of remote controls, including ones you had.
  - Q. Okay. Did it also come with a remote control?
    - A. I'm not sure.
- Q. You say, in the sentence we just quoted, the IRMan system provided a remote control.
  - A. Yes.



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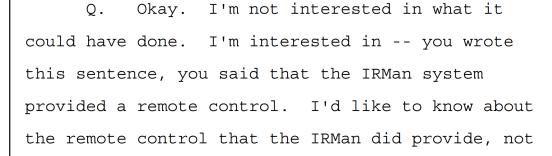
24

stereo.

Ο.

describe the remote control that came with the 2 3 IRMan. Α. It could be any --4 MR. MOORE: Objection. 5 -- remote control. Α. 6 7 It could be any remote control that came Q. with the IRMan? 8 9 MR. MOORE: Objection. 10 It could be ones that didn't come 11 with -- with IRMan. 12 Q. Okay. You wrote that the IRMan system 13 provided a remote control. 14 Α. Right. 15 What was the remote control that the Ο. 16 IRMan system provided? 17 It could have provided the remote

Okay. I'd like to know if you could



control, as it says here, from your TV, VCR, CD, or



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could have provided.

- A. But it --
- MR. MOORE: Objection. Foundation.
- 4 | It mischaracterizes the document.
  - A. That's not what the sentence says. What the sentence says is, the system provides a remote control, not that the package of goods shipped with an IRMan does. The system using the IRMan has a remote control.
  - Q. Let me ask this, then: Did the system that was packaged as the IRMan product include a remote control?
  - A. Gee, I'm not sure. I don't understand why that would make any difference to me.
  - Q. Well, you wrote that the system provided a remote control, and I'd like to know whether the system provided a remote control.
  - A. Well, the system did provided a remote control, the remote control that you would use with your TV, PC, VCR, or whatever. Clearly the system was intended to provide a remote control. That's not in question, I hope.
  - Q. It was intended to provide a remote control even if a remote control was not included



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1 with the product? Is that your testimony?

MR. MOORE: Objection. Vague.

Mischaracterizes the testimony.

- A. It was intended to provide the functionality of remote control, and you could use your own remote control.
- Q. Did the IRMan system come with the product? Did the IRMan product come with an IR receiver?
  - A. It -- yes.
- Q. Okay. So when you wrote the IRMan system provided an IR receiver, you were referring to a component of the product as sold, right?
- A. Where did -- I'm sorry. Point me to the sentence you're asking me.
- Q. The same sentence we've been on for about 15 minutes?
- A. The same sentence says -- it's -- it refers to the IRMan system, and the IRMan system provided a remote control capability. I don't think that the intent of that sentence was to quibble about which packages were in which boxes. The intent of the sentence was to say that the system provided a remote control capability.



Q. The IRMan product that was sold, did it come with an IR receiver?

- A. To the best of my knowledge, it did.
- Q. When you wrote the IRMan system provided an IR receiver, were you referring to the -- a component that was included in the IRMan package?

  MR. MOORE: Objection. Form.
- A. I'm referring to the system, and the system encompasses a remote control and an IR receiver.
- Q. So the system encompasses a remote control that was not sold with the IRMan package, right?
- A. I -- I -- it's irrelevant to me whether it was sold with the package or whether you had it. The point is, is the system provided that functionality.
- Q. Is it irrelevant to you whether the system provided an IR receiver?
- A. I -- we may be getting into an English battle here. The system encompassed an IR receiver and a remote control. So it's not irrelevant that the system had those elements in it. The question of whether the IRMan product had them in the box or



not is not the relevant point. That's all.

- Q. So it's not relevant whether the IRMan box had an IR receiver, correct?
- A. Again, you're twisting my words. The sentence says what the sentence says. And that is that the system provided those capabilities.

I stand by the fact that the system provided those capabilities. I have no particular argument with how they were marketed or packaged.

- Q. Okay. When you used the word "provided" in this sentence that you personally wrote, you weren't referring to what came in the IRMan package, correct?
- A. I'm referring to what the sentence says, which is that that is what the system provided.
- Q. Without regard to what was in the IRMan package, correct?
- A. I don't either regard it or don't regard it. It -- it is not what the sentence is about. The sentence is describing the capability provided by the system.
- Q. It's true, isn't it, that the IRMan product did not include a remote control? Right?
  - A. I -- I didn't dig deeply as to whether it



1 | did or didn't.

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- Q. Do you know whether the IRMan product included a remote control?
  - A. I don't think I would bet my house on it.
    - O. As to whether it did or did not?
  - A. Right.
- Q. Okay. Do you know whether the IRMan product included a remote control?
  - A. I'm not sure.
- Q. Does Exhibit 1010 say that it doesn't include a remote control?
- A. Well, if it does, then I take its word
  for it. After all, it came from the Wayback
  Machine.
- Where does it say that?
- Q. Well, do you see where it says on the page -- I'll refer to the Bates numbers at the bottom.
- 19 A. Sure.
- Q. -- page 1, that it's been tested with
  over 40 different brands of remotes? They all work?
  - A. Yes.
- Q. Do you see where it talks about on page 2 that's what shipped is the IRMan infrared receiver?



- Α. I'm sorry. Where are we? 1 2 0. Bates number page 2. 3 Α. I am looking at page --Ο. At the top. 4 5 Α. Yeah. It doesn't list a remote control, right? Q. 6 7 Α. It doesn't list a transmitter. Pardon me? 8 0. It doesn't list a transmitter, I think is 9 Α. 10 what you're asking. 11 Ο. I asked if it listed a remote No. 12 control. Okay. It doesn't. 13 Α. 14 Q. And on page 4, do you see where it 15 talks about the remotes that IRMan supports? 16 Α. In the FAQ, which remotes, I see that. 17 Ο. And it doesn't talk about IRMan remotes,
- 19 A. It does not.

right?

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- Q. Okay. So as described in Exhibit 1010, the IRMan was intended to work with a remote control that was not included with the IRMan product, right?
  - A. Probably not.
    - Q. We have a double negative problem.



You'll agree with me, won't you, that as 1 described in Exhibit 1010 the IRMan product was --2 3 did not include a remote control as shipped? I -- I can't -- I wouldn't bet my house 4 on that, I think is what I said. 5 There's no indication in Exhibit 1010 Ο. 6 7 that a remote was included with the product, right? There is no indication that I can see Α. 8 that a remote control device was included with the 9 10 product. 11 And you have no other references you can Ο. 12 point to that indicate a remote control was included 13 with the IRMan product, right? 14 Α. Right. 15 Q. Okay. 16 MR. HEBERT: Do you want to break for 17 lunch? 18 THE DEPONENT: Sure. The time now is 19 THE VIDEOGRAPHER: End of DVD No. 2. Off the record. 20 12:07 p.m. 21 (Off the record at 12:07 p.m.) 22 (On the record at 1:01 p.m.) 2.3 THE VIDEOGRAPHER: This is the 24 beginning of DVD No. 3 in the deposition of



- that we had some testimony about earlier today. All
  right?
  - A. (Deponent nodded.) Yes.
  - Q. Okay.

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- 5 A. Was that a question?
- 6 Q. Yes.
- 7 A. Oh, okay. Yes.
  - Q. The IRMan came with some software, right?
- 9 A. I believe so.
- Q. Okay. And you also testified earlier today about the Altec Lansing ADA310W speaker system, right?
- 13 A. Yes.
- Q. Okay. And as we saw, you could control all of the functions of that speaker system from your computer, correct?
- 17 A. You could.
- Q. All right. Would it be possible for one of ordinary skill in the art to modify the IRMan software to control the Altec Lansing ADA310W speaker?
- A. Would it be possible to modify the IRMan software so that it too could control the Altec speakers.



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- 1 Q. Yes.
  - A. Assuming that you had them and they were connected to your computer and so on? I haven't given that matter great thought, but I think so.
  - Q. Okay. It's -- it's correct and we can review it again, but I think we already established this, that the Altec Lansing ADA310W speaker system came with a USB input, right?
    - A. Well, it came with a USB connection.
- Q. And you could connect it to your computer with a USB -- with a USB cable, right?
  - A. Assuming you have a USB, but that was pretty common.
  - Q. Okay. So let's assume that you have a USB.
  - A. Yeah.
- Q. Okay. And you could -- and you could control the Altec Lansing speaker from your computer, right?
  - A. Yes, you could.
  - Q. Okay. So there's no reason that you couldn't use the IRMan to control the Altec Lansing speaker as well, right?
    - A. That's correct.



1	Q. And if you did that, you could use a
2	single remote control to control the WinAmp software
3	running on the PC as well as the Altec Lansing
4	speaker, right?
5	A. It's reasonable to say that.
6	Q. Okay. When you were working on your
7	declaration, did you consider that possible
8	combination?
9	A. Did I consider that combination as being
10	feasible and reasonable?
11	Q. Yes.
12	A. I don't think I commented on it.
13	Q. I know you didn't comment on it. I'm
14	asking if you considered it.
15	A. In my mind?
16	Q. Yes. In your mind.
17	A. As being something one could do?
18	Q. Yes.
19	A. I might have.
20	Q. Do you know why you didn't write about
21	it, then?
22	A. Because it doesn't bear on the case in
2.3	point.



Q.

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Why doesn't it bear on the case in point?

- Because the case in point has the control Α. 1 system going the other way. 2 3 "The case in point" meaning the patents in suit, right? 4 Α. 5 Yes. Okay. So if you combined it the way I Ο. 6 7 just described, that wouldn't meet the claims of the patents in suit, right? 8 Well, it's not relevant to what I'm 9 10 declaring. 11 And what you're declaring is a way to Ο. 12 render the claims the patents are invalid, right? MR. MOORE: Objection. 13 Mischaracterizes his testimony. Argumentative. 14 15 Α. Well, I'm showing a combination that
  - Q. Okay. And there's another way to combine them -- at least one other way to combine them that would not render the claims invalid, correct?

would render them -- could render them invalid,

A. Well, that's not relevant to the report.

There's many things one could do, but -- I mean, you have a computer system. You have speakers. You have controls. You can do all sorts of things.



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yeah.

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They're not relevant to the report.

- Q. And why isn't that relevant to the report?
- A. Why would it be relevant to the report?

  It doesn't bear on the combination that is

  relevant -- that's shown in the patent.
  - Q. It's not relevant to the report because it would invalidate the claims of the patents, right?
- MR. MOORE: Objection.
- 11 | Argumentative.
- A. Well, the report is a report on the validity of the claims or invalidity of the claims.

  It's not a report on what the vagaries of design
- 15 | are.

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- Q. Okay. What is the combination that you came up with in your report to meet the goals of the report?
- A. We're talking about the ADA110 -- now you've got me doing it -- ADA310W.
  - Q. I think you combined that with IRMan, right?
- A. I believe so. Let's just check. But I'm not sure that that's true. (Deponent viewing



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Okay. In paragraph 41, I said I'm of the opinion that it would have been obvious to combine the remote control and the IR receiver hardware in order to reduce duplication and clutter.

- Q. Okay. And if you used the remote control with the IRMan to control both the WinAmp software running on the PC and the Altec Lansing speakers, as I suggested, you would only have one remote control, right?
  - A. One could do it that way.
- Q. Okay. And if you did it that way, you would only have one remote control, correct?
  - A. Right.
- Q. Okay. And that would reduce duplication and clutter, wouldn't it?
- 17 A. It would.
  - Q. Okay. Now, the combination you proposed would have the IR receiver positioned in the speaker, correct?
    - A. Yes.
- Q. Okay. If you could turn to the Altec Lansing ADA310W brochure again, please,
- 24 | Exhibit 1011.



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1 | the USB controller and the processor, right?

- A. Again, hard to say with absolute certainty. But depending on what they used as a USB chip, that's unlikely.
  - Q. But you don't know that.
  - A. Right.
- Q. Okay. You might have to modify the software and the processor to add the functionality of sending the data back to the computer, right?
  - A. You might.
- Q. Is it your belief -- well, do you have any knowledge as to whether the Altec Lansing remote was built with a standard set of components?
  - A. Do I have any direct knowledge?
  - O. Yes.
    - A. No.
- 17 Q. Is it your belief that it was?
- A. It's -- it would be reasonable engineering practice to do that.
  - Q. Okay. If it was, would you expect that the Altec Lansing remote would work with the IRMan?
    - A. It might.
  - Q. Okay. I'd like to turn to -- and maybe we've been looking at it -- paragraph 41 of your



declaration. Is that in front of you?

- A. It is.
- Q. Okay. Okay. And in this paragraph you're talking about one remote would control both the speaker and the computer and using the IR receiver positioned in the speaker, right?
- A. What I said was that it would be obvious to combine the remote and the IR receiver in order to reduce duplication so that one remote would control the speaker, and the computers are using the IR server positioned in the speaker, yes.
- Q. Okay. It would be possible also, wouldn't it, to use one remote to control both the speaker and the computer using the IR receiver and the IRMan?
- A. I think we already went -
  MR. MOORE: Objection. Asked and
  answered.
  - A. I think we already went through this.
- Q. Okay. And you agreed that was possible, right?
  - A. I think I did, yeah.
- Q. Okay. Now, your next sentence says "I also understand that Paul Beckmann, one of the



1 inventors of the '682 patent, testified in a 2 deposition in the earlier litigation that it would have been obvious to make that combination." 3 Do you see that? 4 Yes, I see that. 5 Α. Ο. Did you write that sentence? 6 Α. Yes. Okay. And what did you base that on? 8 Ο. His deposition. 9 Α. 10 Ο. You read his deposition? I believe that's included as one of the 11 Α. 12 exhibits. It is. 13 Ο. 14 Α. Yeah. 15 You read it? Ο. I read what's included as the exhibits. 16 Α. And is it your testimony that he said it 17 Ο. was obvious to make the combination with the IR 18 19 receiver positioned in the speaker? 20 MR. MOORE: Objection. Relevance. I'd have to look at his deposition to 21 Α. 22 validate that. However, it's also true that in the 23 Bose response, Bose says that it's desirable to do



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that.

1	Q. So I'm asking you about what you wrote in
2	paragraph 41
3	A. I understand. And that's
4	Q which is regarding
5	A echoed indeed by both Beckmann and by
6	Bose.
7	Q. All right.
8	A. While you're looking, can I take 30
9	seconds to go grab that Diet Coke?
10	MR. HEBERT: Oh, yeah.
11	THE VIDEOGRAPHER: The time now is
12	MR. HEBERT: No. No. We can stay
13	on.
14	It's okay, right?
15	THE VIDEOGRAPHER: Oh, yeah.
16	(Exhibit No. 2012, Excerpt from
17	Beckmann Deposition, marked for identification.)
18	BY MR. HEBERT:
19	Q. I didn't mean to mark that, but I marked
20	it anyway.
21	So, Doctor, I've handed you what I've
22	marked as Bose Exhibit 2012. It's also SDI
23	Exhibit 1014. Do you see that? It's the same
24	document.



- A. Yes.

  Q. Okay. And this is the excerpt from the

  Beckmann deposition that you're referring to, isn't
- 5 A. Yeah.

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it?

- Q. Okay.
- 7 A. I think.
  - Q. And I'd like to direct your attention to page 229, lines 4 through 7. Do you see that?
- 10 A. Yes.
- Q. Okay. And so the question there is
  "Would it be obvious to make a system -- once you
  did that, would it be obvious to consider making a
  system where there's only one remote?" And the
  answer is "Yes," right?
  - A. Yes.
- Q. And he doesn't say here where the IR receiver would be, does he?
- A. As an answer to that question, that's correct.
- Q. Okay. What is it -- is this what you refer to in your -- in your declaration?
- A. Well, keep reading.
- Q. Show me what you refer to in your



## declaration?

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- A. I'm referring to the entirety of it. Can
  - Q. There's no place where he says it would be obvious to make the combination using the IR receiver positioned in the speaker, does he?
- 7 MR. MOORE: Objection. 8 Argumentative. Mischaracterizes the document.
- 9 | Irrelevant.
- 10 A. Well, in 231 he's asked "And if you put
  11 it in the loudspeaker, then it would communicate it
  12 to the computer.
  - "Then you would have to" -- his answer was "Then you would have to have more intelligence in the loudspeaker to know, is this a command that I have to interpret." To paraphrase, versus pass on.
  - Okay. But there's no --
- 18 Q. Whereabouts are you, please?
- 19 A. Now I'm on page 232, which is the answer.
  - Q. Okay.
  - A. Okay. To repeat, "Then you would have to more intelligence in the loudspeaker to know, is this a command that I have to interpret," versus pass on. That's my words.



You added "versus pass on." Ο. 1 2 Α. Yes. 3 Ο. Okay. Yes. As we discussed before. Α. 4 5 Q. Okay. So the question is, "Okay. But there's Α. 6 7 no surprise about that, right? I mean, you'd know that you would need to do that, right? 8 "Right. You would know that." 9 10 So one could do it either way. 11 He was testifying that you could do it Q. 12 that way. 13 Α. Yeah. 14 Ο. Okay. 15 So one could do it either way. Now, as I said before, in the Bose submission, Bose submitted 16 reasons why it's advantageous to do it in the 17 18 speaker versus do it in the computer. 19 Ο. So when you wrote paragraph 41, it Okay. 20 was based on the testimony you just referred to on 21 page 232 of Exhibit Bose 2012? 22 MR. MOORE: Objection. 23 Mischaracterizes the testimony. Irrelevant.



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I didn't say that. It was based on the

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1 | entirety of that discussion.

- O. From where to where?
- A. The entire exhibit was given to me from the beginning to the end.
  - Q. The entire exhibit. Okay.

I'd like to refer to paragraph 42 of your declaration. You're talking about having a remote that transmits signals for selecting the music source, right?

- A. Okay.
- 11 Q. Do you see that?
- 12 A. Um-hum.
- Q. Okay. You have no evidence that the remote for the Altec Lansing ADA310W could select the music source, right?
  - A. I have no evidence that the remote, as delivered with the ADA310W, could select the music source.
  - Q. Right.
    - A. Okay. Yes.
  - Q. Okay. And you say that this feature is present in the Sony music system, right?
  - A. Yes.
- Q. But the remote in the Sony music system



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- Q. Did you determine what the music storage space was in the NOMAD?
  - A. I'm not sure of the exact answer, but I think the NOMAD accepted -- had 32 megabytes of storage and accepted a storage card with another 32.
  - Q. I can help you -- I can help you. If you turn to page 31, under "Memory capacity."
  - A. Whose -- whose numbering are we using here?
  - Q. Oh, or it's 000037.
  - A. Yeah. Yeah. Right. I've turned there.
- 12 Q. Okay. Do you see "Memory capacity"?
- 13 A. Yes.
  - Q. Okay. Does that help you with what the memory capacity was?
  - A. It confirms what I just said to you, I think, 32 megabytes plus 32 megabytes on a card.
  - Q. So internal 32 megabytes plus 32 removable, right?
    - A. Yes.
      - Q. Okay. 64 total. 32 plus 32?
  - A. I understand. I'm just trying to decide whether it could actually be more than that if larger than 32 megabyte cards became available, and



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1 | probably it could.

- Q. Okay. This doesn't say anything about larger cards, does it?
- A. Well, you asked what the capacity of it was, not what this said.
  - Q. Okay.
  - A. If you want me to tell you what this said, this says 32 plus 32.
    - Q. And that's 64.
- 10 A. And that's 64.
- 11 Q. Okay.
- 12 A. We're in agreement there, but that is not 13 the only card you could put in there.
- Q. Is there anything in the NOMAD manual,
  Exhibit 1005, that discusses larger cards?
  - A. No.
- Q. And 64 megabytes... I'm handing you an article that -- strike that part of the question -- or the start of it.
- I'm handing you an article marked as
- 21 | Exhibit -- SDI Exhibit 1006 entitled "New MP3
- 22 | Players: Music to Your Ears." Do you see that?
- 23 A. Yes.
- Q. And you had this article as well, right?



Α. Yes. 1 2 Ο. And you reviewed this? 3 Α. Yes. Okay. And at the end of the third Ο. 4 paragraph it says "The NOMAD ships with 64 megabytes 5 of RAM, 32 megabytes built in and another 32 6 megabytes in an included smart card. That's enough 7 for about an hour of MP3 music compressed at an 8 optimal 128 kbps." Right? 9 10 Α. Yes. 11 Did I read that correctly? Q. 12 Α. You did. 13 Okay. Is that your understanding of the Ο. 14 music capacity of NOMAD? 15 Α. Yes. Okay. So it's about an hour. 16 Ο. 17 Α. Yeah. At 128k. 18 Okay. Do you know what the storage Ο. 19 capacity of the mini discs in the Sony MiniDisc recorder was? 20 21 Oh, I'm not sure. I think it said Α.



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no.

looked that up independently. But not definitively,

something about that earlier. I might have

(Exhibit No. 2013, Sony Portable 1 2 MiniDisc Recorder Manual for the MZ-30, marked for identification.) 3 I'm going to get a sticker now. Α. 4 It makes you happy, doesn't it? 5 Q. Α. (Deponent nodded.) 6 7 So I'm handing you what's been marked as Q. Bose Exhibit 2013. It's a Sony Portable MiniDisc 8 Recorder manual for the MZ-30. Do you have that? 9 10 Α. Thank you. 11 And you've seen that document before, Ο. 12 right, Doctor? 13 Α. I'm not sure. Prob -- excuse me. I'm 14 not sure. Probably. 15 Okay. I'll represent that this was Q. 16 attached as an exhibit to your expert report in the prior case, if that helps. 17 18 That helps. Α. 19 Okay. And if you care to turn to Ο. 20 page 33, you may not be able to see the page number, 21 but it's the page adjacent to page 32. It says 22 "Specifications" at the top. 2.3 Α. Oh, I see. Yes.



Ο.

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See this is --

1 Α. Yes. 2 Ο. -- two pages per --3 Α. Yeah. Yeah. And this is the way it was provided to Q. 4 5 us. Α. Yes. 6 7 Q. Okay. And so you see the -- under "Recording and playback time. Maximum 74 minutes"? 8 9 Α. I'm sorry. So look under "Specifications" in the 10 Ο. first column. 11 12 Α. Right. 13 Under "Recording and playback time" --Ο. 14 Α. Yes. 15 -- and it says "Maximum 74 minutes." Q. 16 Α. Stereo, yes. Right. And 148 minutes mono. 17 Q. 18 Α. That's surprisingly twice as long. 19 Okay. 0. 20 Α. Yes. 21 All right. And it's true that 74 is a Ο. 22 greater number than 60, right? 23 Α. That sounds true.



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Okay. So the Sony mini discs actually

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expectation that storage devices would grow. And it's fair to have had that expectation in your mind at the time that we're talking about. That's all.

- Q. Okay. But with respect to the particular references that we have in front of us, the Sony Portable MiniDisc Recorder, MZ-R30, which could store up to 74 minutes, and the Creative NOMAD player, which could store up to 60 minutes, at that point at least with respect to those references, the Sony could store more, right?
  - MR. MOORE: Objection. Foundation.
- A. Well, according to the specifications -even the specifications don't exactly say that. I
  quess that's what's partly troubling me.

Remember, I said that it stored an hour of music in its 64 megabyte configuration at 128k. You could also reasonably do MP3s at 64k, which would double that. And that's why the specification says add 128k.

- Q. And you could also store music on the Sony in mono, right?
- A. And you could store music on the Sony in mono, yeah.
  - Q. Okay.



Q. No. 1 2 Α. And this (indicating)? That's the Sony 3 one. Ο. You'll want to keep out, probably, 4 Creative and Sony. 5 Α. Okay. 6 7 We're not done with them yet. Q. Okay. 8 Α. 9 THE DEPONENT: If we're changing 10 gears, can I have two minutes for a quick bathroom 11 break? 12 MR. HEBERT: Please. 13 Let's go off. THE VIDEOGRAPHER: The time is 4:30 14 End of DVD 4. Off the record. 15 p.m. 16 (Off the record at 4:30 p.m.) (On the record at 4:37 p.m.) 17 THE VIDEOGRAPHER: The time now is 18 Beginning of DVD No. 5 in the deposition 19 4:37 p.m. 20 of Andrew B. Lippman, Ph.D. On the record. 21 (Exhibit No. 2014, Decision, marked for identification.) 22 23 BY MR. HEBERT: Doctor Lippman, I handed you what should 24 Ο.



1 be the decision from the PTAB in the case involving 2 the '682 patent marked as Bose Exhibit 2014. Do you 3 have that? Α. I do. 4 5 Q. Okay. Α. PTAB is a new one on me. 6 7 I apologize for that. That's the Q. abbreviation we use for Patent Trial and Appeal 8 Board. Okay? 9 10 Α. Thank you. 11 Q. Sort of the name of the court. Okay? 12 If you could turn to page 12, please. 13 Are you there? I'm there. 14 Α. 15 Okay. And if you could direct your Q. 16 attention to the first full paragraph above the 17 heading. Okay? It starts "Taken together"? Do you see that? 18

- 19 A. Yes.
- Q. Okay. And you see that the board, or
  PTAB, adopted the construction that the network
  means "an interactive computer network such as the
  Internet," right?
- 24 A. Yes.



Ο. I read that correctly, right? 1 2 Α. Looked good to me. Sounded good to me. 3 Ο. Now, as you were rendering your opinion as set forth in your declaration -- and I can refer 4 you to paragraph 28. Are you there? 5 Α. Yes. 6 7 Q. Okay. -- you were applying a different 8 construction of the term "network," right? 9 10 And the broadest reasonable construction of the term "network" included radio network. 11 12 Q. Okay. Is that something counsel for SDI 13 asked you to assume? 14 Α. I'm not sure I can recall offhand the 15 genesis of it. As to where that came from? 16 Ο. 17 Α. Right. 18 Okay. In any event, you see that the Ο. board has disagreed with that and said that the term 19 "network" is construed to mean an interactive 20 21 computer network such as the Internet, right? 22 Α. Yes. 23 Ο. Okav. Under that construction of the



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term "network," the Creative NOMAD MP3 player cannot

1 connect to the network, right? MR. MOORE: Objection. Vaque. 2 3 Mischaracterizes the report. Speculation. Relevance. 4 In any case -- does that mean I'm 5 Α. supposed to answer it. 6 7 Q. Yes. THE DEPONENT: Pardon? 8 MR. MOORE: Yes. Please answer. 9 10 I don't think the Creative could directly 11 connect to the Internet. 12 Q. Okay. If we could stay in your 13 declaration and go to paragraph 29, please. Ah, 14 next paragraph. 15 In that paragraph you comment on the quality of various D-to-A converters. Do you see 16 17 that? 18 MR. MOORE: Objection. 19 Mischaracterizes the paragraph. 20 Α. There is a comment that you could use a 21 higher quality D-to-A converter in the speaker. 22 could. 23 Q. Okay. What did you know about the D-to-A



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converter used in the Creative NOMAD?

1	Q. Okay. There's metadata that's stored in
2	music files, right?
3	A. There's metadata that can be stored in
4	music files.
5	Q. Some music files have strike that.
6	You explained to me that all music files
7	have at least some minimal metadata, right, bit
8	rates and such?
9	A. Yes.
10	Q. Beyond that, some music files have
11	additional metadata such as genre, artist, album,
12	composer, et cetera, right?
13	A. Yes.
14	Q. And those music files can have the
15	additional metadata located actually within the
16	music file, right?
17	A. Yes.
18	MR. MOORE: Objection. Vague.
19	BY MR. HEBERT:
20	Q. And there are other situations where
21	there can be metadata that relates in some way to a
22	music file that is stored someplace other than in



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the music file, right?

That can happen too.

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- Q. Okay. And that's actually what you described on page 169 of your deposition, right?
  - A. You mean I was consistent.
  - O. Correct?
- A. Okay. You just said that as if it were true. I didn't realize it was a question.
- Q. It's -- I think it's true. It's a question, and you can confirm it.
- A. At times "it," which is to say the metadata -- and just to be clear, we mean the descriptive data, not the technical metadata associated with decoding the file.
  - Q. I appreciate that, yes.
- A. "It," referring to that metadata, may be embedded in the file. Very often, it will be extracted for other manipulations. So the metadata or descriptive information may or may not be in the music file at different times in the use or distribution of that music file. Is that enough?
  - Q. That's still correct, right?
  - A. I think so, yeah.
- Q. Okay. And if we look at claim 16, which is -- which refers to the second type of metadata included in the music files, it's referring to the



1 take guidance on that. So I didn't concoct and --2 or create an interpretation of that. 3 Okay. The three claims we looked at, claim 12, 16, and 62, all refer to metadata being 4 included in the music file, right? 5 Α. 6 Okay. 7 That's correct, right? Q. They use the word. Α. 8 Okay. And for each of those we're 9 Ο. 10 talking about the descriptive metadata, not the technical metadata, right? 11 12 Α. Yes. 13 Ο. Okay. Now, you reviewed the Looney 14 patent in connection with your declaration, right? 15 Α. Yes. 16 0. Okay. 17 Α. Yes. 18 Have you ever met Mr. Looney? Q. Not to my knowledge. 19 Α. 20 Okay. Dale McMullin? Q. 21 Doesn't ring a bell. Α. 22 Q. Joseph Pasciuto?



Α.

Q.

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I don't believe so.

Edward Doyle?

Α. Doesn't ring a bell. 1 2 Ο. You've never done any work for the 3 Looney -- for Looney Productions, LLC of Lexington, Mass., right? 4 Α. 5 No. Consulting or otherwise? Ο. 6 7 Α. No. This is Exhibit SDI 1013. It's the Ο. 8 Looney patent. 9 10 You reviewed this patent in connection with your report, right? 11 12 Α. Yes. Okay. The Looney patent does not use 13 Ο. 14 descriptive metadata that's included in the music files, right? 15 16 MR. MOORE: Objection. Legal conclusion. 17 I'm not sure exactly where he says that 18 he does or he doesn't. Let me look in my report. 19 20 You'll notice in paragraph 47 you talk Q. 21 about the Looney patent, if that helps. 22 Α. (Deponent viewing document.)



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not use descriptive metadata that's included in the

Okay. You agree the Looney patent does

1	music files?
2	A. Oh, I'm sorry. There was a question. I
3	was saying okay to say to mean that I had
4	finished glancing at my report.
5	Q. That's okay.
6	A. I'm sorry. I didn't realize there was a
7	question pending.
8	Q. So would you agree with me that the
9	Looney patent does not use descriptive metadata
10	that's included in the music files?
11	MR. MOORE: Objection. Legal
12	conclusion.
13	A. I'm not sure where Looney says where it
14	is or where it has to be.
15	Q. In paragraph
16	A. But it's provided by the service
17	provider.
18	Q. In paragraph 47 of your declaration, if
19	that helps, you refer to four passages in Looney.
20	Do you see that?
21	A. Yeah.
22	Q. Okay.



Α.

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it's a long patent. Fortunately, most of it is not

That's a long patent. Excuse me. God,

particularly important.

- Q. I agree with that, although it's quite interesting.
  - A. Okay. I'm sorry. So what would you -- I see the places where I refer to Looney. What would you like me to do with them?
  - Q. I'd like you to confirm that the Looney patent does not use descriptive metadata that's included in the music files.
  - MR. MOORE: Objection. Legal conclusion.
  - A. I'm not sure I recall where he says whether it is or whether it isn't, because I didn't think that it made more than a minor difference in the operation of organizing music by metadata as to whether the data was delivered with the music file or delivered by a different path.
  - You're looking at me like I'm supposed to say more.
  - Q. Yeah. I'm looking for an answer to my question.
- A. Maybe that's the best answer I can give you.
  - Q. So you don't know.



1	A. I'm not willing to admit to an assertion
2	that I can't verify.
3	(Mr. Hebert and Ms. Lussier
4	conferred.)
5	A. Again you're looking at me.
6	Q. You were reading through Looney, I think.
7	A. I was waiting for you guys to finish your
8	conference.
9	Q. Yeah. Okay. So can you now confirm for
10	me that the Looney patent does not use descriptive
11	metadata that's included in the music file?
12	MR. MOORE: Objection. Legal
13	conclusion.
14	A. I I don't think that it precludes it.
15	It specifically talks some about providing it in a
16	database.
17	Q. Okay. It talks about the metadata in a
18	database, correct?
19	A. It does that.
20	Q. It doesn't anywhere talk about the
21	metadata in the music files themselves, does it?
22	A. I can't assert definitively that it never
23	does.



Q.

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It might help if you took another look at

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paragraph 48 of your declaration. And you see in the first sentence of paragraph 48, you recognize that the claims refer to metadata included in the music files --

- A. Yes.
- Q. -- as we just discussed, right?
- A. As we discussed.
  - Q. All right.

MR. MOORE: Objection. Legal conclusion.

## BY MR. HEBERT:

- Q. And then you say in the next sentence, "Assuming that the music files would include the database, then the limitation is met." Right?
  - A. That's what it says, yeah.
- Q. Okay. So doesn't that suggest to you that you've already studied Looney and concluded that it doesn't discuss the metadata being included in the music files themselves apart from the database?
- A. You know, I didn't look at Looney to say -- and by the way, maybe you could -- there might be a mention of where you could put the files elsewhere than his database in here. I can't assert



1 definitively that he did not. 2 Ο. As you sit here today, you can't 3 identify anyplace where Looney talks about the metadata included in the music files, correct? 4 5 Α. Yes. MR. MOORE: Objection. Legal 6 7 conclusion. BY MR. HEBERT: 8 Now, the Looney patent describes a pretty 9 Ο. 10 complicated device, doesn't it? 11 MR. MOORE: Objection. Vaque. 12 Α. What's complicated? Well, his whole music selection scheme I 13 Ο. 14 thought was pretty complicated, didn't up? 15 Α. What's complicated? What does it mean for it to be complicated? 16 17 I -- I guess talking to a Ph.D. from MIT 18 I should take that back, right? I don't think the issue is a Ph.D. from 19 Α. 20 The issue might be your children versus you. MIT. 21 I doubt that they would find it complicated.

Q. Fair point.

Figure 13, for example, is a screenshot that involves how one would select the music files,



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interference or -- let me be precise -- that radio
reception might be adversely affected by using or by
connecting the portable MD recorder with the MD
connecting cord --

- A. Yes.
- Q. -- on page 42?
- A. Yes.

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- Q. Is it fair to say that you can't use -you can't produce music at least or sound from the
  radio and the MD at the same time?
- A. I don't think that it did that. It played one source at a time.
- Q. So, for example, if you're using the MiniDisc to play music, it doesn't really matter if radio reception is affected or not?
- A. Okay. If you're not listening to the radio, it doesn't matter if radio reception is good or not.
- Q. Now, does it offer a solution for the problem of the reception being adversely affected?
  - A. Well, it offers a suggestion that you unplug it on page 42.
  - Q. Well, so it says "If radio reception is poor, disconnect the MD connecting cord from the MD



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recorder"? Did I get that right?

- A. That's correct.
- Q. And then it goes on to say "Note that power will no longer be supplied to the MD recorder." And it suggests use the A/C power adapter supplied with the MD recorder or batteries?
  - A. Yes.
- Q. Do you have an understanding one way or another whether or not you could still then use the MD recorder with the Personal Audio System?
- A. Well, yeah, you could. You could plug in the digital audio cable, the optical cable, and the MD player would still play.
- Q. So do you know -- can you tell if there's any connection between the -- well, let me -- can you tell from this passage what is the cause of the adverse impact on the reception?
- A. Well, the cause is spurious radiation. So Sony is suggesting that that radiation comes -- is emitted through the cable.
- Q. Is that an uncommon problem in your experience?
- MR. HEBERT: Objection. Vague.
- A. Well, it's not a good thing. It's



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certainly a problem. It's -- given Sony's history
of quality, it's not one that you would expect to
see in a Sony device.

- Q. Do you recall a discussion about the amount of music that the NOMAD would be able to hold compared to the amount of music that the -- that the MiniDisc -- that a MiniDisc would hold?
  - A. Yes.
- Q. And if you want -- well, do you have an understanding of how much music could be held on the NOMAD if you reduced the bit rate?
- A. Well, the specification is set at 128K bits per second, which is a common MP3 rate, but you could also use 64, which would roughly double the capacity.
- Q. And so 64 would give you approximately two hours?
  - A. Yeah. Yes. In stereo.
- Q. And that's more than the 74 minutes in stereo that you'd get on the MiniDisc?
  - A. Correct.
- Q. Now, at one point you said there are other advantages to the NOMAD. Do you remember that?



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- Q. And the personal computer would then get music files from the Internet and transfer those to the personal computer, correct?

  A. It could.
  - Q. And then the personal computer could transfer the music files to the NOMAD, correct?
    - A. It could do that too.
  - Q. But the NOMAD, just to be clear, had no capability of directly getting music files from the Internet without using the personal computer, right?
  - A. To the best of my knowledge, I believe that's correct. It doesn't ever say it can do that.
- Q. Now, Mr. Moore also asked you about -- I don't know if "speed" is the right term for it, but I'll ask you if it is. If you are talking about 128 kilobytes or 68 kilobytes, is that speed?
  - A. It's data rate.
  - Q. Data rate. Okay.
- So Mr. Moore was asking you some questions about increasing the storage of the NOMAD up to approximately two hours by changing the data rate from 128 kilobytes to 64 kilobytes, correct?
- A. I believe we also talked about that earlier.



1	Q. I think I think we did.
2	Isn't it true that the sound quality at
3	64 kilobytes is not as good as at 128 kilobytes?
4	A. It depends partly on the music, partly or
5	your ears. It's at least in stereo.
6	Q. It's at least in stereo?
7	A. Yeah.
8	Q. But it would be fair to say it's
9	generally of lower quality, right?
10	A. When we standardized MPEG, 64 kilobytes
11	was pretty good; 128 was better. So in some cases
12	there was a difference you could notice. In some
13	cases there was a difference you could detect. In
14	other cases you wouldn't notice.
15	Q. Do you have any opinion as to what the
16	quality level would be of the music on the Sony
17	MiniDisc?
18	A. The quality of the Sony MiniDisc?
19	Q. The quality of the music coming off the
20	Sony MiniDisc. Would it be equivalent to the NOMAD
21	at 128 kilobytes or at 64 kilobytes?
22	A. Many people can argue about many



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dimensions of the music quality, but the MiniDisc

would, in general, be high quality.

1	Q. Comparable to the 128 kilobytes or
2	perhaps better?
3	A. Yes.
4	Q. Referring to the Sony personal audio
5	system manual for the ZS-D7, do you have that handy?
6	A. I know I do.
7	THE DEPONENT: Thank you. I have
8	some assistance now.
9	BY MR. HEBERT:
10	Q. And if you would turn to page 42. Are
11	you there?
12	A. I'm there.
13	Q. Okay. And there's been some testimony
14	Mr. Moore asked you some questions about the text
15	under the heading on the left-hand side that says
16	"Note on listening to the radio." Do you see that?
17	A. Yes.
18	Q. Okay. And you and I had some discussion
19	about that section as well, right?
20	A. We did.
21	Q. And there's an instruction here to
22	disconnect the MD connecting cord from the MD
23	recorder if the radio reception is poor, correct?



Α.

Yes.