

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

FEDERAL TRADE COMMISSION  
I N D E X (PUBLIC RECORD)

WITNESS:	DIRECT	CROSS	REDIRECT	RECROSS
Jacob		5587	5676	

EXHIBITS	FOR ID	IN EVID
CX		
RX		
DX		

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

UNITED STATES OF AMERICA  
FEDERAL TRADE COMMISSION

In the Matter of: )  
Rambus, Inc. ) Docket No. 9302  
-----)

Tuesday, June 17, 2003  
9:30 a.m.

TRIAL VOLUME 29  
PART 1  
PUBLIC RECORD

BEFORE THE HONORABLE STEPHEN J. McGUIRE  
Chief Administrative Law Judge  
Federal Trade Commission  
600 Pennsylvania Avenue, N.W.  
Washington, D.C.

Reported by: Josett F. Hall, RMR-CRR

For The Record, Inc.  
Waldorf, Maryland  
(301) 870-8025

1 APPEARANCES:

2

3 ON BEHALF OF THE FEDERAL TRADE COMMISSION:

4 M. SEAN ROYALL, Attorney

5 GEOFFREY OLIVER, Attorney

6 JOHN C. WEBER, Attorney

7 MICHAEL FRANCHAK, Attorney

8 CARY ZUK, Attorney

9 SUZANNE MICHEL, Attorney

10 Federal Trade Commission

11 601 New Jersey Avenue, N.W.

12 Washington, D.C. 20580-0000

13 (202) 326-3663

14

15 ON BEHALF OF THE RESPONDENT:

16 GREGORY P. STONE, Attorney

17 STEVEN M. PERRY, Attorney

18 PETER A. DETRE, Attorney

19 SEAN GATES, Attorney

20 Munger, Tolles & Olson LLP

21 355 South Grand Avenue, 35th Floor

22 Los Angeles, California 90071-1560

23 (213) 683-9255

24

25

For The Record, Inc.  
Waldorf, Maryland  
(301) 870-8025

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

APPEARANCES:

ON BEHALF OF THE RESPONDENT:

A. DOUGLAS MELAMED, Attorney  
Wilmer, Cutler & Pickering  
2445 M Street, N.W.  
Washington, D.C. 20037-1420  
(202) 663-6090

## P R O C E E D I N G S

- - - - -

1  
2  
3 JUDGE McGUIRE: This hearing is now in order.

4 Any items that you wish to take up before we  
5 start this morning?

6 MR. OLIVER: Not at this time, Your Honor.

7 JUDGE McGUIRE: Okay. Then at this time we'll  
8 begin with the cross-examination of the witness.

9 Mr. Jacob, would you please take the stand. I  
10 caution you you're still under oath from your prior  
11 testimony.

12 THE WITNESS: Thank you, Your Honor.

## CROSS-EXAMINATION

13  
14 BY MR. DETRE:

15 Q. Good morning, Professor Jacob.

16 A. Good morning.

17 Q. Now, you and I first met in March of this year;  
18 correct, when I took your deposition?

19 A. I believe so.

20 Q. Have you done any further work on this case  
21 since that deposition?

22 A. Further work? Yes.

23 Q. Can you give me some general idea of what that  
24 work involved?

25 A. Reading -- for example, reading testimonies,

1 transcripts of testimonies and depositions, for  
2 example.

3 Q. Anything else?

4 A. I've read articles. I've reread expert  
5 reports. Things of that nature.

6 Q. Now, you have never designed a DRAM yourself,  
7 have you?

8 A. Yes, I have. I've done architecture-level  
9 designs.

10 Q. You've done architectural designs of a complete  
11 DRAM?

12 A. That's -- well, that's what I do. I do  
13 architectural-level design as opposed to circuit  
14 design, for example.

15 Q. You've never done the circuit design of a  
16 complete DRAM; is that right?

17 A. Correct.

18 Q. And you had not designed any circuits for any  
19 computer chips that were actually to be fabricated  
20 until last year; correct?

21 A. Correct.

22 Q. And those chips that you did last year design  
23 some circuits for were not DRAM chips, were they?

24 A. Correct.

25 Q. Now, yesterday you testified about a

1 comparative study that you performed of contemporary  
2 DRAM architectures in 1998. Do you recall that?

3 A. It was -- yes. Yes.

4 Q. And I believe you testified that you modeled  
5 the performance of the various architectures that you  
6 were comparing as precisely as possible using software  
7 simulation; is that right?

8 A. Correct.

9 Q. Now, with respect to the -- and yesterday you  
10 discussed various alternatives to four particular  
11 features of synchronous DRAMs. Do you recall that?

12 A. Yes, I do.

13 Q. Now, with respect to those alternatives that  
14 you discussed yesterday, did you do this sort of  
15 precise software simulation with respect to any of  
16 them?

17 A. No, I did not.

18 Q. One of the features that you were proposing  
19 alternatives for you referred to as dual-edged  
20 clocking. Do you recall that?

21 A. One of the features that -- that I --

22 Q. Well, let me try to say that in a less  
23 convoluted manner.

24 A. Thank you.

25 Q. Yesterday you discussed with Mr. Oliver the

1 dual-edged clocking feature of DDR SDRAMs; correct?

2 A. Yes.

3 Q. And you proposed certain alternatives to that  
4 technology; correct?

5 A. Yes, I did.

6 Q. And one of the alternatives that you proposed  
7 was to increase the number of pins on the DRAM;  
8 correct?

9 A. Correct.

10 Q. And another one of the alternatives that you  
11 proposed was to increase the number of pins on the  
12 module; correct?

13 A. Correct.

14 Q. Now, with respect to those two alternatives in  
15 particular, you consulted some data that you had  
16 gathered in connection with an earlier academic study  
17 that you had done in order to get some idea of what  
18 the performance would be of those alternatives;  
19 correct?

20 A. Correct.

21 Q. And yesterday you also discussed alternatives  
22 to the programmable burst length feature of SDRAMs;  
23 correct?

24 A. Yes, I did.

25 Q. And one of the alternatives that you discussed



1 there was to use a burst terminate command; right?

2 A. Yes.

3 Q. And in connection with the burst terminate  
4 command alternative, you had a graduate student perform  
5 some sort of a statistical study to give you some idea  
6 of what the performance of that alternative would be;  
7 correct?

8 A. I and the graduate student did it together.

9 Q. Now, other than with respect to those three  
10 alternatives that I just mentioned now that you  
11 discussed yesterday, increasing the number of pins on  
12 the DRAM, increasing the number of pins on the module  
13 and using the burst terminate command for burst length,  
14 you did no simulation or modeling of any kind with  
15 respect to the other alternatives you testified about;  
16 correct?

17 A. Not that I can recall.

18 Q. Yesterday you discussed programmable CAS  
19 latency in SDRAMs with Mr. Oliver. Do you recall  
20 that?

21 A. Yes.

22 Q. And you proposed various alternatives to that?

23 A. Yes.

24 Q. And one of the alternatives that you proposed  
25 was to just fix the latency of the SDRAMs; right?

1 A. Correct.

2 Q. And that if you wanted to have SDRAMs with  
3 different CAS latencies you'd have to produce multiple  
4 parts; correct?

5 A. Correct.

6 Q. And if multiple SDRAM parts were produced, that  
7 could lead to higher inventory costs for the DRAM  
8 manufacturers; correct?

9 A. I'm not certain that it would.

10 Q. Potentially it could; right?

11 A. Well, for example, manufacturers currently  
12 separate out into different part numbers different  
13 parts with different CAS latencies, like 133 megahertz  
14 CAS 2 has a different part number from 133 megahertz  
15 CAS 3.

16 Q. You stated in your report, expert report in  
17 this matter, that having multiple fixed latency parts  
18 could potentially lead to higher inventory costs for  
19 the DRAM manufacturers. Do you recall that?

20 A. Yes, I do.

21 Q. And when I took your deposition, I asked you  
22 about that, and you confirmed that; right?

23 A. Yes. It could potentially lead to higher  
24 costs, but as I noted, currently, at least some  
25 manufacturers already do distinguish between different

1 CAS latencies, so at least for those manufacturers  
2 there doesn't seem to be a difference. There wouldn't  
3 be a difference.

4 Q. With respect to those potential higher  
5 inventory costs that might exist, you don't know what  
6 those inventory costs would be, do you?

7 A. You're asking me to speculate on the potential  
8 costs of something that might not exist?

9 Q. Well, you don't know whether it exists or not,  
10 that's your testimony; right?

11 A. I am suggesting that it probably wouldn't exist  
12 since already manufacturers do separate out parts with  
13 different CAS latencies, so you're telling me that  
14 if -- if they don't do that, which I have stated they  
15 already do, then what would the costs be, and so I  
16 don't really understand the question.

17 Q. You stated in your report, as you've just  
18 discussed now, that having the multiple parts could  
19 lead to higher inventory costs; right?

20 A. Right.

21 Q. When you said that in your report, you didn't  
22 have any idea of what those costs would be; is that  
23 right?

24 A. Correct.

25 Q. As one of the advantages of going to a fixed

1 latency part, yesterday you testified that if you did  
2 that, you could eliminate the mode register in SDRAMs;  
3 right?

4 A. Correct.

5 Q. Now, the mode register in SDRAMs is used for  
6 purposes other than to store CAS latency, isn't it?

7 A. Yes, it is.

8 Q. In particular, it stores the burst length; is  
9 that right?

10 A. Yes.

11 Q. And it stores the burst type; right?

12 A. Yes.

13 Q. And in DDR SDRAMs they expand the use of the  
14 mode register and they store other things in the mode  
15 register; right?

16 A. I believe so.

17 Q. And in DDR-II SDRAMs they're expanding the use  
18 of the mode register yet further again, storing even  
19 more things in the mode register; right?

20 A. I'm not certain about that.

21 Q. You don't know one way or the other?

22 A. I don't have the DDR-II spec in front of me and  
23 I have not consulted it recently, so I don't know  
24 offhand.

25 Q. If you just remove the programmable CAS latency

1 feature and went to fixed latency, you would still need  
2 the mode register for these various other purposes;  
3 correct?

4 A. If you were to retain those features, you would  
5 require the portion of the mode register used to  
6 implement those features and you could eliminate the  
7 portion of the mode register and the portion of the  
8 control logic that would be used to implement the CAS  
9 latency feature.

10 Q. One of the other alternatives for programmable  
11 CAS latency that you mentioned yesterday was to use  
12 fuses; right?

13 A. Correct.

14 Q. And you mentioned that one type of fuse is a  
15 laser-blown fuse?

16 A. Yes.

17 Q. And you also mentioned that you couldn't use a  
18 laser-blown fuse after a part has been packaged;  
19 right?

20 A. Yes.

21 Q. And you also mentioned that another type of  
22 fuse is an electrical fuse; right?

23 A. An electrically blown fuse, correct.

24 Q. And you said that some DRAM manufacturers are  
25 using electrically blown fuses; right?

1 A. Yes, I did.

2 Q. What DRAM manufacturers are those?

3 A. I believe Infineon and Micron and possibly  
4 Hynix.

5 Q. And do you know what parts they're using those  
6 electrical fuses in?

7 A. I don't know the part numbers.

8 Q. Do you know how many parts Micron is using  
9 electrical fuses in?

10 A. I believe a substantial number.

11 Q. Is Micron using the electrical fuses in all of  
12 its DRAM products?

13 A. I don't know if it's all, but I believe it's a  
14 substantial number. That's my understanding.

15 Q. Do you know how many?

16 A. A substantial number of the parts that they  
17 create.

18 Q. Do you know what percentage?

19 A. No.

20 Q. Do you know what percentage of Infineon's parts  
21 use electrical fuses?

22 A. No, I do not.

23 Q. Now, you know that electrical fuses are not as  
24 reliable as laser-blown fuses; right?

25 A. No, I do not know that.

1           Q. Now, you said earlier that the fuses, if they  
2 were electrical fuses, could be blown by the OEMs  
3 after the parts were shipped by the DRAM manufacturer;  
4 right?

5           A. Wait. Could you restate that question.

6           Q. Didn't you testify yesterday that since  
7 electrical fuses can be blown after packaging, they  
8 could be blown by an OEM after the DRAM parts had been  
9 shipped by the DRAM manufacturer?

10          A. Yes.

11          Q. Now, if that were done, then the DRAM  
12 manufacturer couldn't test the parts; isn't that  
13 right?

14          A. Yes, they could test the parts. They couldn't  
15 test it after blowing the fuse, but they could  
16 certainly test the functionality the way they  
17 currently do now and see, for example, what circuit is  
18 working.

19          Q. Well, they couldn't tell if the part with the  
20 blown fuse worked properly or not, could they?

21          A. If the part were -- if the fuse were to be  
22 blown after shipping, then no, the DRAM manufacturer  
23 would not be able to test whether or not the fuse was  
24 blown correctly.

25          Q. Do you know any examples of DRAMs where the

1 OEMs blow fuses after shipping?

2 A. No, I do not.

3 Q. Another alternative that you mentioned for  
4 programmable CAS latency was to identify the CAS  
5 latency in the command. Do you recall that?

6 A. Yes, I do.

7 Q. Now, identifying the CAS latency in the command  
8 has the negative side effect of limiting the  
9 simultaneous issuing of independent commands that is  
10 possible with current SDRAMs; isn't that right?

11 A. I'm not sure what you're referring to.  
12 Currently, you can only issue one command at a time,  
13 for example, a read or a write or a row activate,  
14 precharge. These commands can't be issued  
15 simultaneously. You can issue one command at a time.

16 Q. Well, let me show you your report, professor.  
17 May I approach, Your Honor?

18 JUDGE McGUIRE: Yes.

19 MR. DETRE: May I hand you a copy of the  
20 report.

21 BY MR. DETRE:

22 Q. And if I could direct you to page 54 of your  
23 report.

24 And on that page you're discussing this  
25 alternative; right, of identifying CAS latency in the



1 command?

2 A. Yes.

3 Q. And if you would look at the very last sentence  
4 in your paragraph 108 on that page, you stated in your  
5 report, with respect to this alternative, "This would  
6 have the negative side effect of limiting the  
7 simultaneous issuing of independent commands that is  
8 possible with the current command set, for example,  
9 setting DQ mask during the same cycle as issuing a  
10 column write," and you go on; is that right?

11 A. Yes. Yes. Typically --

12 JUDGE McGUIRE: Well, have you asked him a  
13 question?

14 THE WITNESS: I'm sorry.

15 MR. DETRE: No, I haven't, Your Honor.

16 JUDGE McGUIRE: You just made the comment. So  
17 wait until he asks you a question.

18 BY MR. DETRE:

19 Q. You stated that in your report; right,  
20 Professor Jacob?

21 A. Yes, I did.

22 Q. Let me show you another document.

23 Pull up RX-1308.

24 You can set the report aside for the moment.

25 And this is a document with -- a patent with

1 patent number 5,835,956.

2 Do you see that, Professor Jacob?

3 A. Yes, I do.

4 Q. And Matthew, if you could go down just a little  
5 bit lower, highlight the top part of it, including the  
6 title.

7 It's -- the title of the patent is Synchronous  
8 DRAM Having a Plurality of Latency Modes.

9 Do you see that?

10 A. Yes, I do.

11 Q. It was assigned to Samsung and filed on  
12 March 17, 1997, the application. Do you see that?

13 A. Yes, I do.

14 Q. But if you look just a little bit lower --  
15 right there, yes -- you'll see that under Related U.S.  
16 Application Data, it lists various parent applications  
17 going all the way back to 1993.

18 Do you see that?

19 A. Yes.

20 Q. Now, did you consider whether this patent  
21 issued to Samsung might cover this alternative that you  
22 mentioned yesterday about identifying the CAS latency  
23 in the command?

24 A. No, I did not.

25 Q. Did you check to see whether there might be any

1 patent coverage over that alternative?

2 A. No, I did not.

3 Q. Now, did you check to see whether there was any  
4 patent coverage over any of the alternatives for  
5 programmable CAS latency that you mentioned yesterday?

6 A. No, I did not.

7 Q. Now, yesterday you mentioned that another  
8 possible alternative with respect to programmable  
9 CAS latency was just to use asynchronous DRAM. Do you  
10 recall that?

11 A. Yes. Yes, I do.

12 Q. And you testified that SDRAM was a synchronous  
13 design; right?

14 A. A synchronous design?

15 Q. Yes. That SDRAM was a design of synchronous  
16 DRAM; is that right?

17 A. Yes. Yes, it is.

18 Q. And in the mid-1990s there was another proposal  
19 for high-speed DRAM called SyncLink or SLDRAM.

20 Are you familiar with that?

21 A. Yes, I am.

22 Q. And that was also a synchronous design;  
23 correct?

24 A. Correct.

25 Q. And another type of high-speed DRAM in the

1 mid-1990s was Rambus DRAM or RDRAM.

2 Are you familiar with that?

3 A. Yes, I am.

4 Q. And the Rambus design was also synchronous;  
5 right?

6 A. Yes.

7 Q. So isn't it a fact that all of the high-speed  
8 DRAMs being seriously considered in the mid to late  
9 1990s were synchronous DRAMs?

10 A. Being considered by whom?

11 Q. Being considered by DRAM manufacturers and  
12 chipset companies as the next generation of high-speed  
13 DRAMs.

14 A. I don't know what these companies were  
15 considering internally.

16 For example, I've seen an internal Rambus  
17 document where Rambus was considering asynchronous  
18 DRAMs, so...

19 Q. Right.

20 And in fact, a significant amount of work was  
21 being done on asynchronous technology at both the  
22 academic and commercial level during the last decade;  
23 right?

24 A. Yes.

25 Q. Now, when you were talking about asynchronous

1 DRAMs, nonsynchronous -- I guess nonsynchronous is not  
2 the right way to say it, but I'll just try to enunciate  
3 as clearly as I can.

4 When you were talking about asynchronous DRAMs,  
5 you mentioned a type of asynchronous DRAM called burst  
6 EDO that was developed by Micron; correct?

7 A. Yes, I mentioned burst EDO. I'm not sure who  
8 developed it first.

9 Q. So you don't know whether that was developed by  
10 Micron or not?

11 A. No.

12 Q. Do you know that Micron was only suggesting  
13 burst EDO for speeds of up to 100 megahertz?

14 A. I don't know what they were suggesting it for.  
15 I know that they reported to have it cycling at speeds  
16 up to 125 megahertz over voltage and temperature  
17 ranges, meaning not in a highly controlled atmosphere  
18 but a wide range of possibilities with different  
19 temperatures and voltage fluctuations, and it was  
20 working stably at 125 megahertz, so I don't know what  
21 they were proposing it at.

22 Q. And do you know that for speeds greater than  
23 100 megahertz Micron was proposing SyncLink DRAM?

24 A. No, I do not.

25 Q. Are you aware, by the way, Professor Jacob,

1 that Micron has numerous patents covering burst EDO  
2 technology?

3 A. No.

4 Q. You didn't look into that when you were  
5 considering the asynchronous alternative?

6 A. No, I did not. I was looking at technical  
7 alternative.

8 Q. Now, yesterday, you also testified about  
9 alternatives to programmable burst length in SDRAMs.  
10 Do you recall that?

11 A. Yes, I do.

12 Q. And one of the alternatives that you suggested  
13 was to use a burst terminate command that already  
14 exists; is that right?

15 A. Yes.

16 Q. And that's the alternative where you mentioned  
17 earlier today that you and this graduate student had  
18 done a statistical study to get some idea of what  
19 impact using a burst terminate command instead of  
20 programmable burst length might have on performance;  
21 right?

22 A. Correct.

23 Q. And this study showed that using the burst  
24 terminate command could affect the efficiency of the  
25 system by 10 to 15 percent; is that right?

1           A. I don't believe -- it could -- I think it  
2 could have been that in hypothetical worst-case  
3 situations, but I think we determined that it would be  
4 in most situations less than that. That's my  
5 recollection.

6           Q. Well, let's just have a look at your deposition  
7 if we might, and I -- do you have a copy of your  
8 deposition there, Professor Jacob, over on the  
9 right-hand side?

10          A. Oh. Yes, I do.

11          Q. This was, according to the cover anyway, this  
12 was a deposition of yourself taken on March 19, 2003?

13          A. Yes.

14          Q. Does that sound about right for the date?

15          A. Yes, it does.

16          Q. Now, if I could ask you to turn to page 123.

17                 And at -- and in discussing your statistical  
18 study of the burst terminate command, if we could read  
19 at line 13, I asked, "What were the results of that  
20 simulation?"

21                 And you answered, "The results were that it  
22 didn't look like it was going to be very -- it wouldn't  
23 have caused much overhead."

24                 And I asked you, "How much overhead would it  
25 have caused?"

1           And you said, "I don't remember offhand, but it  
2 was 10-15 percent or less."

3           Do you see that?

4           A. Yes, I do.

5           Q. And that's what you testified to at your  
6 deposition; right?

7           A. Well, this is a -- this is my deposition, yes.

8           Q. Now, still talking about the burst terminate  
9 alternative, let me show you a document.

10           JUDGE McGUIRE: You may approach, Mr. Detre.

11           MR. DETRE: Sorry, Your Honor. Thank you.

12           BY MR. DETRE:

13           Q. And if we could pull up CX-415.

14           There we go.

15           Now, the cover of this document identifies this  
16 as a set of slides entitled DDR Memory, Past, Present  
17 and Future, Desi Rhoden, Advanced Memory International,  
18 Inc., and the date is March 17, 2000.

19           Do you see that on the cover?

20           A. Yes, I do.

21           Q. And Desi Rhoden was one of the gentlemen who  
22 you spoke to in connection with your work on this case;  
23 right?

24           A. Yes, he is.

25           Q. Now, if I could ask you to turn to page 10 of



1 this document, Major Changes with DDR, do you see  
2 that?

3 A. Yes, I do.

4 Q. And down at the bottom, the last bullet point,  
5 it says, "Eliminate burst stop command, an internal  
6 device timing nightmare."

7 Do you see that?

8 A. Yes, I do.

9 Q. Now, the burst stop command, that's just  
10 another name for what you're calling burst terminate,  
11 isn't it?

12 A. Yes, it is.

13 Q. And did Mr. Rhoden discuss with you that the  
14 burst stop command was an internal device timing  
15 nightmare?

16 A. I'm not sure if he did or not. I know that  
17 some engineers did. I don't recall exactly who said  
18 what.

19 Q. Now, another alternative that you -- you can  
20 put that document aside, Professor Jacob.

21 Another alternative that you discussed for  
22 programmable burst length was the use of the CAS pulse  
23 to control data output. Do you recall that?

24 A. Yes.

25 Q. And you could describe that as basically a

1 burst EDO style of bursting data; is that right?

2 A. Similar to either burst EDO or toggle mode, or  
3 you can also think of it as being similar to DDR, DDR's  
4 use of DQS.

5 Q. You mentioned toggle mode just then, and by  
6 that, I think you testified yesterday you were  
7 referring to a technology proposed by IBM; is that  
8 right?

9 A. Yes.

10 Q. And that was a form of asynchronous technology;  
11 correct?

12 A. That was -- I believe they were calling that an  
13 asynchronous DRAM at the time, but it depends upon your  
14 definition of "synchronous" and "asynchronous."

15 Q. Well, yesterday your definition of an  
16 asynchronous DRAM was one in which the RAS and the CAS  
17 actually controlled the operation of the DRAM rather  
18 than the system clock; right?

19 A. Correct.

20 So toggle mode has an asynchronous capture of  
21 commands, but it has a synchronous capture of data, so  
22 that's why it's sort of in that gray area.

23 Q. RAS and CAS are asynchronous in the IBM design;  
24 right?

25 A. I believe so in that toggle mode design.

1 Q. Now, let me show you another document.

2 If we could pull up RX-2099 -- excuse me --  
3 RX-2099-007.

4 May I approach, Your Honor?

5 JUDGE McGUIRE: Yes, you may.

6 MR. DETRE: Thanks to Mr. Perry, I remembered.

7 JUDGE McGUIRE: Thank you, Mr. Perry.

8 BY MR. DETRE:

9 Q. And this is a paper entitled A White Paper on  
10 the Benefits of Chipkill Correct ECC for PC Server Main  
11 Memory.

12 Do you see that on the cover, Professor Jacob?

13 A. Yes, I do.

14 Q. And that's by one Timothy J. Dell; is that  
15 right?

16 A. Yes, it is.

17 Q. And it's from the IBM Microelectronics  
18 Division.

19 Do you see that?

20 A. Yes, I do.

21 Q. Now, if we could turn to page 16 of this  
22 document, and there's a section at the bottom entitled  
23 Design Trade-Offs.

24 Do you see that?

25 A. Yes, I do.

1 Q. And there, Mr. Dell writes, "For example, a  
2 forerunner of the emerging double data rate DDR SDRAM  
3 called toggle mode was implemented in conjunction with  
4 the low multibit piecepart architecture."

5 Do you see that?

6 A. Yes, I do.

7 Q. And he goes on to say, "The cumulative effect  
8 of these design trade-offs was to present a DRAM that  
9 was very fast and very RAS friendly but also very big,  
10 very hot and very nonstandard."

11 Do you see that?

12 A. Yes, I do.

13 Q. And you know that the IBM toggle mode part was  
14 very big and very hot, don't you?

15 A. Well, this is describing that research part,  
16 yes.

17 Q. Your understanding is that the IBM toggle mode  
18 part was a research part?

19 A. Their implementation of it at the time was a  
20 research part. It wasn't in volume production, so by  
21 definition, it was a research part.

22 Q. And Mr. Dell goes on to say in his next  
23 paragraph at the last sentence that in the commodity  
24 market these attributes, referring to the toggle mode  
25 attributes that we just mentioned, are disastrous;

1 right?

2 A. Yes, he says that.

3 Q. Now, staying on toggle mode for a second,  
4 Professor Jacob, are you aware that Gordon Kelley of  
5 IBM testified at this hearing? Is that one of the  
6 transcripts that you've reviewed?

7 A. I don't recall. I recognize the name, but I'm  
8 not sure if I've read the testimony.

9 Q. Well, do you recall or have you heard that  
10 Mr. Kelley has testified in this hearing that IBM has  
11 patents on its toggle mode design?

12 A. No, I do not know that.

13 Q. Do you know that according to IBM witnesses,  
14 IBM's licensing rates for its patents are in the 1 to  
15 5 percent range?

16 MR. OLIVER: Objection, Your Honor.  
17 Mischaracterizes the testimony.

18 JUDGE McGUIRE: Sustained.

19 BY MR. DETRE:

20 Q. Now, yesterday you testified that you don't  
21 think of toggle mode really as an alternative to DDR  
22 because it's essentially the same thing; is that  
23 right?

24 A. It's -- the problem is that it's sitting in  
25 that gray area. If you look at dual-edged clocking as

1 just the concept of sending and receiving data on both  
2 edges of the clock, then it is dual-edged clocking.  
3 If you look at dual-edged clocking as an  
4 implementation in specific, you know, how you  
5 implement the dual-edged clocking, then it would be an  
6 alternative.

7 So it's in that gray area, and -- well...

8 Q. Do you know that Rambus submitted the patents  
9 that IBM holds on toggle mode to the patent office?

10 A. You mean with their original application?

11 Q. No. I mean later on.

12 A. I'm not sure if I recall that or not. Was that  
13 mentioned in Soderman's report?

14 Q. I frankly don't recall exactly what was in  
15 Dr. Soderman's report, so I can't help you there, but  
16 you don't recall, Professor Jacob?

17 A. It sounds familiar, but I can't say definitely  
18 whether I know that to be true or not. But for  
19 instance, if it was mentioned in Dr. Soderman's report,  
20 then certainly I read that report and I would be aware  
21 of that, but that's not one of the main details that  
22 stands out in my mind.

23 Q. Do you know that Rambus' patents related to DDR  
24 technology were issued by the patent office even though  
25 the patent office had before it the IBM toggle mode

1 patents?

2 A. Do I know that or do I believe it to be true?

3 Q. Do you know it?

4 A. No, I don't know it for a fact.

5 Q. Now, toggle mode was one of the alternatives  
6 that you were suggesting to the dual-edged clocking  
7 feature of DDR SDRAMs; right?

8 A. Well, as I think I mentioned in testimony  
9 yesterday, it was listed there more out of -- for the  
10 sake of completeness. I'm not sure whether it was an  
11 alternative or not, and that depends upon your  
12 viewpoint. It was there because Rambus believes it to  
13 be different and so I figured I would provide that  
14 alternative for the sake of completeness.

15 Q. And the patent office believes it to be  
16 different, too; right?

17 A. If you tell me so, then I believe you.

18 Q. One of the other alternatives you mentioned for  
19 dual-edged clocking was interleaving on-chip banks. Do  
20 you recall that?

21 A. Yes, I do.

22 Q. You've never tried to design such a system,  
23 have you?

24 A. I did an architectural design of that system.  
25 That's in the 19 -- study published in 1999 and the

1 follow-on published in 2001.

2 Q. Well, let's have a look at your deposition.  
3 Have you still got that there, Professor Jacob?

4 A. Yes, I do.

5 Q. And if you would turn to page 179, and if you  
6 would just look at the very last question on that page  
7 at line 25.

8 You were asked the question: "Have you tried  
9 to design such a system?"

10 And you responded at the very top of page 180:  
11 "An interleaved system? No, I have not."

12 Do you see that?

13 A. Yes, I do.

14 Q. And that's what you stated at your deposition;  
15 right?

16 A. I believe that the question referred to a  
17 physical design. And yes, that's what I said in  
18 response.

19 Q. Now, that interleaved system or interleave  
20 alternative that you were discussing yesterday, that  
21 used two clocks; right? One clock went to one bank  
22 and another clock went to the other bank; is that  
23 right?

24 A. That is right.

25 Q. Let me show you another document.



1           May I approach, Your Honor?

2           JUDGE McGUIRE: Yes, you may, Mr. Detre.

3           MR. DETRE: I apologize, Your Honor. I'm going  
4 to get the hang of this.

5           BY MR. DETRE:

6           Q. Could we pull up RX-1472.

7           And if you could just blow up the top part of  
8 that, the title and the number.

9           I've handed you, Professor Jacob, a U.S.  
10 patent, patent number 5,915,105. Do you see that?

11          A. Yes, I do.

12          Q. And it's assigned to Rambus; right?

13          A. Yes.

14          Q. The inventors are Michael Farmwald and  
15 Mark Horowitz?

16          A. Yes.

17          Q. And it was filed in November of 1997, but if  
18 you look at the related U.S. application data and trace  
19 that back, it goes all the way back to the  
20 '898 application that you testified about yesterday.

21                 Do you see that?

22          A. Yes, I do.

23          Q. Could we turn to page 31 of this document,  
24 please.

25                 And on the right-hand column, you'll see

1 there's a claim 27.

2 Could we blow that up.

3 And claim 27 states, "A memory device having at  
4 least one memory section which includes a plurality of  
5 memory cells, the memory device comprises," and then it  
6 lists "a first clock receiver to receive a first  
7 external clock signal; a second clock receiver to  
8 receive a second external clock signal; and input  
9 receiver circuitry, coupled to the first and second  
10 clock receivers, to sample information on a bus  
11 synchronously with respect to the first and second  
12 external clock signals."

13 Do you see that?

14 A. Yes, I do.

15 Q. Did you consider this patent or any of its  
16 claims when you were proposing the interleaving of  
17 on-chip banks as an alternative to DDR?

18 A. No, I did not.

19 Q. Now, yesterday you also testified,  
20 Professor Jacob, about alternatives to on-chip DLL as  
21 used in DDR SDRAMs; correct?

22 A. Yes.

23 Q. And yesterday you testified that a PLL and a  
24 DLL were similar circuits but whereas a PLL uses an  
25 oscillator to generate a clock signal, a DLL does not

1 use an oscillator; correct?

2 A. Correct.

3 Q. A DLL uses variable delay circuitry to delay  
4 one signal so that it is in sync with another signal;  
5 correct?

6 A. Correct.

7 Q. And a PLL uses an oscillator instead of varying  
8 the delay circuitry; right?

9 A. Correct.

10 Q. But both can be used for that same purpose, to  
11 get one clock signal in sync with another; right?

12 A. Both can be used to produce two clock signals  
13 that are in sync with each other.

14 Q. Now, the DLL as it's used in DDR SDRAMs is  
15 transparent in DRAM interface; correct?

16 A. Correct.

17 Q. And that means that the rest of the system  
18 doesn't care whether there is a DLL there or some  
19 other kind of circuitry so long as the data arrives at  
20 the controller in the appropriate timing window;  
21 right?

22 A. Yes.

23 Q. So if you took a PLL and stuck it on the  
24 DDR SDRAM instead of the DLL, it would operate just  
25 fine; right?

1           A. I believe so. I'm not absolutely certain, but  
2 I believe so.

3           Q. Now, one of the alternatives that you mentioned  
4 yesterday to this idea of using an on-chip DLL was a  
5 vernier circuit; right?

6           A. Yes.

7           Q. And you're aware, correct, that the SLDRAM chip  
8 designed by SyncLink used a vernier?

9           A. Yes, I am.

10          Q. And isn't it also true that the SLDRAM chip  
11 used an on-chip DLL in addition to the vernier in order  
12 to make the timing more accurate?

13          A. I'm not sure what you mean by making the  
14 timing more accurate. The DLL was not used to capture  
15 data. That's not the timing that it was making more  
16 accurate.

17                 So I don't know what you're getting at.

18          Q. Well, you testified in your deposition that the  
19 purpose of that DLL on top of the vernier in SyncLink  
20 SLDRAMs was to make the timing more accurate, didn't  
21 you?

22          A. I didn't say it was on top of the vernier.

23          Q. Could we turn to your deposition, at page 167.

24                 And on that page, we're discussing a  
25 conversation that you had with Mr. Terry Lee of Micron

1 about the use of verniers and DLLs and SLDRAMs.

2 Do you see that?

3 A. Yes, I do.

4 Q. And you're describing what Mr. Lee told you in  
5 your response there; right?

6 A. I am describing my understanding of the way the  
7 vernier and the DLL are used in the SLDRAM work.

8 Q. And in the sentence of your response, lengthy  
9 response that begins at line 17, you state, "And so  
10 this static calculation was done, and the vernier was  
11 set in each of the DRAMs, and that the DLL was used to  
12 make that timing a little bit more accurate"; correct?

13 MR. OLIVER: Objection, Your Honor.

14 Counsel has read a half of a sentence here. I  
15 believe if the entire answer is read you'll see that  
16 the answer is completely consistent with his testimony  
17 this morning.

18 JUDGE McGUIRE: I'll give you that opportunity  
19 to do that either on your questioning or I'll let you  
20 interject at this time after he's done with that half  
21 question and I guess complete, you know, the  
22 statement.

23 MR. OLIVER: I'd like to do that at this time  
24 if I could, please, Your Honor.

25 JUDGE McGUIRE: All right.

1 BY MR. DETRE:

2 Q. Do you have the question in mind,  
3 Professor Jacob?

4 A. No, I do not.

5 Q. If we could begin reading at line 17 of your  
6 response, you state, "And so this static calculation  
7 was done, and the vernier was set in each of the DRAMs,  
8 and that the DLL was used to make that timing a little  
9 bit more accurate."

10 That's what you stated; correct?

11 A. That's what I state there.

12 MR. OLIVER: Your Honor, may I read the entire  
13 question?

14 JUDGE McGUIRE: Yes, Mr. Oliver.

15 MR. OLIVER: Thanks, Your Honor.

16 Beginning on page 167, line 1, reading through  
17 page 167, line 25:

18 "QUESTION: And what did Mr. Lee tell you about  
19 the use of verniers in DLLs and SLDRAMs?

20 "ANSWER: He said that contrary to what  
21 Soderman had said, that the SLDRAM part that was built  
22 did use verniers. Soderman had said that they  
23 abandoned the use of a vernier in favor of a DLL and  
24 therefore that the vernier is a useless mechanism. Lee  
25 said that the verniers were used at both the controller

1 side and the DRAM side to capture data.

2 "They were used to, quote-unquote, level the  
3 bus so that all DRAMs responded to transactions at  
4 nominally the same time so that even though a nearby  
5 DRAM would receive a request sooner than a faraway  
6 DRAM, the nearby DRAM would delay its response so that  
7 it appeared -- so that it would write things out onto  
8 the bus at the same time that the further-away DRAM  
9 would.

10 "And so this static calculation was done, and  
11 the vernier was set in each of the DRAMs, and that the  
12 DLL was used to make that timing a little bit more  
13 accurate, and that the verniers were used to delay the  
14 data with respect to the strobe so that the strobe  
15 captured the data.

16 "So the verniers, according to Mr. Lee, were  
17 used in the capture of data and not the DLL. That's my  
18 recollection."

19 JUDGE McGUIRE: All right. Mr. Detre, you may  
20 proceed.

21 MR. DETRE: Thank you, Your Honor.

22 BY MR. DETRE:

23 Q. Let me show you a document, Professor Jacob.

24 May I approach, Your Honor?

25 JUDGE McGUIRE: Yes.

1 BY MR. DETRE:

2 Q. Could we pull up RX-1701.

3 And if you'd blow up that usual top part,  
4 please.

5 I've handed you, Professor Jacob, a patent with  
6 patent number 6,115,318. It's titled Clock Vernier  
7 Adjustment. It's assigned to Micron Technology. And  
8 it was filed on December 3, 1996.

9 Do you see that?

10 A. Yes, I do.

11 Q. When you were proposing your vernier  
12 alternative, did you consider this patent?

13 A. No, I did not.

14 Q. Do you know whether this patent covers the type  
15 of vernier technology that you were proposing?

16 MR. OLIVER: Objection, Your Honor. He said he  
17 did not consider this patent.

18 JUDGE McGUIRE: Sustained.

19 BY MR. DETRE:

20 Q. Let me show you another document.

21 Could we pull up RX-1479.

22 May I approach, Your Honor?

23 JUDGE McGUIRE: Yes.

24 BY MR. DETRE:

25 Q. And I've handed you now a patent with patent



1 number 5,917,760, Deskewing Data Signals in a Memory  
2 System, assigned to SLD RAM, Inc., filed September 19,  
3 1997.

4 Professor Jacob, do you know whether this  
5 patent covers the use of verniers as used in SLD RAM  
6 devices?

7 A. No, I do not.

8 Q. Did you consider this patent when you were  
9 proposing your vernier alternative?

10 A. No, I did not.

11 Q. Let me move on, Professor Jacob, to another  
12 topic that you covered yesterday with Mr. Oliver.

13 And you discussed with Mr. Oliver whether  
14 certain Rambus patent claims pending between 1991 and  
15 1996 covered JEDEC work. Do you recall that?

16 A. Yes.

17 Q. Now, when you were responding to those  
18 questions, what did you understand by "a patent claim  
19 covering JEDEC work"? What did you understand by  
20 "cover"?

21 A. My understanding was that for it to cover, an  
22 engineer reasonably versed in the art would reasonably  
23 understand the -- that the engineer's interpretation of  
24 the claims, using the normal and customary meanings of  
25 the terms, would relate to the work in question, the

1 work going on in the JEDEC subcommittee.

2 Q. That it would relate to the work going on in  
3 the JEDEC subcommittee; is that right?

4 A. That every element in the claim would  
5 correspond to something going on within JEDEC at the  
6 time, so every claim would need to be satisfied. You  
7 know, it couldn't just be this is near, this is near to  
8 it. Every element would have to be satisfied.

9 Q. So that a product actually built to the  
10 specifications being discussed at JEDEC would infringe  
11 the patent claims; is that what you meant?

12 MR. OLIVER: Objection, Your Honor. To the  
13 extent he's asking about infringement, that would call  
14 for a legal conclusion.

15 JUDGE McGUIRE: Sustained.

16 BY MR. DETRE:

17 Q. You mentioned just now that you tried to  
18 interpret claims, do this analysis from -- actually let  
19 me step back for one second. Excuse me.

20 Prior to this case, you've never done any  
21 claims analysis of the type that you presented here  
22 yesterday; correct?

23 A. Correct.

24 Q. And as you testified just now, you do  
25 understand that claims are to be interpreted from the

1 point of view of a person of ordinary skill in the art  
2 to which the patent pertains; correct?

3 A. Correct.

4 Q. And you would consider a person of ordinary  
5 skill in the art to have a technical understanding of  
6 DRAMs and several years experience in designing DRAM  
7 systems, architectures and/or circuits; correct?

8 A. Correct.

9 Q. Let's look at one of the claims you testified  
10 about yesterday, CX-1504.

11 May I approach, Your Honor?

12 JUDGE McGUIRE: Yes.

13 BY MR. DETRE:

14 Q. I've handed you a copy, Professor Jacob, of one  
15 of the exhibits Mr. Oliver used with you yesterday,  
16 CX-1504, a copy of the file wrapper, U.S. serial number  
17 08/910,810, and if we could turn to page 216.

18 And blow up just the top part there, please.

19 You've testified about this amendment that  
20 begins on page 216 yesterday. Do you recall that,  
21 Professor Jacob?

22 A. I believe so, yes.

23 Q. And if we look at this amendment, in the block  
24 at the top right it identifies the serial number of the  
25 application that's being amended as 07/847,961.

1           Do you see that?

2           A. At the top right?

3           Q. The top left. Excuse me. I'm getting my hands  
4 backwards.

5           A. No problem.

6           Q. You see that; right, the '961 application?

7           A. Yes.

8           Q. And you testified, if we move ahead to  
9 page 221, about claim 160 that begins at the bottom of  
10 that page; right?

11          A. I believe so.

12          Q. And you testified about certain other claims in  
13 this amendment; right?

14          A. Okay.

15          Q. And you testified that claim 160, as well as  
16 the other claims that you testified about, covered  
17 SDRAMs; right?

18          A. I -- could you restate that.

19          Q. Didn't you testify yesterday that claim 160, as  
20 well as certain other claims that you testified about  
21 in this amendment, covered SDRAMs due to their  
22 programmable CAS latency and programmable burst length  
23 features? Do you recall that?

24          A. I believe what I testified to was that this  
25 would cover the mode register of the SDRAM

1 specification.

2 Q. So that if --

3 A. And would therefore cover the implementation of  
4 CAS latency, yes.

5 Q. Sorry. I didn't quite catch it. You said  
6 therefore it covered the implementation of?

7 A. Of the programmable CAS latency. Because you  
8 said programmable CAS latency; correct?

9 Q. Okay. So it's your understanding that  
10 claim 160, as well as the other claims that you  
11 testified about in this amendment --

12 A. Well, actually let me -- I'm sorry. I don't  
13 have these -- the numbers of the claims memorized the  
14 way all the lawyers do. Let me reread this.

15 Q. Sure. Take your time.

16 (Pause in the proceedings.)

17 A. Yes. Yes. I'm sorry. Yes.

18 Q. You testified that claim 160, as well as  
19 certain other claims in this amendment, would cover the  
20 mode register as specified for SDRAMs and consequently  
21 would cover SDRAMs that contain such a mode register;  
22 is that right?

23 A. Yes.

24 Q. Now, let me show you a document, RX-2111.

25 May I approach, Your Honor?

1           Could you blow up the top half, please.

2           Professor Jacob, I've handed you an opinion of  
3 the United States Court of Appeals for the Federal  
4 Circuit in the case of Rambus, Inc. versus Infineon  
5 Technologies, et al.

6           Do you see that?

7           A. Yes, I do.

8           Q. Have you seen this document before?

9           A. I'm not sure. I may have.

10          Q. Did you review the Federal Circuit's opinion  
11 in the Rambus case after it came out earlier this  
12 year?

13          A. Are you referring to the one that I mentioned  
14 in my deposition? Is this that document?

15          Q. I believe it is.

16          A. Okay. Well, then yes. I read it, and if this  
17 is it, then I've read this document. My printout  
18 looks very different from this, so it's hard to  
19 recognize.

20          Q. And the opinions are produced in various  
21 different formats, that's true.

22                 If we could go to page 33 of the opinion, and  
23 if we could just look at the sentence, the very last  
24 sentence on the page that just begins on that page and  
25 then carries over to the next page, it begins, "The

1 court also identified application" -- I'm not going to  
2 need both pages. We can just -- let's just start with  
3 that page. Let's just look at that line.

4 "The court also identified application  
5 numbers 07/847,651" -- now let's go on to the next  
6 page -- "('651 application) filed in March 1992 and  
7 07/847,961 ('961 application) filed in March 1992 but  
8 later abandoned as having claims directed toward CAS  
9 latency."

10 Do you see that?

11 A. Yes, I do.

12 Q. And that application, which the court refers to  
13 as the '961 application, that's the same  
14 '961 application that you were testifying about  
15 yesterday; correct?

16 A. If the numbers match up, then yes, it is.

17 Q. And if you could look at the next paragraph on  
18 that page, the very first couple of sentences:  
19 "The (sic) court has examined the claims of the cited  
20 applications," referring to the applications in the  
21 previous paragraph, including the '961 application, "as  
22 well as the relevant portions of the SDRAM standard.  
23 Based on this review, this court has determined that  
24 substantial evidence does not support the finding that  
25 these applications had claims that read on the SDRAM

1 standard."

2 Do you see that?

3 A. Yes, I do.

4 Q. Now, in reading the Federal Circuit's opinion,  
5 did that cause you to in any way revise your opinion  
6 that claim 160 and the other claims you testified about  
7 in the '961 application had claims that would cover an  
8 SDRAM with a mode register?

9 A. No, it would not.

10 Q. Do you disagree with the Federal Circuit's  
11 finding there?

12 A. I'm not sure what this says.

13 Q. You don't understand those sentences?

14 A. You asked me about this in my deposition, and I  
15 still don't understand the meaning of that sentence.

16 Q. Well, let's move to the end of that paragraph,  
17 the last two sentences beginning with "similarly."

18 It states, "Similarly, claims in the  
19 '961 application were limited to the device identifier  
20 feature, "and then it discusses another application and  
21 goes on to say, "Thus, licenses under the claims of  
22 these applications or the '717 patent would not be  
23 necessary to practice the SDRAM standard."

24 Do you see that?

25 A. Yes, I do.



1           Q. Now, do reading those sentences change in any  
2 way your opinion that the claims that you testified  
3 about yesterday would read on SDRAMs?

4           A. Not at all because the claims that I talked  
5 about were not limited to the device identifier  
6 feature.

7           Q. Okay. So if the Federal Circuit is saying that  
8 those claims in the '961 application were so limited,  
9 you simply disagree; is that right?

10           JUDGE McGUIRE: Well, I'm a little bit confused  
11 about that answer that you just gave, professor. Would  
12 you expound on that for my edification.

13           THE WITNESS: Sure. The sentence here says,  
14 "Similarly, claims in the '961 application were limited  
15 to the device identifier feature," and indeed if you  
16 read through that application, there are claims that  
17 are explicitly limited to the device identifier  
18 feature, and then there are other claims that are not  
19 explicitly limited to the device identifier feature.

20           Some of them explicitly use that language;  
21 they say this is a bus that uses device identifiers.  
22 And then there are other claims that omit that  
23 wording.

24           JUDGE McGUIRE: Okay. You may proceed,  
25 Mr. Detre.

1 BY MR. DETRE:

2 Q. So you do not believe, Professor Jacob, that  
3 all the claims in the '961 application were limited to  
4 the device identifier feature; is that right?

5 A. The claims that I looked at did not say  
6 anything about device identifiers.

7 Well, the claims that I used.

8 Q. Could we go back to CX-1504. Have you still  
9 got that in front of you, Professor Jacob? Excuse me.  
10 That's the big document with the '961 amendment in the  
11 middle.

12 A. Okay. Yes. Yes, I have it.

13 Q. And if we could go back to -- let's see --  
14 page 216.

15 Now, if we blow up the top part of that again,  
16 do you see the date over on the right-hand side,  
17 January 6, 1995?

18 A. Yes, I do.

19 Q. So you understand this amendment was sent to  
20 the patent office on that date; is that right?

21 A. Frankly, I don't know exactly what that date  
22 means.

23 Q. If you look at the mailroom stamp at the top  
24 left, do you see it's stamped January 10, 1995 at the  
25 Patent and Trademark Office?

1 A. Yes.

2 Q. Do you know that these claims that you  
3 testified about yesterday were canceled in June of  
4 1995 and so were only pending at the patent office for  
5 about six months?

6 A. Do I know that.

7 No, I do not know that offhand.

8 Q. Let's move on to the '692 application if we  
9 could.

10 May I approach, Your Honor?

11 JUDGE McGUIRE: Yes.

12 BY MR. DETRE:

13 Q. Excuse me. CX-1502. It's the '481 patent file  
14 wrapper.

15 Now, if we could turn to page 205 of this  
16 document.

17 And this is identified as a preliminary  
18 amendment in patent application serial  
19 number 07/847,692.

20 Do you recall testifying about claim 151 in  
21 that preliminary amendment yesterday, Professor Jacob?  
22 And maybe we could just turn to claim 151, which  
23 appears on page 208.

24 A. Yes. That looks familiar.

25 Q. And if we could just blow up claim 151 at the

1 very top of the page.

2 Now, one element of that claim identified by  
3 the letter C calls for a phase-locked loop, PLL,  
4 coupled to the clock signal -- excuse me -- coupled to  
5 the clock signal receiving circuit and the memory array  
6 for providing a variable delay to the local clock  
7 signal such that the delayed local clock signal is  
8 synchronized with the external clock signal received by  
9 the clock signal receiving circuit.

10 Do you see that?

11 A. Yes, I do.

12 Q. Now, that description of the PLL circuitry  
13 providing a variable delay to the local clock signal,  
14 that actually describes a DLL, doesn't it,  
15 Professor Jacob?

16 A. Yes. That's my understanding of a DLL.

17 Q. Let's put that aside for a second and let's  
18 look at the NEC presentation that you compared this  
19 claim to yesterday, Professor Jacob.

20 A. Okay.

21 Q. And that's going to be JX-21.

22 May I approach, Your Honor?

23 JUDGE McGUIRE: Yes.

24 BY MR. DETRE:

25 Q. If we could turn to page 91 of that document.

1           Have you got that, Professor Jacob?

2           A. Yes, I do.

3           Q. And that's the diagram you were testifying  
4 about yesterday comparing to claim 151 in that  
5 amendment to the '692 application; right?

6           A. Correct.

7           Q. Now, if you look at the part of that diagram on  
8 the right-hand side headed With PLL, do you see that  
9 little square near the top which says "PLL" in it? Do  
10 you see that?

11          A. Yes, I do.

12          Q. Now, in your understanding, does that PLL have  
13 any effect on what goes on in the rectangle marked  
14 "memory array"?

15          A. It affects the timing of reads and writes with  
16 respect to the memory array.

17          Q. What on this diagram shows you that it affects  
18 the timing of writes?

19          A. Oh, okay. Good point. That's sort of -- yes,  
20 you're right. This diagram shows reads.

21          Q. And it shows the PLL affecting the data output  
22 from the data output buffer; correct?

23          A. Yes.

24          Q. Does the PLL affect in any way the timing of  
25 data from the memory array going to the data output

1 buffer?

2 A. It's not clear.

3 Q. Now, you testified yesterday also about the  
4 little diagram that appears at the bottom of this  
5 picture which shows the clock signal and the internal  
6 clock in sync.

7 Do you see that?

8 A. Yes, I do.

9 Q. And you said that they were synchronized by  
10 variable delay. Do you recall that?

11 A. Yes, I do.

12 Q. What on this diagram indicates to you that they  
13 were synchronized through the use of a variable delay  
14 element?

15 A. Well, because you're sending two clock signals  
16 into the PLL.

17 Q. Isn't it the case that that PLL could be  
18 synchronizing the internal clock with the clock using  
19 an oscillator?

20 A. Well, but then you wouldn't require sending two  
21 clocks into the PLL; you would just have one input.  
22 This is showing two inputs from the left-hand side and  
23 one output to the right.

24 Q. You see two clocks going in at the left-hand  
25 side?

1 A. Yeah. Clock and I-clock.

2 Q. Oh, you're talking about the little diagram?

3 A. Oh, yeah. What -- I'm sorry. Then maybe I  
4 misunderstood your question.

5 Q. Perhaps we're talking at cross-purposes.

6 At the top of this diagram, a clock signal goes  
7 into the PLL; right?

8 A. Correct.

9 Q. And I-clock comes out of the PLL; right?

10 A. And then feeds back into the PLL, yes.

11 Q. Oh, I see what you're saying.

12 A. Yes.

13 Q. Now, if you were using a PLL with an  
14 oscillator, you would -- that's a loop; correct? It's  
15 called a phase-locked loop; is that right?

16 A. Yes.

17 Q. So something from the output of the PLL feeds  
18 back into the PLL; right?

19 A. Correct.

20 MR. DETRE: I think this would be a good time  
21 for a break, Your Honor, if that's okay.

22 JUDGE McGUIRE: That's fine. We'll take a  
23 ten-minute break.

24 But before we go, I want to ask of any  
25 respondent, the other day I granted provisional

1 in camera treatment to some items of Micron, and I'm  
2 getting ready to issue an order on that pending motion.  
3 Was there any opposition that you intended to file on  
4 that, Mr. Perry?

5 MR. PERRY: Your Honor, I wasn't involved in  
6 that. If I could get back to you at the lunch break  
7 with an answer to your question.

8 JUDGE McGUIRE: Okay. Because if you are, your  
9 time is if not already expired is about to, so...

10 MR. PERRY: I'll take that into consideration  
11 when discussing it.

12 JUDGE McGUIRE: So will I.

13 All right. Thanks very much.

14 This hearing is in recess for ten minutes.

15 MR. DETRE: Thank you, Your Honor.

16 (Recess)

17 BY MR. DETRE:

18 Q. Professor Jacob, before the break, we were  
19 talking about PLLs; correct?

20 A. Yes, we were.

21 Q. And you testified earlier that a PLL has an  
22 oscillator in it; right?

23 A. Yes, I did.

24 Q. And a PLL also has a phase comparator in it; is  
25 that right?



1 A. Correct.

2 Q. And the phase comparator compares the phase of  
3 two signals; is that right?

4 A. It -- yes.

5 Q. And it uses those two signals then to generate  
6 the signal output by the PLL?

7 A. It uses two signals -- that's not a very  
8 precise statement. What do you mean?

9 Q. It uses information gleaned from those two  
10 signals in order to generate the output?

11 A. The comparator? The comparator doesn't  
12 generate the output.

13 Q. The PLL.

14 A. Oh, the PLL. The PLL has an oscillator and a  
15 reference and it synchronizes the oscillator's output  
16 to the reference.

17 Q. Yesterday you testified about Rambus'  
18 '327 patent. Do you recall that?

19 A. Yes, I do.

20 Q. Let me hand you a copy of CX-1494.

21 May I approach, Your Honor?

22 JUDGE McGUIRE: Yes.

23 BY MR. DETRE:

24 Q. If we could go to page 23 of the patent.

25 And if we could blow up claim 1.

1           And claim 1 begins, "A dynamic random access  
2 memory (DRAM) comprising a first circuit for providing  
3 a clock signal."

4           Do you see that?

5           A. Yes, I do.

6           Q. Now, that part of claim 1 indicates to you  
7 that claim 1 is referring to a synchronous DRAM;  
8 correct?

9           A. No. It indicates to me that it's -- it is  
10 referring to a DRAM that has a clock signal.

11          Q. Do you still have your report handy?

12          A. My what?

13                 JUDGE McGUIRE: Your expert report.

14                 THE WITNESS: My expert report.

15                 MR. DETRE: Thank you.

16                 BY MR. DETRE:

17          Q. And if you would turn to page 48.

18                 And on that page, you have a chart analyzing  
19 the '327 patent; right?

20          A. Uh-huh.

21          Q. And in the top left box on the right-hand side,  
22 you have the language I just read you from claim 1 of  
23 the '327 patent?

24          A. Yes.

25          Q. "Dynamic random access memory (DRAM)

1 comprising a first circuit for providing a clock  
2 signal"; right?

3 A. Correct.

4 Q. And then in the box next to that you have claim  
5 interpretation; right?

6 A. Yes, I do.

7 Q. And you were interpreting that claim as a  
8 person of ordinary skill in the art there; right?

9 A. Yes.

10 Q. And you state, "This claim applies to a  
11 synchronous DRAM, i.e., one that uses a clock signal to  
12 time the DRAM's operations"?

13 A. Correct. I thought you were -- I thought you  
14 meant synchronous as in capital S.

15 Q. Oh, no. I meant synchronous. --

16 A. Yes.

17 Q. -- as you defined it yesterday, namely a DRAM  
18 which uses the system clock to drive the DRAM's  
19 operations.

20 A. What's the question?

21 Q. When you referred to this claim applying to a  
22 synchronous DRAM on page 48, you meant synchronous the  
23 way you defined it yesterday as a DRAM in which a  
24 system clock is used to drive not only the memory  
25 controller's operations but also the DRAM?

1           A. No. Right here I say very clearly what I mean.  
2 I say a synchronous DRAM is one that uses a clock  
3 signal to time the DRAM's operations. That's...

4           Q. Now, isn't it a fact that in DDR SDRAMs the  
5 system clock is all but ignored in the data transfer,  
6 in the data transfer portion of DDR write requests?

7           A. Correct.

8           Q. In fact, in DDR SDRAMs, the DRAM samples the  
9 incoming data with respect to not that clock but  
10 instead a separate signal known as a DQS; right?

11          A. Correct.

12          Q. That's sometimes also referred to as a data  
13 set; right?

14          A. Yes.

15          Q. Now, if you've still got the '327 patent  
16 there, yesterday you also -- CX-1494, page 23, the top  
17 right-hand column -- you also discussed claim 7; right?

18          A. Yes, I did.

19          Q. And one of the elements that claim 7 requires  
20 is a multiplexer; right?

21          A. Yes.

22          Q. Now, isn't it the case that if you could come  
23 up with a circuit that performs the function that the  
24 multiplexer performs in some DDR SDRAMs but isn't a  
25 multiplexer, then the multiplexer isn't a necessary

1 part of the DDR specification?

2 A. In theory, yes, but in reality, there's no such  
3 thing that performs the function of a multiplexer that  
4 isn't a multiplexer. A multiplexer by definition is  
5 something that multiplexes between things and it  
6 says -- the term itself has no implications of its  
7 implementation, so anything that multiplexes between  
8 two inputs is by definition a multiplexer.

9 Q. Well, when -- you could do types of  
10 interleaving between two banks without a multiplexer,  
11 couldn't you?

12 A. Correct.

13 Q. Going back briefly to your discussion about  
14 alternatives yesterday, you proposed, as we discussed  
15 earlier, a number of different alternatives to four  
16 features found in SDRAMs and DDR SDRAMs; right?

17 A. Yes.

18 Q. Now, you can't say with any certainty what the  
19 cost would be to implement any of the alternatives that  
20 you discussed yesterday; isn't that right?

21 A. Well, I list the advantages and disadvantages  
22 wherever appropriate and I discuss cost in a general  
23 sense in that this would require more design effort,  
24 this would require less design effort, more pins, fewer  
25 pins, that sort of thing.

1 Q. Beyond that, you can't specify with any  
2 certainty what the costs would actually be, can you?

3 A. No. I've not done an economic analysis of the  
4 implications.

5 Q. Now, yesterday you also testified about the  
6 implications of a redesign today. Do you recall that?

7 A. Yes, I do.

8 Q. Now, if we go back a little bit further in  
9 time, isn't it correct to say that with respect to  
10 programmable CAS latency and programmable burst length  
11 in SDRAMs that many alternative technologies could have  
12 been used even in the mid-1990s after the SDRAM  
13 standard was set but before it had become widely  
14 deployed?

15 A. Correct.

16 Q. And moving on to the DDR standard, isn't it a  
17 fact that JEDEC could have eliminated programmable CAS  
18 latency and programmable burst mode from the DDR  
19 standard at any point prior to the standard being  
20 finalized?

21 A. Yes.

22 Q. Now, you mentioned with respect to many of your  
23 proposed alternatives that if you were to try to  
24 implement those today, it would cause disruption, it  
25 could cause a slippage in DRAM production schedules.

1 Do you recall that?

2 A. Yes, I do.

3 Q. Can you quantify in any way the degree of  
4 disruption or the amount of slippage that any of your  
5 alternatives would have caused?

6 A. Well, I can talk about it in general terms.  
7 DRAMs take several years from design, beginnings of the  
8 design stage to when you have the final part that's  
9 shipping, so it depends upon what sort of redesign is  
10 required, how much of the design is going to be  
11 changed. It could affect it by anywhere from, you  
12 know, months to years.

13 Q. Have you tried to quantify precisely any of the  
14 alternatives you proposed about how much time it would  
15 take?

16 A. No.

17 Q. Now, turning to another topic, yesterday you  
18 discussed some patents that were disclosed to JEDEC in  
19 Rambus' withdrawal letter. Do you recall that?

20 A. Yes, I do.

21 Q. Let me get you a copy of that.

22 May I approach, Your Honor?

23 JUDGE McGUIRE: Yes.

24 BY MR. DETRE:

25 Q. CX-887.

1           And if we could turn to page 2, that contains  
2 the list of Rambus patents you discussed; right?

3           A. Yes, it does.

4           Q. And if we could just -- thanks, Matthew.

5           Now, the very first patent on that list is  
6 patent number -- let me step back for a second. Excuse  
7 me.

8           Now, you testified yesterday that all of these  
9 patents fall into one of three categories. Do you  
10 recall that?

11          A. I believe I said at least one of three.

12          Q. And the three categories that you mentioned  
13 were: one, restricted to a narrow, packetized bus;  
14 two, outside the scope of JEDEC's 42.3 committee; or  
15 three, describing minor implementation details that  
16 JEDEC did not consider.

17           Do you recall that?

18          A. Yes.

19          Q. Now, the first patent on the list is patent  
20 number 5,319,575 (sic). Do you see that?

21          A. Yes, I do.

22          Q. Now, that patent --

23          A. Can I make one clarification? The use of the  
24 word "consider" is probably too broad. I probably  
25 should have said did not include in the standard.



1 Q. Now, that patent focuses on low-voltage swing  
2 signaling; correct?

3 A. Just looking at the number, I don't know.

4 Q. Well, perhaps your recollection would be  
5 refreshed by looking at page 38 of your expert report.

6 A. Sure.

7 Q. If you'd look at the very last patent on  
8 that -- well, excuse me. I got my patent numbers mixed  
9 up, so I'm glad -- this has actually refreshed my  
10 recollection. I don't mean to be focusing on the top  
11 patent. I mean to be focusing on one further down,  
12 5,473,575.

13 A. Okay.

14 Q. And that one in fact focuses on low-voltage  
15 swing signaling; correct?

16 A. I believe so.

17 Q. Pardon me?

18 A. Yes.

19 Q. Yes.

20 And if we look at the second patent on the  
21 list, number 5,355,391, that patent focuses on current  
22 mode drivers; correct?

23 A. Yes. I believe so.

24 Q. Now, yesterday you testified about Rambus'  
25 '898 patent application. Do you recall that?

1 A. Yes.

2 Q. Let me hand you a copy.

3 May I approach, Your Honor?

4 JUDGE McGUIRE: Yes.

5 BY MR. DETRE:

6 Q. And that's CX-1451.

7 And if we could turn to page 16, please.

8 And there's some discussion on that page I  
9 believe you discussed with Mr. Oliver of access-time  
10 registers. Do you recall that?

11 Are you on the right page, Professor Jacob?

12 A. This is 16, CX-1451-016?

13 Q. Yes.

14 And in the second paragraph it discusses  
15 access-time registers and again in the third  
16 paragraph?

17 A. Okay. Yes. Access-time registers, yes.

18 Q. Now, if we look at the first part of the last  
19 paragraph on that page, it begins, "Most of these  
20 registers can be modified and preferably are set as  
21 part of an initialization sequence that occurs when the  
22 system is powered up or reset"; right?

23 A. Yes, I do see that.

24 Q. And I believe yesterday you testified that in  
25 common use anyway, the mode register in SDRAMs is --

1 the programmable CAS latency in the mode registers in  
2 SDRAMs is set at initialization; is that right?

3 A. Correct.

4 Q. Now, if we look a little bit further down in  
5 that paragraph, I believe it's the second to last  
6 sentence, beginning, "Each slave" -- you can just blow  
7 up the whole paragraph.

8 The second to last sentence: "Each slave may  
9 have one or several access-time registers"; right?

10 A. Yes, I see that.

11 Q. And "slave" in that sentence can refer to a  
12 DRAM; is that right?

13 A. Yes.

14 Q. Now, if we could turn ahead to page 148 of this  
15 document, figure 12 of the patent.

16 You testified about that yesterday; correct,  
17 Professor Jacob?

18 A. Yes.

19 Q. And you testified I believe that figure 12 does  
20 not show either a PLL or a DLL?

21 A. Yes.

22 Q. But figure 12 does look like two DLLs coupled  
23 together, doesn't it?

24 A. It looks vaguely like two DLLs coupled  
25 together, but it -- it isn't.

1 Q. It's got variable delay circuitry?

2 A. Absolutely.

3 Q. It's got a feedback loop?

4 A. It's got a feedback loop.

5 Q. It is true, however, that the '898 application  
6 nowhere shows a PLL circuit with an oscillator; right?

7 A. Correct.

8 Q. You don't have any patents in your name, do  
9 you, Professor Jacob?

10 A. No.

11 Q. Now, many JEDEC representatives have numerous  
12 patents in their names; right?

13 A. I have no way of knowing.

14 Q. Well, you spoke to Desi Rhoden in connection  
15 with your work on this case; right?

16 A. Yes, I did.

17 Q. Did Mr. Rhoden tell you, as he testified here  
18 at this trial, that he has 15 or 20 patents?

19 A. He did not tell me that.

20 Q. You spoke to Mark Kellogg of IBM in connection  
21 with your work on this case; is that right?

22 A. Yes, I did.

23 Q. Did Mr. Kellogg tell you that he has over  
24 35 patents?

25 A. No, he did not.

1 Q. You spoke to Kevin Ryan of Micron in connection  
2 with this case; is that right?

3 A. Yes, I did.

4 Q. Did Mr. Ryan tell you that he has over  
5 30 patents?

6 A. No, he did not.

7 Q. Now, do you know whether Rambus has any patents  
8 that cover the use of programmable CAS latency as it's  
9 used in SDRAMs?

10 MR. OLIVER: Objection, Your Honor. Beyond the  
11 scope of his report and beyond the scope of his  
12 testimony.

13 JUDGE McGUIRE: Sustained.

14 BY MR. DETRE:

15 Q. You understand, Professor Jacob, that before a  
16 patent claim is allowed to issue by the patent office,  
17 the patent examiner reviews the claim in the  
18 application to determine whether the claim meets  
19 certain criteria?

20 A. Yes.

21 Q. One of those criteria is called the written  
22 description requirement; is that right?

23 MR. OLIVER: Objection, Your Honor. It goes  
24 beyond the scope of the expertise of this witness.

25 JUDGE McGUIRE: I'll let him answer that if he

1 can.

2 THE WITNESS: What is the question again?

3 BY MR. DETRE:

4 Q. Are you familiar with a requirement for patents  
5 called the written description requirement?

6 A. I -- not by that name. That doesn't, you  
7 know --

8 Q. Okay. Well, you understand that after a patent  
9 application is filed, additional claims can then be  
10 filed in what are sometimes called continuation  
11 applications?

12 A. Yes.

13 Q. And that in order to be valid, those -- the  
14 patent application as originally filed must convey with  
15 reasonable clarity to those of ordinary skill in the  
16 art that the applicant was in possession of the  
17 invention being claimed as of the filing date of the  
18 application?

19 MR. OLIVER: Objection, Your Honor.  
20 Requirements for validity of a patent are beyond this  
21 witness' expertise.

22 JUDGE McGUIRE: Sustained.

23 BY MR. DETRE:

24 Q. So, Professor Jacob, you're not offering any  
25 opinion as to whether Rambus has any patents that cover

1 the SDRAM or DDR SDRAM JEDEC-compliant devices?

2 A. Well, as I've shown, I found patent claims that  
3 were active or were being considered at the time of  
4 Rambus' involvement in JEDEC and I've shown there are  
5 claims that would cover SDRAM's programmable CAS  
6 latency. Whether all of those claims or any of those  
7 claims were ultimately granted I don't know offhand. I  
8 don't know if that's what you're asking, but I've shown  
9 that claims -- there existed claims at the time that  
10 covered it.

11 Q. You don't know whether any of those claims  
12 actually issued in patents?

13 A. I don't know off the top of my head.

14 Q. Well, didn't you testify yesterday that claims  
15 of the '327 patent in your opinion would cover  
16 DDR SDRAM devices?

17 A. Like I said, I don't know the numbers the way  
18 you guys do. If you say "'327 patent," that doesn't  
19 necessarily recall to me any particular.

20 Q. I think you've got it in front of you. It's  
21 CX-1494.

22 A. Okay. CX-1494.

23 Q. I believe you testified about claims 1 and 7.

24 A. All right. Let's see.

25 Okay. Yes, the dual-edged clocking patent.

1 Okay. Yes, I'm with you.

2 Q. And that was your testimony yesterday, that in  
3 your opinion those claims read on DDR SDRAM devices?

4 A. Yes.

5 Q. And you know that these claims were duly issued  
6 by the patent office; right?

7 A. I would assume so. This looks like an issued  
8 patent.

9 Q. And you don't know what criteria the patent  
10 office applies when it chooses to issue claims, that's  
11 outside the scope of your expertise; is that right?

12 A. You mean, for example, I don't know how the  
13 patent office decides to issue claims on biomedical  
14 stuff or -- is that what you mean?

15 Q. No. I mean you don't know --

16 A. Issue claims outside of my expertise?

17 Q. No. I mean you don't know that when the patent  
18 office decides to issue a claim, it checks whether the  
19 patent application as originally filed conveys to  
20 persons of reasonable skill -- of ordinary skill in the  
21 art that the applicant was in possession of the  
22 invention claimed as of the date of the filing of the  
23 application.

24 A. Are you asking me --

25 Q. I'm asking whether you know that the patent --



1           A.    -- how I interpret patent claims as an  
2 engineer or are you -- and how that would be different  
3 from the way a patent examiner would interpret the  
4 claims or...

5           Q.    No.  I'm asking you whether you know, one way  
6 or the other, that before a patent examiner will allow  
7 a claim, he checks to see whether the application as  
8 originally filed would convey with reasonable clarity  
9 to a person of ordinary skill in the art that the  
10 applicant was in possession of the invention being  
11 claimed when he filed his original patent application.

12          A.    And I'm still lost on the question.  I think  
13 what you're saying is do I know what patent  
14 examiners -- do I know how patent examiners go about  
15 their job, and since I'm not a patent examiner, I don't  
16 know exactly what they do, but I can tell you what  
17 standards I used to interpret these claims.

18                JUDGE McGUIRE:  Well, that's not the question,  
19 so...

20                BY MR. DETRE:

21          Q.    Okay.  Well, let me ask that question.

22                Did you, in reviewing these claims of the  
23 '327 patent, determine whether the patent application  
24 as originally filed -- that's the '898 application --  
25 conveyed with reasonable clarity to those of ordinary

1 skill in the art that the applicant was in possession  
2 of the invention being claimed as of the filing of  
3 that --

4 A. Oh, I think I see what you're saying. Okay.  
5 No. My understanding is that you -- that it's -- you  
6 look at the specification that accompanies the claims.

7 Q. Did you check to see whether the specification  
8 of the '327 patent was in all material respects  
9 identical to the '898 application?

10 A. I did not do a line-by-line verification that  
11 there's no typographical differences or omissions, but  
12 I did scan through it to make sure that it's similar,  
13 yes. And that's my understanding, that these are  
14 similar.

15 Q. Okay. So did you, in reviewing the claims of  
16 the '327 patent, determine whether the specification of  
17 the '327 patent conveyed with reasonable clarity to  
18 those of ordinary skill in the art that the applicant  
19 was in possession of the invention being claimed?

20 A. Is there any way you can restate that? You're  
21 using really torturous English.

22 JUDGE McGUIRE: I'm having a little trouble  
23 understanding it myself.

24 THE WITNESS: Good. I thought maybe I'm an  
25 imbecile over here. But no, I'm really not following

1 that.

2 BY MR. DETRE:

3 Q. Okay. Did you check to see whether there was  
4 sufficient support in the specification of the  
5 '327 patent so that one of ordinary skill in the art  
6 would understand that Rambus could claim the inventions  
7 that it actually is claiming in the claims?

8 A. Oh, did I do a validity check on the claim?

9 Q. Well, that's one aspect of patent validity, I  
10 agree with you.

11 A. I did not try to do a validity check on this  
12 patent. I just read the claims as an engineer versed  
13 in the art would interpret it, using common, normal  
14 meanings of the terms.

15 Q. Well, you testified that the claims of the  
16 '327 patent covered dual-edged clocking; right?

17 A. Yes.

18 Q. And you also testified that one of -- you  
19 testified that it covered dual-edged clocking as used  
20 in DDR SDRAMs; right?

21 A. Yes, I did.

22 Q. And you also testified that one of ordinary  
23 skill in the art looking at the specification of the  
24 '327 patent, substantially similar to the  
25 '898 application, wouldn't see dual-edged clocking?

1 A. Would not see.

2 Q. Would not see dual-edged clocking as used in  
3 DDR SDRAMs in there, didn't you?

4 A. Oh, I see what you're -- what I said was that  
5 the implementation -- okay. Okay.

6 What I was talking about at the time was would  
7 an engineer reading the '898 application, not the  
8 '327 patent but the '898 application, an engineer  
9 reading the '898 application, would they have thought  
10 that this implementation of dual-edged clocking was the  
11 same as JEDEC's implementation and I showed how the  
12 implementations were different.

13 Q. Okay. And so you think that an engineer of  
14 ordinary skill in the art reading the '898 application  
15 would not see in there support for claims covering  
16 dual-edged clocking as used in DDR SDRAMs; is that  
17 right?

18 MR. OLIVER: Objection, Your Honor. It  
19 mischaracterizes the testimony.

20 JUDGE McGUIRE: Sustained.

21 BY MR. DETRE:

22 Q. Do you know whether an engineer reading the  
23 '898 application would see in the '898 application  
24 support for claims to dual-edged clocking as used in  
25 DDR SDRAMs?

1           A. What I've shown is that an engineer in the  
2 early to mid-'90s reading the specification in the  
3 '898 application would have seen that this is a  
4 different implementation of dual-edged clocking than  
5 what was considered in JEDEC.

6           Q. And you don't know what an engineer would have  
7 realized about the breadth of claims that Rambus might  
8 be able to obtain based on that?

9           A. I mean, they could have -- I still don't quite  
10 get what you're getting at.

11          Q. Well, you've now said that all you testified  
12 about yesterday was the differences between Rambus'  
13 implementation in the '898 application of dual-edged  
14 clocking and the way it's implemented in DDR SDRAMs;  
15 right?

16           MR. OLIVER: Objection, Your Honor.  
17 Mischaracterizes the testimony.

18           MR. DETRE: Sustained.

19           BY MR. DETRE:

20          Q. You testified yesterday you discussed the  
21 differences between the implementation of dual-edged  
22 clocking as used in the '898 application and as used in  
23 DDR SDRAMs; right?

24          A. What I showed was that -- or the question that  
25 I was asked to answer was would an engineer reading the

1 '898 application have suspected that Rambus would be  
2 able to claim intellectual property over the work that  
3 was going on within JEDEC, and what I showed was that  
4 an engineer would have read the application and seen  
5 that it was a different implementation of dual-edged  
6 clocking, and so an engineer would not have suspected  
7 that.

8 Now, that's, you know -- I answered the  
9 question I was asked to answer.

10 Q. So an engineer looking at the specification in  
11 the '327 patent would also have seen that it's a  
12 different implementation of dual-edged clocking than  
13 what's in DDR SDRAMs; right?

14 A. Very possibly.

15 Q. But in your opinion, the claims of the  
16 '327 patent do read on DDR SDRAMs; right?

17 A. Yes.

18 Q. Now, in connection with your testimony -- well,  
19 yesterday you testified that in your opinion no  
20 reasonable engineer would have understood from looking  
21 at Rambus' original '898 application that Rambus might  
22 someday have patents covering various features in JEDEC  
23 standard devices; right?

24 A. That sounds familiar.

25 Q. In reaching that opinion, did you look at any

1 of the evidence about what technical information was  
2 provided by Rambus to various DRAM companies in the  
3 early 1990s?

4 A. I don't believe so. That was largely centered  
5 on the '898 application.

6 Q. Do you know whether or not any engineers ever  
7 reviewed Rambus' '898 application in the early 1990s?

8 A. I believe it was made available to JEDEC,  
9 either in its application form or as the specifications  
10 of patents.

11 Q. Did anyone ask you to give an opinion about  
12 whether a reasonable engineer would have understood  
13 from looking at Rambus' international patent  
14 application whether Rambus might someday have patents  
15 covering features in various JEDEC standard devices?

16 A. No. I was -- I've been -- it's my  
17 understanding that it is substantially the same as the  
18 '898 application.

19 Q. Now, before you gave your opinion about what  
20 reasonable engineers would or would not understand, did  
21 you make any effort to learn whether there was any  
22 evidence that what engineers actually did understand in  
23 that time frame about Rambus' patent application?

24 A. Such as?

25 Q. Anything -- any documents?

1           A. Well, I read numerous articles from the time  
2 period, you know, trade publications, things in  
3 EETimes, and so forth.

4           Q. Well, let me show you some documents and ask  
5 you whether you considered them.

6                   May I approach, Your Honor?

7                   JUDGE McGUIRE: Yes.

8                   BY MR. DETRE:

9           Q. RX-286-A.

10                   Now, if we blow up the top portion of this with  
11 the names, this is identified as being from W. Meyer of  
12 Infineon, employee, and this is about a telephone  
13 conference, participants Gordon Kelley IBM, Dr. Peisl  
14 and Mr. Meyer.

15                   Dr. Peisl was one of the people you spoke to;  
16 correct, Professor Jacob?

17           A. Yes.

18           Q. And if we turn to the second page, there's a  
19 paragraph the second from the bottom headed Rambus.

20                   Do you see that?

21           A. Yes, I do.

22           Q. And the second sentence there states, "Rambus  
23 has announced a claim against Samsung" -- well,  
24 actually, excuse me. Let me just go back to the first  
25 page for one second. Sorry.



1           And if we go up to the very top, you see the  
2   date 4-30-92.

3           Do you see that, Professor Jacob?

4           A. Yes, I do.

5           Q. Okay. And now, if we can go back to that  
6   paragraph on Rambus, "Rambus has announced a claim  
7   against Samsung for USD 10 million due to the  
8   similarity of the SDRAM with the Rambus storage device  
9   architecture."

10          Do you see that?

11          A. Yes, I do.

12          Q. Did you consider this information in  
13   Exhibit RX-286-A in forming your opinion about the  
14   state of mind of a reasonable engineer in the early  
15   1990s?

16          A. No, I did not.

17          Q. Well, let me show you another document.

18                 May I approach, Your Honor?

19                 JUDGE McGUIRE: Yes.

20                 BY MR. DETRE:

21          Q. RX-290.

22                 And these are some notes taken by Mark Kellogg  
23   at the JEDEC JC-42.3 meeting in New Orleans, May 7,  
24   1992, it says at the very top.

25                 Do you see that heading?

1 A. Yes, I do.

2 Q. And you spoke to Mr. Kellogg; right, in  
3 connection with this case?

4 A. I believe so.

5 Q. Now, if you could turn to page 3 of that  
6 document, there's a heading Siemens, the fourth one  
7 down.

8 Do you see that?

9 A. Yes.

10 Q. It says: "Kernel of chip. Similar to Rambus."

11 Do you see that?

12 A. Yes, I do.

13 Q. Were you here for Mr. Kellogg's testimony last  
14 Friday?

15 A. No, I was not.

16 Q. Are you aware that he testified that this is a  
17 reference to the similarity in the fundamental  
18 architecture of the SDRAM and a Rambus device?

19 A. No.

20 Q. And then after that it says "Patent concerns?"

21 Do you see that?

22 A. Yes, I do.

23 Q. Now, you didn't consider this document either  
24 in coming up with your opinion about reasonable  
25 engineers; is that right?

1 A. No.

2 Q. Now, in talking to Mr. Kellogg, did you find  
3 him to be a reasonable engineer?

4 A. Yes. Yes, I did.

5 Q. Let's look a little bit --

6 MR. PERRY: Pardon me, Your Honor.

7 (Pause in the proceedings.)

8 BY MR. DETRE:

9 Q. Let me just clarify one point. Mr. Perry has  
10 pointed out that due to my inartful phrasing of a  
11 question, a double negative, an answer may not have  
12 been clear.

13 A. Oh.

14 Q. Did you consider this document RX-290 in  
15 forming your opinions in this case about what a  
16 reasonable engineer would have understood?

17 A. I don't think so.

18 Q. Let's go back to 290, page 3.

19 If we could look a couple of lines below the  
20 Siemens reference, there is a reference headed NEC.

21 Do you see that?

22 A. Yes.

23 Q. And it says "Rambus international patent  
24 150 pages."

25 Do you see that?

1 A. Yes.

2 Q. And then it says, a sentence later, "Suspect  
3 claims won't hold."

4 Do you see that?

5 A. Yes, I do.

6 Q. And you said your understanding was that the  
7 international application was similar or identical in  
8 material respects to the '898 application; is that  
9 right?

10 A. Yes. That's what's been related to me.

11 Q. Now, those notes taken from what the NEC  
12 representative said, they don't say that the  
13 application is irrelevant, do they?

14 MR. OLIVER: Objection, Your Honor. I believe  
15 the witness has already said he did not believe he  
16 considered this document in forming his opinion.

17 MR. DETRE: Sustained.

18 BY MR. DETRE:

19 Q. Have you spoken to Howard Sussman, who was the  
20 NEC representative at that time in 1992?

21 A. Well, I don't know that he was the NEC  
22 representative, but I have spoken to Howard Sussman,  
23 yes.

24 Q. In connection with this case; right?

25 A. In connection with this case.

1 Q. And did he tell you that he had looked at  
2 Rambus' international patent application?

3 A. Not specifically.

4 Q. Now, did you do anything to discover whether  
5 after JEDEC -- after Rambus' patent application was  
6 discussed at a JEDEC meeting, whether any JEDEC members  
7 actually got ahold of it and studied it?

8 A. Okay. That's a really complex question.

9 Q. Did you do anything to learn whether any JEDEC  
10 members actually studied Rambus' international patent  
11 application?

12 A. Well -- no. I did not ask them specifically if  
13 they read the international patent application.

14 Q. Let me show you another document.

15 May I approach, Your Honor?

16 JUDGE McGUIRE: You may.

17 BY MR. DETRE:

18 Q. RX-406.

19 I won't ask you to read the front page of that,  
20 Professor Jacob, but there is a translation.

21 A. Thank you very much.

22 Q. And if you would turn to page 4 of this  
23 document.

24 And if we could blow up the bottom, there are  
25 numbered paragraphs, number 3. And actually -- no.

1 That's fine.

2 Do you see, Professor Jacob, that this document  
3 is dated June 10, 1993 at the top?

4 A. Yes, I see that.

5 Q. And I'll indicate to you that this is a  
6 document produced by Mitsubishi.

7 MR. OLIVER: Excuse me, Your Honor. Before we  
8 continue, could we have a foundation to see if this  
9 witness has considered this document?

10 JUDGE McGUIRE: Mr. Detre?

11 MR. DETRE: Well, I'd like to focus him on a  
12 particular part of the document and ask him if he's  
13 considered that.

14 JUDGE McGUIRE: Okay. You may ask that.

15 BY MR. DETRE:

16 Q. If we could look down at the bottom of this  
17 document, it states, "The individual technologies that  
18 appear in the Rambus patent will be used independently  
19 in the future."

20 Do you see that part down at the bottom?

21 A. Yes, I see that.

22 Q. "There is a need to examine the specifications  
23 of the patent claims to determine whether individual  
24 technologies used independently will infringe on the  
25 Rambus patent, and for that we will have to obtain the

1 views and interpretations of experts."

2 And then a little bit below that in  
3 paragraph 4: "What are the measures for dealing with  
4 this? The buses of the future will not be limited to  
5 the Rambus, but we will probably be able to use  
6 technological elements that are partially similar to  
7 Rambus as described in 3."

8 Did you consider that, Professor Jacob, when  
9 you formulated your opinion about what reasonable  
10 engineers would have understood in looking at Rambus'  
11 patent application?

12 A. No, I did not.

13 Q. Let me show you one more document, RX-2213-A.  
14 And if I may approach, Your Honor?

15 JUDGE McGUIRE: Yes.

16 MR. DETRE: And just as a question of timing,  
17 Your Honor, I only have about five more minutes on this  
18 line of questioning and then I'll be done.

19 JUDGE McGUIRE: All right. Very good.

20 BY MR. DETRE:

21 Q. And this is another Mitsubishi document.

22 If you could turn to the fifth page, Bates  
23 number MEC 001424 at the bottom.

24 Have you got that page? And I'm not going to  
25 ask you to read that page either, but there are parts

1 of it you can read.

2 Do you see it says "Rambus" at the top?

3 A. Yes.

4 Q. And I'll point you to a translated page  
5 shortly, but I just want to see if you see "Rambus" at  
6 the top.

7 A. Yes, I see "Rambus" at the top.

8 Q. Then in the box below that it says "103."

9 Do you see that? Near the top?

10 MR. OLIVER: Objection, Your Honor. Could we  
11 establish a foundation and see if this witness has ever  
12 seen this document before?

13 JUDGE McGUIRE: It would be a lot easier,  
14 Mr. Detre, if you would just ask that question first  
15 and then we could perhaps save some time if he hasn't  
16 seen it.

17 MR. DETRE: Okay. Your Honor, if I could just  
18 point him perhaps to the last translated page, because  
19 perhaps he would not recognize the Japanese.

20 JUDGE McGUIRE: Okay. Well, I'll let you do  
21 that.

22 BY MR. DETRE:

23 Q. If we could go to the very last page of this  
24 document, and just looking about halfway down the page  
25 where it says -- I'm just going to read one line,



1 Your Honor, and ask him if that refreshes his  
2 recollection of this document.

3 JUDGE McGUIRE: Go ahead.

4 BY MR. DETRE:

5 Q. Where it says "103 similar to SDRAM latency  
6 control," do you see that?

7 A. Yes, I do.

8 Q. Do you recall considering this document when  
9 determining what a reasonable engineer would have  
10 understood, Professor Jacob?

11 A. No.

12 Q. Now, one of the features that you spent a long  
13 time on yesterday was programmable latency; right?

14 A. Yes.

15 Q. Now, did you ever see any evidence in  
16 connection with your work on this case that reasonable  
17 engineers thought that the use of programmable latency  
18 in a DRAM was something new and different?

19 A. Did I see evidence during the course of my  
20 evaluation that engineers thought it would -- is that  
21 what you're saying?

22 Q. Yeah, whether engineers thought that using  
23 programmable latency in a DRAM was a really novel  
24 inventive feature.

25 A. No. I didn't see anything that specifically

1 said, hey, latency is a novel, you know, hey, this is a  
2 great new idea.

3 Q. Let me just show you --

4 A. Not that I recall at least.

5 Q. -- show you a document and see if it refreshes  
6 your recollection about whether you saw anything like  
7 that, RX-199.

8 May I approach, Your Honor?

9 JUDGE McGUIRE: Go ahead.

10 BY MR. DETRE:

11 Q. This is a fax. It's dated December 10, 1991,  
12 from Jim Townsend.

13 And if I could just turn right away to page 2  
14 and just point you to one sentence and ask if it  
15 refreshes your recollection about whether you saw this  
16 document.

17 It says at the very top of page 2, "Kalter of  
18 IBM said programmable latency was the cleverest item  
19 Toshiba ever created."

20 Do you see that?

21 A. Yes.

22 Q. Does that refresh your recollection about  
23 whether you actually saw this document or any other  
24 about the inventiveness of programmable latency?

25 A. I've seen that sentence. I don't recall if I

1 read it from this document or if I read it in one of  
2 the trial transcripts or deposition transcripts, but  
3 that, that sentence certainly looks familiar.

4 Q. Oh, you saw that one?

5 Now, as we discussed earlier today, it's your  
6 opinion that a reasonable engineer would have  
7 understood from looking at the '327 patent's claims  
8 that it covered the use of dual-edged clocking in  
9 DDR SDRAMs; right?

10 A. Yes.

11 Q. Let me show you a document, RX-1214.

12 May I approach, Your Honor?

13 JUDGE McGUIRE: Yes.

14 BY MR. DETRE:

15 Q. This is apparently an e-mail from Mr. H.J. Oh  
16 of Hyundai to Farhad Tabrizi and various other people,  
17 with a list of Rambus patents, and if you look at  
18 number 22 down on the list -- excuse me -- 23, you see  
19 the '327 patent; right?

20 A. I see something that ends "327." Is that the  
21 same number? Is that the same '327 patent?

22 Q. I'll represent to you that it is.

23 A. Okay.

24 Q. And this e-mail is dated July 13, 1998;  
25 correct?

1 A. Yes.

2 Q. Now, did you interview any of the engineers  
3 from Micron, Hynix, Texas Instruments, IBM, Siemens,  
4 Mitsubishi, Compaq or VLSI who got this e-mail?

5 A. Yes, I did.

6 Q. You spoke to Mr. Rhoden, for example; right?

7 A. Yes, I did.

8 Q. He got this e-mail?

9 A. Well, according to the cc list, yes, he did.

10 Q. And you spoke to Terry Lee at Micron, for  
11 example?

12 A. Yes.

13 Q. He's on this e-mail?

14 A. I spoke to him. I'm looking for his name.  
15 Yes, T. Lee.

16 MR. OLIVER: Objection, Your Honor. To the  
17 extent this line of questioning --

18 JUDGE McGUIRE: Okay. Mr. Detre, it would just  
19 save an awful lot of time if you could ask him that  
20 right off the bat and then actually we can save some  
21 time if he hasn't seen it. Now, that's an easier  
22 protocol for the court also to follow when it goes back  
23 through the transcript.

24 MR. DETRE: I'm actually going to ask him a  
25 hypothetical question based on this document.

1 BY MR. DETRE:

2 Q. Now, if these gentlemen who you spoke to and  
3 other gentlemen on the list were reasonable engineers,  
4 they would have known from looking at the '327 patent  
5 that it covered the DDR SDRAM device they were working  
6 on; right?

7 A. Yes.

8 Q. And you know that that device wasn't actually  
9 finally standardized until one year later in  
10 August 1999; right?

11 A. I believe that was when the final standard  
12 appeared, yes.

13 Q. Did you ask any of the engineers who received  
14 this e-mail, RX-1214, whether they had voted to  
15 standardize the DDR device after knowing that the  
16 '327 patent covered it?

17 A. No, I did not ask them that question.

18 MR. DETRE: I have no further questions.

19 JUDGE McGUIRE: Okay. Thank you, Mr. Detre.

20 It's ten after twelve. Why don't we take a  
21 break and convene again after lunch at 1:30.

22 MR. PERRY: Your Honor, it's up to you  
23 obviously. If Mr. Oliver has only a few seconds here,  
24 then some of our team can leave.

25 JUDGE McGUIRE: Oh. Well, sure.

1           Mr. Oliver, how much time do you anticipate to  
2 spend on redirect?

3           MR. OLIVER: I don't think I will spend much  
4 time. I need a couple of minutes to consult with --

5           JUDGE McGUIRE: That's fine. Let's go off the  
6 record and then let's go ahead and conclude on this  
7 witness. Right? Is that what we're talking about?

8           MR. PERRY: I appreciate that.

9           JUDGE McGUIRE: That's the idea; right?

10          MR. PERRY: Yes.

11          JUDGE McGUIRE: Okay. Very good.

12          (Discussion off the record.)

13          JUDGE McGUIRE: Mr. Oliver, you may proceed on  
14 redirect.

15          MR. OLIVER: Thank you, Your Honor.

16                               REDIRECT EXAMINATION

17          BY MR. OLIVER:

18          Q. Professor Jacob, if I could ask you to locate  
19 RX-2111 in front of you, please. This is the  
20 United States Court of Appeals decision that Mr. Detre  
21 showed you earlier today.

22          A. Yes, I have it.

23          Q. And if I could ask you to turn, please, to  
24 page 34.

25                               And then toward the bottom of the page is a

1 sentence that Mr. Detre asked you about: "Similarly,  
2 claims in the '961 application were limited to the  
3 device identifier feature."

4 Do you recall Mr. Detre asking you some  
5 questions about that?

6 A. Yes, I do.

7 Q. If I could then ask you to locate CX-1504 in  
8 front of you, please, one of the thick documents.

9 A. 1504. I have it.

10 Q. And Mr. Detre then asked you some questions  
11 about the amendment appearing at page 216 within  
12 CX-1504.

13 A. Yes. I'm there.

14 Q. And again, he pointed out the reference to the  
15 '961 application in the upper left-hand corner there  
16 and then asked you some questions about the claims, and  
17 you said that you recall that, if I recall your  
18 testimony correctly, that certain of those claims did  
19 contain references to the Rambus device identifier  
20 feature?

21 A. Yes.

22 Q. Do you recall that testimony?

23 A. Yes, I do.

24 Q. If I could ask you to turn, please, to  
25 page 219.

1           And if I could ask you to look specifically at  
2 claim 153 that appears in the bottom of that page and  
3 carries over to the top of page 220, and I'd like to  
4 ask you what, if any, language in claim 153 pertains to  
5 the Rambus device identifier feature.

6           A. For example, the phrase "wherein each  
7 semiconductor device is assigned an identification  
8 number based upon its position in the bus."

9           Q. And if you look above that, claim 152, is there  
10 similar language in that claim?

11          A. Yes, there is. The phrase "wherein the  
12 register is an identification register operative to  
13 store an identification number for the semiconductor  
14 device."

15          Q. And does that correspond to the device  
16 identifier feature contained in the '898 application?

17          A. Yes. Absolutely.

18          Q. And if I could then direct your attention to  
19 claim number 160, it appears at the bottom of page 221,  
20 CX-1504.

21          A. Yes. I'm there.

22          Q. And does -- is this one of the claims you  
23 analyzed yesterday? Do you recall that?

24          A. Yes.

25          Q. Does that claim contain any similar language?



1 A. No, it does not.

2 Q. If I could direct your attention to claim 151  
3 appearing on page 218, carries over to the top of  
4 page 219.

5 A. I'm there.

6 Q. Does that claim contain any language  
7 referencing the Rambus device identifier?

8 A. No, it does not.

9 Q. If I could ask you to look, please, at claim  
10 number 164 that appears on page 223.

11 A. All right.

12 Q. I apologize. I'm getting a little bit -- I'm  
13 getting ahead of my assistant at the computer.

14 Claim 164, is there any language in that claim  
15 that identifies the Rambus device identifier feature?

16 A. No, there is not.

17 Q. And likewise, claim 165 appearing at the same  
18 page?

19 A. No, there is no such language.

20 Q. Again, just to be certain the record is clear  
21 on that, is there any language in claim 165 that  
22 relates to the Rambus device identifier feature?

23 A. No. It does not explicitly identify a device  
24 identification feature. This is claim 165; correct?

25 Q. Yes.

1 A. Claim 166 does, but claim 165 does not.

2 Q. And again, claim 166, what language are you  
3 referring to?

4 A. The phrase "wherein the value specifies an  
5 identification number that uniquely identifies the  
6 semiconductor device."

7 Q. Claim 166 is not one of the claims that you  
8 testified about yesterday, is it?

9 A. No. No, it isn't. I was just making sure that  
10 I was reading the right claim.

11 MR. OLIVER: Nothing further, Your Honor.

12 JUDGE McGUIRE: Thank you, Mr. Oliver.

13 Any further recross, Mr. Detre?

14 MR. DETRE: No, Your Honor.

15 JUDGE McGUIRE: Okay. Thank you for your  
16 testimony, professor. You're excused from this  
17 proceeding.

18 THE WITNESS: Thank you, Your Honor.

19 JUDGE McGUIRE: Mr. Perry?

20 MR. PERRY: Yes, Your Honor. You asked me to  
21 get back to you on the Micron request for in camera  
22 treatment of the documents that supported the  
23 demonstratives, and Rambus does not oppose that  
24 request.

25 JUDGE McGUIRE: Thank you very much.

1           Counsel, it's about twenty after twelve. We'll  
2 reconvene at twenty until two.

3           Hearing in recess.

4           (Whereupon, at 12:16 p.m., a lunch recess was  
5 taken.)

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 A F T E R N O O N S E S S I O N

2 (1:40 p.m.)

3 JUDGE McGUIRE: This hearing is now in order.

4 Complaint counsel may call its next witness.

5 MR. OLIVER: Your Honor, because we were not

6 certain about the length of Professor Jacob's

7 testimony, we don't have any other live witnesses.

8 We're going to proceed with the deposition of

9 Mr. Joel Karp this afternoon.

10 JUDGE McGUIRE: Okay.

11 MR. OLIVER: Before we do that, I did promise  
12 you a courtesy copy of the demonstratives we used with  
13 Professor Jacob.

14 JUDGE McGUIRE: Oh, yes.

15 MR. OLIVER: May I approach, Your Honor?

16 JUDGE McGUIRE: Yes. And I guess your side  
17 already has a copy?

18 MR. STONE: Yes. He already provided them to  
19 us, Your Honor.

20 JUDGE McGUIRE: Okay. Thank you.

21 MR. WEBER: Good afternoon, Your Honor.

22 JUDGE McGUIRE: Good afternoon.

23 MR. WEBER: Let me hand up the hard copy of the  
24 video that we're looking at and I'll also hand up the  
25 FTC deposition which, when we finish the Infineon

1 deposition, we'll start with that one.

2 JUDGE McGUIRE: Okay.

3 Mr. Stone, where are all your colleagues? They  
4 must have found better things to do today.

5 MR. STONE: I think the excitement of the  
6 morning got to them, Your Honor.

7 MR. WEBER: Your Honor, we stopped at page 90 I  
8 believe, was where we got to.

9 JUDGE McGUIRE: Now, which one are we on?

10 MR. WEBER: We are on the Infineon one, which  
11 would be the January 9.

12 MR. STONE: And this one page, the one reason  
13 we stopped here, Your Honor, is because this one page  
14 is impacted I think by the order you issued this  
15 morning, and my view is that this one page is an  
16 effort to question about the brief without any showing  
17 that he had seen the brief before. I think your  
18 ruling this morning stands for the proposition that  
19 the question on page 90 should not be part of the  
20 record.

21 JUDGE McGUIRE: Well, like I said this morning,  
22 unless complaint counsel is able to lay an adequate  
23 foundation that Karp was involved in that brief being  
24 prepared, then it's hearsay and I'm not going to  
25 entertain any inquiries from that deposition.

1           MR. WEBER: Okay. The question and answer on  
2 page 90 starting at line 13 deals with whether or not  
3 Mr. Karp agrees with the statement about whether it's  
4 a proper definition of an open standard, and I don't  
5 think he actually needed the brief to ask the  
6 question.

7           So it's based on Mr. Karp's experience and it's  
8 not hearsay because Your Honor has already ruled that  
9 this deposition is a party admission.

10          JUDGE McGUIRE: How does it pertain then to the  
11 brief, Mr. Stone?

12          MR. STONE: Well, Your Honor, my view is, if  
13 you wouldn't mind looking at page 90 --

14          JUDGE McGUIRE: Yes. Which page is that?

15          MR. STONE: Page 90.

16          MR. WEBER: Page 90, the question is -- the  
17 portion is lines 3 through 21.

18          JUDGE McGUIRE: Okay.

19          Well, it does refer to the brief. On the other  
20 hand, it's an open question that I don't think has any  
21 pertinence to the brief itself, so on that basis I'm  
22 going to overrule the objection.

23          MR. WEBER: Okay. So if we could play that  
24 clip, please, which would be clip number 41.

25          This is again page 90, lines 3 through 21.

1           (Whereupon, the videotape was played for the  
2 record in open court.)

3           MR. WEBER: The next excerpt relates to his ITC  
4 declaration which I think Your Honor has just ruled on,  
5 and this would be page 100 at line 9 and the clip  
6 continues to page 102, line 21, so if we could play  
7 that, please.

8           (Whereupon, the videotape was played for the  
9 record in open court.)

10          MR. WEBER: Next we're going to do two short  
11 excerpts together. This would be page 104, lines 6  
12 through 16 and then page 104, line 25 continuing to  
13 page 107, line 9.

14          (Whereupon, the videotape was played for the  
15 record in open court.)

16          MR. STONE: Your Honor, if I can interrupt for  
17 a moment.

18          JUDGE McGUIRE: Cut the tape.

19          MR. STONE: Your Honor, again, this is just an  
20 effort to read the brief for the truth of what's in the  
21 brief. It doesn't refresh his recollection. There's  
22 no showing it refreshes his recollection.

23          So I think this is just an effort to get the  
24 contents of a brief he hadn't seen before into the  
25 record through a question.

1 JUDGE McGUIRE: Mr. Weber?

2 MR. WEBER: Your Honor, I think he was shown  
3 the brief to -- as either possible impeachment or  
4 refreshing recollection over what is meant by the  
5 phrase "the intellectual property right." That is the  
6 question that was being asked and I think he was shown  
7 the brief to --

8 MR. STONE: And if there were a subsequent  
9 question of does that refresh your recollection,  
10 what's your recollection now, that would be fine,  
11 but --

12 JUDGE McGUIRE: I sustain the objection.

13 MR. WEBER: Okay. We can move on to the next  
14 series of clips then. We're going to run a series of  
15 short clips.

16 JUDGE McGUIRE: Keep in mind now what I've  
17 ruled on this ITC brief is that essentially it's  
18 hearsay, so if there's -- hopefully you get some idea  
19 where I'm going on this through this order, so I don't  
20 know how much more you intend to offer on the brief,  
21 but it's going to continue in this vein unless the  
22 inquiry does not pertain to the brief, and if it did --  
23 if it does not, then it wouldn't be at issue.

24 MR. WEBER: I don't see any more questions  
25 coming up on the brief.



1 JUDGE McGUIRE: All right.

2 MR. WEBER: We're going to be at page 113,  
3 line 20 through page 114, line 3; followed by a  
4 counter-designation at page 114, line 22 through  
5 page 115, line 2; and then page 115, line 7 through  
6 line 21; followed by a question at page 115, line 24  
7 and an answer at page 116, line 1 through 116, line 9.

8 So if we can play that, please.

9 (Whereupon, the videotape was played for the  
10 record in open court.)

11 MR. WEBER: Next we have a series of excerpts  
12 along this same line of questioning, starting at  
13 page 118, line 7 through page 119, line 13 and  
14 continuing page 119, line 15 through page 120 at  
15 line 3.

16 And also page 120, line 23 through page 121,  
17 line 5, continuing at page 121, line 15 through  
18 page 123, line 3, and the final clip in this series is  
19 page 127, line 9 through page 129, line 6.

20 And this includes portions that have been  
21 designated by both sides.

22 JUDGE McGUIRE: Okay.

23 (Whereupon, the videotape was played for the  
24 record in open court.)

25 MR. WEBER: Next we're going to move on to a

1 different subject matter from the same transcript.

2 It's page 131, line 14 through page 133, line 16.

3 And then we're going to continue on with the  
4 next two clips, which are page 139, line 21 through  
5 page 141, line 12 and page 142, line 8 through  
6 page 143, line 9.

7 MR. STONE: Your Honor, I have no objection to  
8 the substance of the testimony. This goes into how  
9 much stock Mr. Karp had at the time in Rambus. I  
10 wonder if that's the kind of information that is not  
11 entitled to in camera protection. With respect to  
12 documents in the case, we have kept that kind of  
13 information confidential.

14 I know different judges have had different  
15 views. I don't know if it's come up in this case.

16 JUDGE McGUIRE: I have no problem with that. I  
17 think if that's going to be an area of his personal  
18 concern, then perhaps it should be in camera.

19 And I assume this isn't going to take very  
20 long; right?

21 MR. WEBER: No. We may have an in camera issue  
22 later with respect to some Rambus information.

23 MR. STONE: We do.

24 JUDGE McGUIRE: Can we go in camera and do both  
25 of them at once?

1           MR. STONE: I should have raised it with  
2 Mr. Weber in advance, and I apologize for not doing so,  
3 about whether we can do them all at once. Maybe they  
4 could submit them in writing. They may want you to  
5 hear it, and if they do, maybe we can do it at all  
6 once.

7           JUDGE McGUIRE: Can we edit the tape as such?  
8           Let me ask you this. How long will it take to  
9 do everything you just indicated if it's all in  
10 in camera?

11          MR. STONE: Three minutes.

12          MR. WEBER: The other part is a little bit  
13 later on, so we'll need to find it. It might be easier  
14 to defer this one until we get to the other one and  
15 come back to it.

16          JUDGE McGUIRE: I'm not talking about editing  
17 the tape. Whatever we can do with the tape that's  
18 convenient is fine with me, but I want to do all the  
19 in camera stuff at once.

20          So however is -- I'll leave that up to  
21 complaint counsel.

22          MR. WEBER: Okay. What we can do -- is this  
23 the next two clips, Greg?

24          It's going to affect these two clips and then  
25 we'll have to maybe come back and play 141 -- I think

1 what we're going to have to do is probably stay in the  
2 public session until we hit the next in camera thing  
3 and then come back to these, and then that's probably  
4 the easiest way.

5 JUDGE McGUIRE: Whatever is the easiest way to  
6 do it. So you advise me whenever you're ready to go in  
7 in camera.

8 MR. WEBER: So I think what we'll do is just  
9 play page 142, line 8 through 143, line 9, which I  
10 don't think has any of this information in it.

11 JUDGE McGUIRE: Okay.

12 (Whereupon, the videotape was played for the  
13 record in open court.)

14 MR. WEBER: Next we're going to have a clip  
15 that is on the topic of Mr. Karp's ITC declaration.  
16 This is page 150, line 8. It continues to page 151,  
17 line 6.

18 Following that, there's a counter-designation  
19 which we actually have an objection to, so I think  
20 we'll just play the first clip and then we'll get to  
21 the objection.

22 JUDGE McGUIRE: All right.

23 (Whereupon, the videotape was played for the  
24 record in open court.)

25 MR. WEBER: The next excerpt is a

1 counter-designation starting at page 151, line 17 and  
2 it continues through page -- the clip continues through  
3 page 152, line 4, and then there's a second clip 152,  
4 line 5 through line 12.

5 We object that the question is a hypothetical  
6 and calls for speculation. In fact, the counsel for  
7 Rambus actually objected to the question at the time.

8 JUDGE McGUIRE: Mr. Stone?

9 MR. STONE: Yes, Your Honor. Counsel for  
10 Rambus I think objected to some of the earlier  
11 questions on this subject as well, but what this does  
12 is try to put in context what he meant in this  
13 preceding statement in the declaration that he was  
14 asked about because he's then asked, well, if you  
15 change the sentence, he's trying to say would you be  
16 comfortable with it today. He's trying to explore his  
17 current understanding, and I think that's relevant to  
18 put in context what it was that was said and meant by  
19 this statement in the declaration, so this is offered  
20 to clarify the statement that he was just asked about.

21 JUDGE McGUIRE: Sustained.

22 MR. WEBER: I think then that that takes us to  
23 the bottom of page 153, line 24 and continuing through  
24 154, line 7.

25 And then there is also another clip 154,

1 line 12 through 158, line 5.

2 We do have an objection to one of the answers,  
3 but I'll stop the tape when it comes to that part.

4 (Whereupon, the videotape was played for the  
5 record in open court.)

6 MR. WEBER: That takes us to page 155, line 21.

7 There's a question that's asked starting at  
8 line 23 and also at the top of page 156 through line 5,  
9 and then there's a long answer that we're objecting to  
10 as nonresponsive to the question. It starts at  
11 page 156, line 6 and actually continues on to the top  
12 of page 157.

13 And then we also have the same objection to the  
14 next answer given at page 157, line 11 that Mr. Karp is  
15 just engaging in a monologue and not really responding  
16 to specific questions.

17 JUDGE McGUIRE: Let me just go through that and  
18 I'll just first read it.

19 MR. WEBER: Certainly.

20 JUDGE McGUIRE: We're talking about starting on  
21 line 23 at page 155?

22 MR. WEBER: Yes, that's where the question is  
23 starting. And I think he actually rephrases it at the  
24 top of the next page, and it's a fairly simple  
25 question, but then there's this long answer which we

1 don't think is responsive to the question.

2 (Pause in the proceedings.)

3 JUDGE McGUIRE: And then it goes down through  
4 where, Mr. Weber?

5 MR. WEBER: Your Honor, I think it actually  
6 winds up going to the top of page 158 because there's  
7 another question at page --

8 JUDGE McGUIRE: Right, there's a question on  
9 page --

10 MR. WEBER: It's the same objection to both  
11 answers.

12 JUDGE McGUIRE: All right. But the first  
13 answer concludes on line 3 at page 157?

14 MR. WEBER: All right.

15 JUDGE McGUIRE: I mean, is that correct?

16 MR. WEBER: Yes.

17 JUDGE McGUIRE: Then that objection is  
18 overruled.

19 MR. WEBER: Okay. So you want us to play  
20 that?

21 JUDGE McGUIRE: Go ahead.

22 MR. WEBER: Can we also get a ruling on the  
23 next question and answer and play the rest of the  
24 tape?

25 JUDGE McGUIRE: The other one starts on

1 page 157 at line 4.

2 MR. WEBER: That's the question, and the answer  
3 starts at line 11, yes, Your Honor.

4 JUDGE McGUIRE: And then it ends on line 5 on  
5 page 158.

6 MR. WEBER: That's correct, Your Honor.

7 JUDGE McGUIRE: All right. Let me just look at  
8 that.

9 (Pause in the proceedings.)

10 I'm having trouble understanding the question  
11 here. That's probably why the answer is so short.

12 (Pause in the proceedings.)

13 MR. WEBER: Your Honor, if it makes things go  
14 quickly, we'll be just happy to play the rest of the  
15 tape.

16 JUDGE McGUIRE: All right. That's fine.

17 MR. WEBER: At this point.

18 So if we could continue starting at 155,  
19 line 23 and we'll continue to the end of this tape,  
20 which I think goes through 158, line 5.

21 JUDGE McGUIRE: Yes.

22 MR. WEBER: Thank you.

23 (Whereupon, the videotape was played for the  
24 record in open court.)

25 MR. WEBER: Your Honor, the next clip there's



1 no objections to. It's page 159, line 1 continuing  
2 through page 161, line 19.

3 (Whereupon, the videotape was played for the  
4 record in open court.)

5 MR. WEBER: Let me confer with counsel on the  
6 next designation.

7 JUDGE McGUIRE: Go ahead.

8 (Pause in the proceedings.)

9 MR. WEBER: We just saved some time here,  
10 Your Honor.

11 The next clip, though, relates to a document.  
12 It's a document that I think has been discussed before.  
13 It's JX-17 and it's specifically going to be some  
14 questions on pages 7 and 8. I think this is a  
15 different version than was marked in the deposition,  
16 but I have a copy for Your Honor. I think once you  
17 hear the clip, I think it will be clear what's being  
18 asked about.

19 MR. STONE: What are you showing him?

20 MR. WEBER: This is JX-17, which I think is  
21 the -- it was Defendant's Exhibit 25 in the hearing.

22 And I believe the part that's going to be  
23 discussed is pages 7 and 8. We have a copy for counsel  
24 as well.

25 MR. STONE: This is not -- I mean, the Bates

1 numbers don't match up.

2 MR. WEBER: Right. Right. I think it was a  
3 different version that he was using, but I think it's  
4 the same meeting minutes that discussed the --

5 MR. STONE: I don't know how we -- I can't  
6 tell --

7 JUDGE McGUIRE: I'm a little confused as to  
8 what we're doing here, Mr. Weber.

9 MR. WEBER: We're just hopefully going to make  
10 things a little less confusing. Maybe we should just  
11 play the clip.

12 But basically this is talking about a situation  
13 that arose over a particular JEDEC meeting involving  
14 quad CAS. And there's a particular section of the  
15 minutes that is read into the record.

16 JUDGE McGUIRE: I see. How long is that  
17 section?

18 MR. WEBER: It's very short.

19 MR. STONE: I don't mind the testimony coming  
20 in. I have no objection to the testimony. I just  
21 wasn't sure --

22 JUDGE McGUIRE: I wasn't sure either.

23 MR. WEBER: The clip starts at page 180, line 9  
24 through page 182, line 25.

25 JUDGE McGUIRE: Well, I said I have no problem

1 with just seeing the hard copy, but I'm just not sure  
2 where it is or -- it's page 7 of what?

3 MR. WEBER: I think it's going to be page 7 or  
4 8 of JX-17. Actually I think the discussion starts on  
5 page 7. The parts that's quoted in the --

6 JUDGE McGUIRE: See, I don't know what's JX-17.  
7 You haven't marked it.

8 MR. WEBER: JX-17, it's JEDEC meeting minutes  
9 from I believe September of '93.

10 JUDGE McGUIRE: Okay. I've got that. All  
11 right. That's page 7 or 8 then?

12 MR. WEBER: Page 7 or 8, which is the  
13 discussion of this topic involving the quad CAS  
14 situation. And part of the minutes are actually read  
15 in in the question, so...

16 JUDGE McGUIRE: Mr. Stone, do you have a  
17 preference?

18 MR. STONE: If they think these are the right  
19 minutes, I'm not going to argue that they're not. I  
20 can't tell from the testimony if they are or not.

21 JUDGE McGUIRE: Then let's watch the tape.

22 MR. STONE: I think it's fine.

23 MR. WEBER: I've just been informed that  
24 CX-57-A is the same version with the exact same Bates  
25 numbers, but you know, in the interest of trying to

1 keep the documents to a minimum, we just put in one  
2 version.

3 MR. STONE: I'm fine.

4 MR. WEBER: Again, this is page 180, line 9  
5 through page 182, line 25.

6 (Whereupon, the videotape was played for the  
7 record in open court.)

8 MR. WEBER: The next item is an excerpt on this  
9 same subject and -- but there's a counter-designation  
10 that we're objecting to the question.

11 So I propose playing page 184, line 10 up  
12 through page 185, line 15, and the question that we  
13 have the objection to and the answer we have the  
14 objection to starts at line 17 of page 185 to the top  
15 of 186.

16 We can play up to that part and then you can  
17 rule, Your Honor.

18 JUDGE McGUIRE: All right.

19 (Whereupon, the videotape was played for the  
20 record in open court.)

21 MR. WEBER: The next question is in the form of  
22 a hypothetical question and we would object as it's  
23 hypothetical, calls for speculation. It's the same  
24 kind of question that they've objected to when we've  
25 asked witnesses in this case.

1           JUDGE McGUIRE: Mr. Stone, do you want to be  
2 heard on that?

3           MR. STONE: We have objected on that. The  
4 objections have generally been overruled. I think  
5 consistency would suggest that the objection be  
6 overruled here as well.

7           MR. WEBER: My only point is that this is a  
8 hypothetical about something that doesn't even  
9 necessarily involve this case directly. It's the TI  
10 controversy. It's not the -- if Rambus would have  
11 disclosed, what would the but-for world have been  
12 like, so I think it's even farther removed from this  
13 case.

14           JUDGE McGUIRE: I think some of these issues,  
15 counsel -- I know in respondent's opening statement  
16 they talked about the but-for world, and I've allowed  
17 some speculation from the other side to address that  
18 very argument and -- but this does not involve Rambus  
19 per se, so I'm going to uphold the objection as it's  
20 hypothetical.

21           MR. STONE: Thank you, Your Honor.

22           MR. WEBER: The next series of questions relate  
23 to -- did we get CX-208?

24           The next series of questions relate to the  
25 JEDEC manual that's also been the subject of testimony

1 here, CX-208, which is the -- I believe it's manual  
2 21-I. And there's going to be some specific questions  
3 with parts of that manual in the next few clips, so  
4 we're going to try to grab a copy of it and I think  
5 this will be -- do you guys need any more copies?

6 MR. STONE: I'm fine. Go ahead.

7 MR. WEBER: I think again the questions will be  
8 at page 15, which is -- no. Actually on this version  
9 it's -- it's page 19 of our version. It's going to be  
10 page 15 of the -- again, this is the problem of having  
11 two different versions. And then there's also  
12 appendix F, I believe the last page, there's questions  
13 on that.

14 And this document in the deposition, just for  
15 the context, was referred to as Defendant's Exhibit 48.

16 So we will play the clip at page 190, line 20  
17 through 192, line 1, and then it also picks up at  
18 page 192, line 10 through page 193, line 18.

19 And continuing along the same topic, page 194,  
20 line 10 through page 195, line 20.

21 And I think we'll also read in page 197,  
22 line 21 through 24, which is on the same topic.

23 (Whereupon, the videotape was played for the  
24 record in open court.)

25 MR. WEBER: Next we're going to combine two

1 short clips: page 198, line 22 through page 199,  
2 line 10, which I believe is respondent's clip; and we  
3 have a clip also at page 200, line 15 through page 201,  
4 line 10.

5 (Whereupon, the videotape was played for the  
6 record in open court.)

7 MR. WEBER: Next we have a series of clips on  
8 another aspect of the JEDEC policy starting at  
9 page 202, line 15 continuing through page 203,  
10 line 18; and then 203, line 22 through 204, line 1;  
11 204, line 9 through 11; and 205, line 12 through 206,  
12 line 7.

13 (Whereupon, the videotape was played for the  
14 record in open court.)

15 MR. WEBER: Your Honor, I just conferred with  
16 counsel. I think the next series of clips will take us  
17 up through the possible second in camera area, so let  
18 me just read out these pages and see if this is okay to  
19 read in public session.

20 Page 221, line 17 through 222, line 3.

21 Then 223, line 4 through 225, line 9.

22 And then we have page 226, line 5 through 15.

23 And finally, 227, line 12 through 16.

24 And I think that will be the last clip before  
25 we may need to consider the in camera, the last series

1 of clips.

2 JUDGE McGUIRE: Okay.

3 (Whereupon, the videotape was played for the  
4 record in open court.)

5 MR. WEBER: Your Honor, I think we're up to the  
6 clip that was potentially in camera.

7 Does that comport with Mr. Stone on that?

8 MR. STONE: I agree.

9 MR. WEBER: Can we agree on what the remaining  
10 clips are in camera on this?

11 MR. STONE: I think it's the ones we held back  
12 earlier and then I think it's 236, line 2 through 237,  
13 line 3.

14 MR. WEBER: Just this one clip?

15 MR. STONE: I don't know that there's any --  
16 it's just the percentage figures for certain license  
17 agreements. I don't know that those numbers come up  
18 again. I don't think they do, so I think that's all.

19 MR. WEBER: Okay. We can do it one of two  
20 ways. We can continue in public session, finish up  
21 this video and then go back to the in camera, or we can  
22 go into in camera right now and finish up -- there's  
23 actually three clips. They're like less than five  
24 minutes total time.

25 JUDGE McGUIRE: You mean the in camera is less



1 than five minutes?

2 MR. WEBER: Yes.

3 JUDGE McGUIRE: Why don't we do it now and be  
4 done with it.

5 I have to advise the public that this portion  
6 of the hearing will be closed to the public, so you  
7 otherwise aren't cleared for any access to this  
8 information, and I'm going to ask you to please step  
9 outside, and I'm sure someone will be out there very  
10 shortly and you can come back in during the public  
11 session.

12 Now, this is not subject to that August 2002  
13 protective order, is it, Mr. Stone? You're just doing  
14 this out of an abundance of caution?

15 MR. STONE: All of these transcripts were, at  
16 the time they were taken -- and this one was taken in  
17 the Infineon case -- subject to a protective order  
18 which then carried over to this case, so the  
19 transcript itself was subject to that protective  
20 order.

21 What we had agreed was with respect to depo  
22 transcripts we'd handle any in camera when they came up  
23 rather than trying to deal with all of the volume of  
24 transcripts in advance. But this is not otherwise  
25 subject of an order.

1           So we move at this time for treatment in camera  
2 of the testimony you're about to hear.

3           JUDGE McGUIRE: All right. So noted.

4           Then let me again advise the court reporter  
5 that we are now in the in camera session, and will  
6 counsel certify that everyone on their side of the  
7 room is certified for access to this in camera  
8 treatment.

9           MR. STONE: Yes, Your Honor.

10          MR. WEBER: Yes, Your Honor.

11          (The in camera testimony continued in  
12 Volume 29, Part 2, Pages 5727 through 5728, then  
13 resumed as follows.)

14          JUDGE McGUIRE: Okay. Mr. Weber, you may  
15 proceed.

16          MR. WEBER: We're just going to finish up this  
17 last part of the clip in public session. It's  
18 page 141, line 5 through 12.

19          (Whereupon, the videotape was played for the  
20 record in open court.)

21          MR. WEBER: Now we're going to go ahead and  
22 page through the transcript to where we were before we  
23 left off and we have three short excerpts: page 238,  
24 line 13 through 17; page 138, line 25 through page 259,  
25 line 9; and page 239, line 19 through page 240, line 4.

1           This includes designations by both sides.

2           (Whereupon, the videotape was played for the  
3 record in open court.)

4           MR. WEBER: Your Honor, next we have a series  
5 of clips where we have some objections to their  
6 counter-designations.

7           The first one is page 248, the question at  
8 line 19 and the answer at line 24. Our objections are  
9 that it is beyond the scope of our designations, it  
10 lacks foundation and calls for opinion testimony.

11          MR. STONE: Your Honor, our response, just  
12 briefly -- I won't belabor it -- is that it's directly  
13 responsive to the question and answer we just heard.

14          JUDGE McGUIRE: Let's see. What page were we  
15 just on right now?

16          MR. WEBER: We're on page 248 --

17          JUDGE McGUIRE: I mean prior to that. The one  
18 we just saw.

19          MR. WEBER: It's eight pages prior to that. I  
20 think it's like 240 -- the last one we just read?

21          JUDGE McGUIRE: Yes.

22          MR. WEBER: It stops at 240. It starts at 239,  
23 line 19.

24          And basically they counter-designated a  
25 question and answer at the top of 240, so I think that

1 counter-designation goes with what was just read in at  
2 the bottom of --

3 JUDGE McGUIRE: I'll hear the question.

4 MR. WEBER: Okay. So let's play clip -- the  
5 clip at 23 -- 248, line 19 through 249, the answer at  
6 249, line 5, so that's actually the next two clips.

7 (Whereupon, the videotape was played for the  
8 record in open court.)

9 MR. WEBER: We have a similar objection to the  
10 next clip and also it's vague and ambiguous as being  
11 out of context. This is at 249, line 19.

12 JUDGE McGUIRE: The question is: "And why do  
13 you say that?"

14 MR. WEBER: Right.

15 JUDGE McGUIRE: And that's on the prior answer  
16 that we just heard?

17 MR. WEBER: Well, not really because there's a  
18 series in between the answer, so it's a little unclear  
19 what the "that" is, for one thing. We obviously  
20 weren't there to object, make a form objection, but in  
21 addition to the other objections I mentioned with the  
22 prior --

23 MR. STONE: Well, I didn't -- if counsel thinks  
24 we need to read the intervening testimony, we should  
25 just read it into the record orally. If he feels we

1 need that for context.

2 JUDGE McGUIRE: Why don't you do that because  
3 it would otherwise be confusing I think.

4 MR. WEBER: Well, it's their  
5 counter-designation, so if they want to read it --

6 MR. STONE: Then I will read the question  
7 beginning at page 249, line 6 and continuing through  
8 the answer at page 249, line 17, the lead-in to the  
9 objection.

10 (Whereupon, the transcript cites were read into  
11 the record in open court.)

12 MR. WEBER: Again, we would object to that as  
13 being -- first of all, they didn't counter-designate  
14 this, so he's adding this today, but if I had to on the  
15 fly object, then I would make the same objections that  
16 Rambus' attorney did as being an incomplete  
17 hypothetical, calls for expert opinion, calls for a  
18 legal conclusion.

19 JUDGE McGUIRE: Mr. Stone, what was your  
20 opposition to the objection?

21 MR. STONE: Your Honor, the point of that was  
22 that this clarifies and fills out the content of what  
23 he was earlier asked in the preceding testimony about  
24 whether he thought the JEDEC standards would or would  
25 not have required disclosure, and now he's being asked

1 to explain why it would or would not have covered or  
2 required the disclosure. This is just his explaining  
3 his reasoning and I think it gives context and meaning  
4 to --

5 JUDGE McGUIRE: I'll hear the question again.

6 MR. WEBER: I think he just read it in, so you  
7 heard it.

8 JUDGE McGUIRE: Right. I'll hear the answer  
9 then.

10 MR. WEBER: I think you read in the answer,  
11 Greg?

12 MR. STONE: I read in the part that you said  
13 made it misleading with respect to what begins at  
14 page 249, line 19. I think that's where we are now.

15 MR. WEBER: We have the clip starting at 249,  
16 line 19. The reason we didn't have what Mr. Stone read  
17 in was because it wasn't designated, just so the record  
18 is clear.

19 JUDGE McGUIRE: I understand.

20 MR. WEBER: So we can play the clip of 249,  
21 line 19 through 250, line 2.

22 (Whereupon, the videotape was played for the  
23 record in open court.)

24 MR. WEBER: And finally we have one other clip  
25 that we have an objection to. It starts -- the

1 question is at page 251, line 10, the answer then at  
2 251, line 16.

3 And we believe this question calls for a legal  
4 conclusion. He's asking whether Rambus is observing  
5 the JEDEC policy of nondiscriminatory and fair and  
6 reasonable rates, and so we think this calls for  
7 opinion testimony from a lay witness.

8 MR. STONE: I agree, Your Honor, that the  
9 question as framed asks for his opinion. I think he  
10 gives his understanding. I would offer it only as  
11 evidence of his understanding. I would not argue --

12 JUDGE McGUIRE: I will hear it as to his  
13 understanding, in that context only.

14 MR. WEBER: Okay. Therefore, we will play 251,  
15 lines 10 through 12 and 201, lines 16 through 18.

16 (Whereupon, the videotape was played for the  
17 record in open court.)

18 MR. WEBER: Next we have one short clip that  
19 they've counter-designated and we have no objection to,  
20 page 252, line 5 through 24.

21 (Whereupon, the videotape was played for the  
22 record in open court.)

23 MR. WEBER: Your Honor, the next series of  
24 clips relate to questions and answers about a claim in  
25 a patent application and also matching up to one of the

1 JEDEC presentations. This relates to on-chip PLL.

2 I have a copy of one of the documents that I  
3 believe was used which was -- has been marked as  
4 CX-1459. But I think you could probably follow along  
5 just from reading the --

6 JUDGE McGUIRE: Yeah, I'll do that.

7 MR. WEBER: So this is going to be -- let me  
8 just read in the pages -- 270, line 24 through 272,  
9 line 19 and then page 274, line 15 through 275,  
10 line 11.

11 And we might as well finish this off with 277,  
12 line 1 through 5; 277, line 11 through 21; and then  
13 280, line 7 through 25; and finally, 282, lines 23  
14 through 24.

15 And this concludes the excerpts from this  
16 deposition.

17 JUDGE McGUIRE: All right. Thank you.

18 (Whereupon, the videotape was played for the  
19 record in open court.)

20 MR. WEBER: Your Honor, that concludes the  
21 Infineon video from Mr. Karp's deposition. We're  
22 prepared to continue with a live read-in of the FTC  
23 deposition, but perhaps now would be a good time for a  
24 short break.

25 JUDGE McGUIRE: Yes. Let's take a break for



1 ten minutes. We'll come back.

2 (Recess)

3 JUDGE McGUIRE: Mr. Weber, proceed.

4 MR. WEBER: Your Honor, what we're going to do  
5 is we're going to do read-ins from the deposition out  
6 in San Francisco on February 5, 2003. I was taking the  
7 deposition. Mr. Stone was defending. We'll have  
8 Emily Pitlick read the answers from Mr. Karp.

9 We will try to as much as possible include the  
10 counter-designations to give context as we go through  
11 so we won't have to go back and do that again. There  
12 may be an in camera issue that comes up at a certain  
13 point.

14 We will also, with Hiram Andrews' help, try and  
15 get the documents up on screen if there's a document  
16 that comes up so Your Honor can see them.

17 And I will also try to remember to read in the  
18 lines and page numbers as we go.

19 First of all, we're going to read from the  
20 beginning, which is page 7, line 9 through 18.

21 (Whereupon, the transcript cites were read into  
22 the record in open court.)

23 MR. WEBER: And now we go to the top of page 9,  
24 lines 3 through 6.

25 (Whereupon, the transcript cites were read into

1 the record in open court.)

2 MR. WEBER: And continuing at the bottom of  
3 page 9, line 24 through page 10, line 11.

4 (Whereupon, the transcript cites were read into  
5 the record in open court.)

6 MR. WEBER: And continuing at the bottom of  
7 page 10 starting at line 20 through page 11, line 17.

8 (Whereupon, the transcript cites were read into  
9 the record in open court.)

10 MR. WEBER: Continuing to page 14, lines 4  
11 through 17.

12 (Whereupon, the transcript cites were read into  
13 the record in open court.)

14 MR. WEBER: Page 15, lines 10 through 13.

15 (Whereupon, the transcript cites were read into  
16 the record in open court.)

17 MR. WEBER: Okay. Page 20, line 11 through 21,  
18 line 8.

19 (Whereupon, the transcript cites were read into  
20 the record in open court.)

21 MR. WEBER: Continuing at page 22, line 8  
22 through line 23.

23 (Whereupon, the transcript cites were read into  
24 the record in open court.)

25 MR. WEBER: Page 23, lines 4 through 15.

1           (Whereupon, the transcript cites were read into  
2 the record in open court.)

3           MR. WEBER: Page 31, lines 3 through 11.

4           (Whereupon, the transcript cites were read into  
5 the record in open court.)

6           MR. WEBER: Okay. Page 31, line 17 through  
7 page 32, line 15.

8           (Whereupon, the transcript cites were read into  
9 the record in open court.)

10          MR. WEBER: Okay. Your Honor, we're going to  
11 try and pull up the next exhibit on the screen, but  
12 we're asking about the December 1991 JEDEC meeting  
13 minutes, and it's at page 41 of the transcript and I  
14 think it's section 6.2 of those minutes. I don't know  
15 which page number. I don't happen to have a page  
16 number here, if we can pull that up on the screen.

17           And that's what this question is about, so  
18 we'll go to page 41, lines 16 through 23.

19          (Whereupon, the transcript cites were read into  
20 the record in open court.)

21          MR. WEBER: Next we have a reference to  
22 CX-2955, if we could pull that document on the screen,  
23 and we'll be reading from page 44, line 10 through 45,  
24 line 10. And there's a specific document that's  
25 introduced at this point.

1           (Whereupon, the transcript cites were read into  
2 the record in open court.)

3           MR. WEBER: Now we're continuing with page 47,  
4 line 24 through page 48, line 7.

5           (Whereupon, the transcript cites were read into  
6 the record in open court.)

7           MR. WEBER: Next we have a counter-designation  
8 which we have an objection to. It's page 50, line 4  
9 through 12.

10           He's basically asked the question and he gives  
11 a nonresponsive answer talking about Colin Powell and  
12 Saddam Hussein. We just don't think it should be  
13 entered into evidence. It's not responsive to any of  
14 our designations either.

15           JUDGE McGUIRE: Sustained.

16           MR. WEBER: Next we're at page 58, line 13.

17           (Whereupon, the transcript cites were read into  
18 the record in open court.)

19           MR. WEBER: Page 60, line 16 through 25.

20           (Whereupon, the transcript cites were read into  
21 the record in open court.)

22           MR. STONE: Your Honor, unless I renew my  
23 objection here, to save time, Mr. Weber doesn't need to  
24 note if I objected to a question.

25           JUDGE McGUIRE: Right. You don't need to state

1 the objections.

2 MR. WEBER: That's fine. It will go faster. I  
3 appreciate it.

4 (Whereupon, the transcript cites were read into  
5 the record in open court.)

6 MR. WEBER: Continuing with page 61, lines 13  
7 through 18.

8 (Whereupon, the transcript cites were read into  
9 the record in open court.)

10 MR. WEBER: Page 62, line 16 through page 63,  
11 line 25.

12 (Whereupon, the transcript cites were read into  
13 the record in open court.)

14 MR. WEBER: The next excerpt is page 70,  
15 line 18 through 71, line 9.

16 There's an objection from counsel. I don't  
17 know if you're still preserving this objection or not.

18 JUDGE McGUIRE: Do you want to play his role or  
19 is it necessary?

20 MR. STONE: If I need to raise my objections, I  
21 will.

22 JUDGE McGUIRE: Otherwise, we're just going to  
23 skip through them.

24 MR. STONE: We can just go forward.

25 MR. WEBER: Okay. So starting at page 70,

1 line 18 continuing through 71, line 9.

2 (Whereupon, the transcript cites were read into  
3 the record in open court.)

4 MR. WEBER: The next excerpt is page 78,  
5 line 5 -- oh, this is actually -- counsel reminded me.  
6 This is actually a license agreement that I think they  
7 want in camera this testimony.

8 MR. STONE: Yes. And I wonder if it makes  
9 sense if we just let Your Honor -- maybe we can just  
10 let Your Honor read 78, line 5 through 80, line 15 as  
11 opposed to us reading it to you, then you can read it  
12 to yourself.

13 JUDGE McGUIRE: That's a good idea. I'll just  
14 take this time right now and read that.

15 MR. STONE: Then we don't need to exclude  
16 anybody.

17 MR. WEBER: We'll be happy to proceed on that  
18 basis, Your Honor.

19 JUDGE McGUIRE: All right. Let me read this.

20 MR. WEBER: We can skip ahead, but the next  
21 section --

22 JUDGE McGUIRE: Hold it. I'm going to read it  
23 right now.

24 MR. WEBER: I'm sorry. I'm sorry. I  
25 apologize.

1 (Pause in the proceedings.)

2 JUDGE McGUIRE: Okay. Then that ends on  
3 page 80 at line 15?

4 MR. WEBER: Yes, Your Honor.

5 JUDGE McGUIRE: Okay. I read it.

6 MR. WEBER: Okay. We're going to continue on  
7 to page 85, line 7 through 22, but if we could pull up  
8 JX-31 at page 68, which is attachment U, that's what's  
9 being discussed here. It was a Samsung presentation at  
10 I believe the March 1996 JEDEC meeting.

11 (Whereupon, the transcript cites were read into  
12 the record in open court.)

13 MR. WEBER: Then we move to page 86, line 21  
14 through page 87, line 13.

15 Is this something that you want in camera?  
16 It's referring to that agreement again.

17 MR. STONE: I guess we'd ask you to read this  
18 as well, Your Honor.

19 JUDGE McGUIRE: All right. Page 87 --

20 MR. STONE: 86, line 21 through 87 --

21 JUDGE McGUIRE: 87, line 13.

22 MR. WEBER: Yes. It references the provision  
23 in that contract.

24 JUDGE McGUIRE: Okay. I'll read it.

25 (Pause in the proceedings.)

1           Okay.

2           MR. WEBER: Question at page 87, line 23  
3 through page 88, line 8.

4           (Whereupon, the transcript cites were read into  
5 the record in open court.)

6           MR. WEBER: Next we have a counter-designation  
7 by respondent that starts at page 91, line 9, and we  
8 have an objection to a question that's at page 92,  
9 line 13, which we think calls for speculation. I'll  
10 read it in up to that point, Your Honor, if that's all  
11 right.

12          JUDGE McGUIRE: All right. Go ahead.

13          (Whereupon, the transcript cites were read into  
14 the record in open court.)

15          MR. WEBER: We're objecting to the reading in  
16 of the next two questions and answers on the grounds  
17 that it calls for speculation. This would basically be  
18 page 92, line 13 through 24.

19          JUDGE McGUIRE: Mr. Stone, any response to the  
20 objection?

21          MR. STONE: No, Your Honor. I think you can  
22 read it and decide either way.

23          JUDGE McGUIRE: All right. Then on that basis  
24 the objection is sustained.

25          MR. WEBER: We will go to page 95, line 19



1 through 96, line 1.

2 (Whereupon, the transcript cites were read into  
3 the record in open court.)

4 MR. WEBER: And now, the next excerpt talks  
5 about a specific document. Your Honor, this is a very  
6 long document, so I don't know what your schedule is  
7 today, but this will take a while and we could either  
8 finish up with this document or continue with it the  
9 next time, whatever Your Honor's convenience is.

10 It's a -- it's actually -- we're going to be  
11 talking about a very thick notebook that Mr. Karp kept  
12 along with his agreements.

13 JUDGE McGUIRE: How much more time do you think  
14 it would take either if we do it today or on into other  
15 points in time to conclude this deposition?

16 MR. WEBER: I don't know. It's been moving  
17 fairly quickly, so -- I don't have as good a sense of  
18 this as the video because of the video being timed. I  
19 think we're probably looking at at least another hour  
20 to complete this, just a rough ballpark, but I -- you  
21 know, we haven't actually practiced.

22 JUDGE McGUIRE: Mr. Stone, do you have any  
23 preference? Do you want to get out early today or do  
24 you want to go ahead and try and finish this up today?

25 MR. STONE: Whatever suits complaint counsel

1 and Your Honor, I'm fine. I think it's probably at  
2 least an hour. I'm just -- it's hard to estimate  
3 because I haven't timed it either, but I suspect --  
4 this was a full-day deposition and I would guess a  
5 significant percentage is designated along the way, so  
6 we're probably looking at more than an hour.

7 JUDGE McGUIRE: Mr. Oliver?

8 MR. OLIVER: I was just going to indicate, for  
9 what it's worth, that I expect that the witness  
10 tomorrow will not be a full-day witness.

11 JUDGE McGUIRE: Why don't we carry over  
12 tomorrow and finish this up and maybe we can get out  
13 today somewhat early and then we'll complete this  
14 deposition reading tomorrow.

15 MR. WEBER: Okay.

16 JUDGE McGUIRE: Okay?

17 MR. STONE: Thank you, Your Honor.

18 JUDGE McGUIRE: You both have some hard copy up  
19 here that I'm going to ask that you collect.

20 Should I just go ahead and keep the transcript  
21 up here that we're working from?

22 MR. OLIVER: That would be fine, Your Honor.

23 JUDGE McGUIRE: Then you all can grab your  
24 other hard copy.

25 And then we'll convene tomorrow morning at

1 9:30.

2 Anything else we need to discuss before we  
3 adjourn today?

4 MR. STONE: I don't believe so, Your Honor.

5 JUDGE McGUIRE: Okay. Very good. We'll see  
6 you in the morning.

7 MR. STONE: Thank you.

8 (Time noted: 4:03 p.m.)

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 C E R T I F I C A T I O N O F R E P O R T E R

2 DOCKET NUMBER: 9302

3 CASE TITLE: RAMBUS, INC.

4 DATE: June 17, 2003

5

6 I HEREBY CERTIFY that the transcript contained  
7 herein is a full and accurate transcript of the notes  
8 taken by me at the hearing on the above cause before  
9 the FEDERAL TRADE COMMISSION to the best of my  
10 knowledge and belief.

11

12 DATED: June 17, 2003

13

14

15

16 JOSETT F. HALL, RMR-CRR

17

18 C E R T I F I C A T I O N O F P R O O F R E A D E R

19

20 I HEREBY CERTIFY that I proofread the  
21 transcript for accuracy in spelling, hyphenation,  
22 punctuation and format.

23

24

25 DIANE QUADE

For The Record, Inc.  
Waldorf, Maryland  
(301) 870-8025