

**UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION**

PUBLIC

In the Matter of

RAMBUS INCORPORATED,

a corporation.

Docket No. 9302

**COMPLAINT COUNSEL’S RESPONSE TO RAMBUS INC.’S
SUPPLEMENTAL MEMORANDUM IN SUPPORT OF ITS OBJECTIONS
TO THE DEPOSITION TESTIMONY OF DR. K.H. OH**

Complaint Counsel submits this response to supplement Complaint Counsel’s Opposition to Rambus Inc.’s Request To Exclude The Deposition Testimony of Dr. K.H. Oh, filed May 12, 2003 (“Complaint Counsel Mem.”), and in opposition to the objections raised by Rambus in its Supplemental Memorandum in Support of its Objections to the Deposition Testimony of Dr. K.H. Oh (“Rambus Supp. Mem.”). For the reasons explained generally in Complaint Counsel Mem. and more specifically below, Rambus has failed to sustain its burden of showing that the testimony of Dr. Kye Hwan Oh is irrelevant, immaterial or unreliable, such that it should be excluded entirely from the record pursuant to § 3.43(b)(1) of the Commission’s Rules of Practice. Rather, as the transcript reveals, Dr. Oh’s testimony reflects vast knowledge of the DRAM industry and Hyundai Semiconductor’s business practices, based on his many years of experience in senior positions with the company.

As demonstrated below, Dr. Oh had solid and substantial foundation for all of his testimony. Should The Court have concerns with respect to any specific questions and answers, however, the appropriate course of action is to consider those concerns when deciding what weight to attach to any such specific testimony, rather than to issue a blunt and potentially overly-broad order excluding the testimony entirely from the proceeding. This is particularly true in the case of an absent witness, where Complaint Counsel have no opportunity to correct the form of any questions; any testimony that is excluded is lost from the proceeding permanently. Such a result would be particularly harsh with respect to the testimony of Dr. Oh, who is one of only very few top executives and foreign nationals to testify in this proceeding.

I. Commission Rules of Practice Provide for the Liberal Admissibility of Reliable Evidence

Commission Rules state that “[r]elevant, material, and reliable evidence shall be admitted.” Commission Rule of Practice 3.43(b). Rambus does not generally challenge the relevancy or materiality of Dr. Oh’s testimony, so the key consideration is whether his testimony is reliable.

The Commission’s rules governing the admissibility of evidence are more lax than the Federal Rules of Evidence. *See Gibson v. F.T.C.*, 682 F.2d 554, 568 (5th Cir. 1982) (noting that Commission Rules permit the introduction of hearsay evidence). “It has long been acknowledged . . . that ‘administrative agencies like the Federal Trade Commission have never been restricted by the rigid rules of evidence.’” *In the Matter of American Home Products Corp.*, 98 F.T.C. 136, n 9 (1981) (quoting *F.T.C. v. Cement Institute*, 333 U.S. 683, 706 (1948)). A

leading treatise on administrative law explained why, in the context of agency adjudications, an administrative law judge should err on the side of admitting evidence:

There are three reasons why it makes little sense to take the risk of erroneous exclusion of reliable evidence through application of highly technical exclusionary rules in the context of agency adjudications. First, the cost of such errors is as great in the agency adjudication context as it is in the judicial context: If the ALJ erroneously excludes reliable evidence, the agency must remand for further proceedings or decide the case on the basis of an incomplete record. Second, the risk of error of exclusion is greater in the agency adjudication context than in the context of a jury trial. Third, there are good reasons to take this risk in the jury trial context that do not exist in the case of agency adjudications.

Kenneth C. Davis & Richard J. Pierce, Jr. II, *Administrative Law Treatise* (3d ed. 1994) § 10.3 at 125-26. Thus, courts grant deference to agency determinations that evidence is reliable unless the testimony in question is “inherently improbable.” *See Resort Car Rental System, Inc. v. F.T.C.*, 518 F.2d 962, 963-64 (9th Cir. 1975), *cert. denied*, *MacKenzie v. U.S.*, 423 U.S. 827 (1975).

Even under the more strict Federal Rules of Evidence, which are not controlling in this proceeding, Dr. Oh’s testimony would be admitted because it is trustworthy. To establish foundation for any testimony, a witness must simply show personal knowledge about the matter at issue. *See Fed. R. Evid. 602* (2003). “Evidence to prove personal knowledge may, but need not, consist of the witness’ own testimony.” *Id.*; *see also* Rule 602 Advisory Committee Notes (“These foundations requirements may, of course, be furnished by the testimony of the witness himself”). As explained in detail in the following charts, Dr. Oh’s testimony is based on his personal knowledge as a former high-level executive and engineer in the DRAM industry. His statements themselves illustrate his extensive understanding of the concepts and documents discussed in his deposition, thus providing the necessary foundation for his testimony. To

classify Dr. Oh's testimony as untrustworthy would be an erroneous exclusion of reliable evidence.

II. Dr. Oh's Testimony Was Based on His Broad Knowledge of the DRAM Industry and His Experience with Common Business Terms and Concepts He Used at Hyundai

Rambus challenges the reliability of large portions of Dr. Oh's testimony because certain parts of the testimony related to documents that he was familiar with, understood, and either saw in their exact or similar form while a Senior Vice president at Hyundai, but cannot recall today whether or not he saw the precise document used at his deposition. As explained in detail in Complaint Counsel Mem., Dr. Oh testified based on his general knowledge stemming from years of experience in the DRAM industry and on his specific understanding of the content of the documents in question. Many of the questions to which Rambus objects are not, in fact, tied to any document, but rather ask for Dr. Oh's understanding of various issues. With respect to questions that did relate to a particular portion of a document, Dr. Oh's testimony itself confirms that he was fully conversant with the substance and content of the documents in question.¹

The chart below addresses Rambus's specific foundational objections.

¹ Most of the exhibits Rambus objects to have been admitted into evidence. *See* 14 Trial Tr. 2603:7-14 (May 21, 2003) (admitting Oh Exhibit 7 (CX 2294), Oh Exhibit 8 (CX 2297), Oh Exhibit 9 (CX 2263), Oh Exhibit 10 (CX 2264), Oh Exhibit 12 (CX 2303), Oh Exhibit 13 (CX 2306), and Oh Exhibit 14 (CX 2334)).

Response to Rambus's Attachment B

Page and Line	Respondent's Objection	Complaint Counsel's Response
<p>39:13-21 41:9-43:15 45:4-46:4 47:11-48:20 51:4-52:5 53:10-54:13 55:2-56:14</p>	<p>Dr. Oh's testimony about the purpose and meaning of Exhibit 2 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (328:4-23). Exhibit</p>	<p>Exhibit 2 is a document entitled Hyundai Memory Group 2H '95 Product Planning Meeting. Dr. Oh testified that he had product planning meetings at least once a quarter throughout the whole world (40:21-41:8), and this document was prepared before the relevant product planning meeting (39:13-21; 41:17-20).</p> <p>Contrary to the statement of Respondent, much of the testimony to which Respondent objects was not related to the purpose and meaning of Exhibit 2. Dr. Oh's testimony focused, with respect to certain operations relating to chip packaging set forth in planning tables, on Hyundai's business practices with respect to which equipment it purchased from outside vendors and which equipment was manufactured within Hyundai. (42:19-43:15; 45:4-46:4). Dr. Oh testified, for example, with respect to how long in advance Hyundai had to plan in order to have the relevant packaging equipment manufactured to its specifications (53:10-54:13; 55:2-56:14). Indeed, many of the questions on their face make clear that the testimony elicited was independent of the document (54:7-10 ("Okay. Let me ask the question in this term, then: How far in advance would Hyundai have to start planning for the packaging equipment in order to have that ready at the time the product was completed?"); 55:2-4 ("Okay. And both the equipment and the leadframe are being done in parallel with the completion of the product?"); 55:14-18 ("Just to be certain that the record is clear on this point, perhaps I could ask you first to outline the main steps from the start of a design until mass production of a synchronous DRAM product, again looking just at the main stages of development.)).</p>

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		<p>The sole questions that were tied to the specific content of Exhibit 2 related to two tables outlining the status of packaging for certain Hyundai products. (47:11-48:20; 51:4-52:5). Dr. Oh had more than adequate basis for testifying with respect to these tables. Contrary to Respondent's assertions, Dr. Oh did <u>not</u> testify that he had not seen Exhibit 2 prior to preparing for his deposition, but rather that he couldn't remember this particular document from the many, many similar documents he had reviewed during his tenure at Hyundai. (328:9-19). The most important point is his testimony, which Respondent doesn't mention, that "all the context I'm very familiar with." <i>Id.</i></p> <p>And indeed, Dr. Oh testified with clear understanding and knowledge, based on his many years at Hyundai reviewing such planning documents and leading the relevant planning meetings, as to the anticipated schedule of packaging work reflected in the document. (47:11-48:20; 51:4-52:5).</p>
<p>39:13-21 41:9-43:15 45:4-46:4 47:11-48:20 51:4-52:5 53:10-54:13 55:2-56:14</p>	<p>[In regards to Exhibit 2], Dr. Oh's testimony about certain technology related to the packaging of DRAMs is irrelevant given Dr. Oh's later testimony that this packaging would not necessarily have to be changed in order to make changes to interface circuitry (243:17-22).</p>	<p>Dr. Oh's testimony regarding technology related to packaging is relevant for two reasons. First, it illustrates the importance of standardization. As Dr. Oh explained, "packaging itself is another round of development process, and even the packaging details itself is determined at the JEDEC meetings" (42:12-15). Second, it illustrates the lock-in effect. Dr. Oh stated that a change in the JEDEC standard for a leadframe design would affect Hyundai's design and packaging (57:3-7). His later testimony in no way contradicted this statement, but simply clarified that if an internal circuit change did not change pin locations, a different leadframe would not be required. (243:8-22).</p>

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<p>125:3-5, 17-24 127:3-129:9 131:3-135:4 135:23-136:8 136:20-138:4 138:22- 139:16 140:2-141:22 142:5-143:4 144:7-147:2</p>	<p>Dr. Oh's testimony about the purpose and meaning of Exhibit 7 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (331:10-332:18).</p>	<p>Exhibit 7 (which has been admitted into evidence without objection as CX 2294) is a DRAM memory product road map prepared by the Hyundai Memory Group in July of 1997. Dr. Oh was the Senior Vice President responsible for supervising the group that produced Exhibit 7. Dr. Oh testified that he was very familiar with all of the content, and had actually prepared much of the information in Exhibit 7 with his people. (332:15-18.)</p> <p>Contrary to the assertion of Respondent, much of the testimony in question was not about the purpose and meaning of Exhibit 7, but rather concerned Dr. Oh's understanding of certain aspects of the industry and Hyundai's business. See, e.g., 127:15-16 ("Could I ask you to explain briefly what a chipset is?"); 127:19-20 ("Can any chip set work with a memory design, or does a chip set have to be specific to a memory design?"); 128:15-16 ("Why was Hyundai concerned about chip sets more than a year before it finished its DDR SDRAM design?"); 129:1-3 ("Why couldn't you simply wait until you'd completed your design of the DDR SDRAM and then go out to line up chip-set support?"); <i>see also</i> 136:25-137:9 ("First of all, what do you understand by the term 'open architecture'? A. It means adopted by JEDEC. Q. Okay. A. So that everybody can use. Q. Was open architecture important to Hyundai? A. Very much so. Q. Why? A. Because it means that it is adopted by JEDEC, and thus it requires no royalty or no fees at all."); 137:16-21 ("In July of 1997, did Hyundai believe that DDR SDRAM would be free of royalties, in other words, that no royalties would apply to DDR SDRAM? [objection omitted] A. If it were not, we will not get into this, developing this DDR."); 140:10-13 ("I see. Are you saying that the price to the customer is a function of the cost? A. Certainly, yes.").</p>

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		<p>Even with respect to the portions of his testimony that related to Exhibit 7, Dr. Oh's position as supervisor of the individuals who actually prepared the document and his familiarity with its contents provide more than adequate foundation for him to testify reliably about the document pursuant to Rule 3.43(b)(1). Again, Dr. Oh did <u>not</u> testify that he hadn't seen Exhibit 7 before, only that he could not remember this particular product roadmap from among the various similar documents that he had seen and, indeed, helped to create. As Dr. Oh testified, "I don't remember seeing this particular document [Exhibit 7], but <u>all the context here, I'm very familiar with.</u> I actually prepared those things with my people, and this just the derivatives of those documents" (332:15-18).</p> <p>Dr. Oh's testimony confirms that his understanding of Hyundai's business operations, its various product planning documents and this product roadmap provided a solid basis for reliable testimony. Dr. Oh understood clearly the source of the information used to compile Exhibit 7. (131:16-132:10). He also explained how Hyundai summarized the information provided by its customers in Exhibit 7. (132:11-18; 133:2-25). He also explained certain terms commonly used by Hyundai, including ES (engineering samples), CS (commercial sample) and MP (mass production. (142:5-144:6). Such testimony was all completely within the scope of Dr. Oh's personal knowledge and experience based on both his position and responsibilities at Hyundai and his familiarity with this and similar documents at the time.</p>

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<p>148:25-149:1 149:19-152:24 154:10-155:5 157:11-159:13 159:23-160:25</p>	<p>Dr. Oh's testimony about the purpose and meaning of Exhibit 8 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (333:4-16).</p>	<p>Exhibit 8 (which has been admitted into evidence without objection as CX 2287) was a document created by Hyundai for the IBM/Supplier Forum in 1997, a meeting set up by IBM and memory suppliers to discuss IBM's future memory needs. (149:19-150:21). The document was a collection of materials from pre-existing files with which he was very familiar. (358:10-21). Dr. Oh knew and was responsible for the individuals who prepared Exhibit 8. (358:22-359:6). Dr. Oh confirmed that he was familiar with the substance and content of Exhibit 8. (359:7-9).</p> <p>Again, Respondent's broad, undefined objection sweeps in many questions concerning Dr. Oh's general knowledge and understanding unrelated to the content of Exhibit 8. See, e.g., 150:2-3 ("Could you please explain, what is the IBM Supplier Forum '97 DDR?"); 150:25-151:2 ("Okay. Do you have any understanding of why IBM was having a supplier forum on DDR in 1997 when JEDEC still had not yet completed the standard for DDR SDRAM?"); 151:20-22 ("When you say it's imperative for them to join a JEDEC meeting, are you referring to – A. For the whole community."); 157:25-158:1 ("First of all, what other next-generation DRAMs were there, if any?"); 158:5-8 ("Was cost-effectiveness an important consideration for Hyundai? . . . Why?"); 160:4-10 ("Was JEDEC standardization an important factor to Hyundai? . . . Why?"). There clearly can be no issue of reliability or foundation with respect to Dr. Oh's testimony, based on his own understanding, in response to these questions.</p>

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		<p>Much of the remaining testimony was based on Dr. Oh's individual personal experience and understanding, and referred to Exhibit 8 only in passing. See 154:10-18 ("What, if any, is the relationship between the DDR SDRAM that's being discussed in – is it Exhibit 8? . . . – and the work that was going on at JEDEC at the time? . . ."). (358:10-21). Moreover, Dr. Oh's testimony revealed his extensive knowledge about the concepts discussed in Exhibit 8 (148:25-160:25).</p> <p>With respect to questions relating specifically to Exhibit 8, Dr. Oh's answers confirm that he had a very complete and clear understanding of the substance of and concepts reflected in the document. See, e.g., 158:25-159:22 (explaining why minimal cost adders was important for high volume commodity parts); 160:14-25 (explaining the importance of having chipset support from companies in addition to Intel).</p>

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<p>161:1-4 161:17-22 163:7-18 165:11-167:7</p>	<p>Dr. Oh's testimony about the purpose and meaning of Exhibit 9 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (333:17-24).</p>	<p>Exhibit 9 (which has been admitted into evidence without objection as CX 2263) is a report prepared by Hyundai marketing personnel following meetings with IBM and Hewlett Packard. Again, Dr. Oh testified that it was hard to remember seeing individual reports from several years ago, but he remembered the contents of Exhibit 9. (359:21-360:4).</p> <p>As with Exhibits 2, 7 and 8, many of the questions objected to were not, in fact, tied to the specific content of the document, but rather called for testimony based on Dr. Oh's general knowledge of Hyundai's business. See, e.g., 163:7-9 ("Now, does this reflect that Hyundai representatives were meeting with IBM and with Hewlett-Packard?"); 163:11-12 ("What – what would the purpose of such meetings have been?"); 165:17-18 ("Why was Hyundai meeting with Hewlett-Packard in 1997 to talk about Hewlett-Packard's plans for 1999?"); 166:2-4 ("Was Hewlett-Packard unique, or was it typical for customers to take – or to need two years to – to plan for incorporation of memory into their products?"); 166:18-20 ("Okay. Do you have any understanding as to why Hewlett-Packard needed DDR engineering samples in June of 1998?"); 166:24-167:2 ("I see. So in other words, Hewlett-Packard would have been working on the design of its workstation before June of 1998?"). Dr. Oh's testimony in response to these questions was entirely unrelated to the content of Exhibit 9.</p> <p>The questions based on the content of Exhibit 9 itself were limited to identifying the document (161:17-22) and confirming that the term ES meant engineering sample, as in other Hyundai documents (166:7-17). Dr. Oh clearly had ample knowledge to testify on these subjects.</p>

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<p>170:5-17 172:15- 173:23 174:3-176:25 177:20- 178:13</p>	<p>Dr. Oh’s testimony about the purpose and meaning of Exhibit 10 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (333:25-334:3).</p>	<p>Exhibit 10 (which has been entered into evidence without objection as CX 2264) is a summary of a meeting between IBM technology and quality personnel and Hyundai marketing staff. Dr. Oh again testified that he could not recall seeing this individual document, but that he was “fully aware” with its contents of Exhibit 10. (334:4-7). When asked by Respondent, “Are you aware that IBM held the views expressed in this document prior to your preparation [with counsel for the deposition]?”, Dr. Oh responded, “Sure. I personally visited them and discussed this kind of – the directions.” (334:12-16).</p> <p>Again, a number of questions objected to by Respondent were independent of Exhibit 10. See, e.g., 173:18-21 (“Did customers generally prefer a logical migration from one generation to the next? . . . Why?”); 175:16-17 (“Why was the cost of building Direct Rambus more [than the cost for building DDR]?”); 176:5-6 (“When you refer to boards, is that part of the test equipment?”); 176:9-11 (“I see. So would that apply both to the test equipment and to the burn-in boards?”).</p> <p>With respect to questions relating to Exhibit 10, Dr. Oh had ample foundation to respond based on his understanding while a Hyundai Senior Vice president of the contents of the document, his experience and responsibilities with Hyundai’s semiconductor business, and his visits and communications with IBM representatives concerning the topics discussed in Exhibit 10. Thus, for example, he was able to explain that a reference in the document to the “cost issue” of Direct Rambus being “poor” indicated that the projected cost of building Direct Rambus would be</p>

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		<p>higher than SDRAM, whereas the reference to “ok” in connection to DDR indicated that the projected cost of building DDR SDRAM would be comparable to SDRAM. (174:17-175:15). Likewise, under the topic of “open standard spec.,” a reference to “poor” in connection with Direct Rambus indicated that Direct Rambus was not adopted at JEDEC, whereas a reference to “good” in connection with DDR indicated that DDR would be adopted at JEDEC. (177:20-178:13). Dr. Oh’s knowledge of Hyundai’s business, awareness of the content of Exhibit 10 and visits and communications with IBM representatives provided more than adequate foundation for this testimony.</p>

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183:21-24 184:13- 190:12	Dr. Oh's testimony about the purpose and meaning of Exhibit 12 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (335:2-19).	<p>Exhibit 12 (which has been admitted into evidence without objection as CX 2303) consists of the materials prepared by Hyundai for a quarterly meeting with Dell Computer in early 1998. (184:13-23). Again, as with the other Exhibits, Dr. Oh did <u>not</u> testify that he had not seen the prior to preparing for his deposition. Rather, he testified that they had generated many similar tables, and it was not fair to ask whether he remembered this particular one. (335:12-15). Respondent accurately and fairly summarized the situation in the question, "So you might have seen these tables, but you can't say for sure whether you saw these or similar tables, correct?", to which Dr. Oh readily responded, "Yeah." (335:16-19). Dr. Oh testified that he was familiar with the contents of Exhibit 12. (361:25-362:2). As Dr. Oh explained, "I'm familiar with those. . . . I often visit my customers with my marketing people and present this" (362:5-8).</p> <p>Unlike the situation with respect to Exhibits 2, 7, 8, 9 and 10 discussed above, almost all of the questions objected to were in fact related to the contents of Exhibit 12. For the reasons stated above, however, Dr. Oh had ample basis to testify with respect to the substance of Exhibit 12, and his testimony in fact reflects his knowledge and understanding of the content of the document. See, e.g., 185:8-21 (explaining in general terms a table summarizing Hyundai's strategy for development of DDR SDRAM products targeted to workstations, servers and main PC memory and the status of product development); 185:22-187:17 (explaining specific lines of the table); 187:18-190:12 (explaining the listing of chipset makers for servers, workstations, PC maini memory and graphics boards).</p>

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<p>198:20-23 203:21-205:1</p>	<p>Dr. Oh's testimony about the purpose and meaning of Exhibit 13 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (248:18-250:4).</p>	<p>Exhibit 13 (which has been admitted into evidence without objection as CX 2306) is a letter from the Hyundai customer service and marketing engineer located at the IBM facility in New York to Hyundai marketing personnel with respect to DDR SDRAM programs. Again, Dr. Oh testified that he was aware of and familiar with the general contents of the document. (249:3-7; 249:15-18).</p> <p>The only questions to which Respondent objected asked Dr. Oh to confirm the meaning of the terms ES (engineering sample) and CS (commercial sample), terms which Dr. Oh had already defined in connection with two other documents, and to explain the term, "design tape-out." (203:21-204:9). Based on his many years of experience in the industry and with Hyundai as well as his familiarity with the contents of the document, Dr. Oh explained that design tape-out refers to the point in time when the circuit design is completed and the data is recorded on a tape and sent to mask-making companies to manufacture masks. (204:10-205:1). Dr. Oh's authoritative answer confirms that he had ample foundation to respond to the question.</p>

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<p>211:5-17 211:25 - 215:2 215:11- 221:15 222:17- 226:25</p>	<p>Dr. Oh's testimony about the purpose and meaning of Exhibit 14 to his deposition lacks foundation because he had not seen the document prior to preparing for his deposition (335:20-336:9).</p>	<p>Exhibit 14 (which has been admitted into evidence without objection as CX 2334) is a document prepared by Hyundai for the Asia-Pacific Technology Forum in April 1999. (211:5-17).</p> <p>As with Exhibits 2, 7, 8, 9 and 10, many of the questions to which Respondent objects were not specific to Exhibit 14, but rather simply asked Dr. Oh to respond based on his knowledge and understanding of the industry and Hyundai's business. See, e.g., 212:5 ("What is PC100/133?"); 212:14 ("And what is 'PC266'?"); 212:22-23 ("Why was Hyundai planning a migration path from a single data rate to double data rate?"); 213:4-6 ("I guess my question is: why couldn't Hyundai just simply produce the new parts? Why did it need a migration path from SDRAM to DDR SDRAM?"); 214:3-5 ("Okay. The phrase, 'Evolutionary Not Revolutionary', is that a good thing, or is that a bad thing, or is that neutral?"); 214:14-19 ("Did customers want evolutionary technology, or revolutionary technology? . . . Why?"); 218:10-11 ("Why does open standards at JEDEC promote a competitive market?"); 223:5-7 ("If I could ask about the test cost, first. Why was the test cost for Rambus DRAM higher than test costs for other DRAM?"); 223:17-18 ("Next, with respect to yield, can you please explain why a lower yield would relate to a higher cost?"); 224:10-13 ("So what I'm trying to understand, then, is if the yield was lower for Direct Rambus DRAM than for other types of DRAM, how would the lower yield equate to a higher cost?"); 225:1-6 ("At that time, did you regard the royalty cost for Rambus DRAM to be significant in comparison with other costs of producing Rambus DRAM? . . . Why is that?"); 226:2-3 ("Did Hyundai assign a high priority to Direct Rambus DRAM?").</p>

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		<p>Indeed, these portions of the transcript makes clear that Dr. Oh is testifying in response to these questions based on his own knowledge and understanding, based on his own experience and responsibilities at Hyundai. See, e.g., 221:3-15 (“Why is it that – that, two years after Hyundai signed the amendment with Rambus to provide the technology for Direct RDRAM, that Direct RDRAM still was not fully proven? A. This is exactly what I have been trying to tell you and show you. In developing really revolutionary technology, just like Rambus, it takes long time . . . This is almost two, three years [after signing the amendment to the Hyundai-Rambus license agreement], and [Direct RDRAM] has not been proved, so that clearly demonstrates that it takes a long time for [a] DRAM manufacturer to develop ... new revolutionary products.”).</p> <p>Even with respect to those questions that related to Exhibit 14, Dr. Oh based his testimony on having reviewed the issues reflecting in the document with his employees, and indeed, the majority of the issues were decided at his direction. See, e.g., 364:22-365:13 (“What was – what information were you relying on when you answered all those questions [relating to Exhibit 14]? [objection omitted.] These are the very important items we discuss when we develop new products, and we go through every one of those issues when we develop new products, so DDR is very – one of the very important products we are – we developed, we are developing, and without knowing this, you cannot develop a – any new products. I went through this many, many times with my people, and this came from my – majority of those came from my direction when we decide this. That’s the reason I’m – I’m fully confident when I said I’m – I know this.”).</p>

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		<p>This was the basis for Dr. Oh to explain a number of commonly-used terms in Hyundai and the industry that were included in Exhibit 14. See, e.g., 213:19-214:2 (“First I’d like to direct your attention to the last line at the bottom of the page [148851]. It states, ‘Evolutionary Not Revolutionary.’” Do you see that line? A. Yes. Q. What does that line mean? A. That means that this – this path is not revolutionary. It does not require much, much higher technology. It’s just evolution of SDR to DDR.”); 215:11-19 (“If I can direct your attention to the eight gray boxes that appear underneath the line we just read, is there any relationship between those eight gray boxes and the line, ‘DDR Can Share Existing SDRAM Investment and Infrastructure? A. Those are the – just some milestones you – or it was some things you have to check whenever you develop new products, but this shows the typical things you check when you develop the SDRAM.”); 215:22-216:14 (“Starting with the box in the upper left-hand corner, ‘SDRAM Core Circuit/Process’, is that something that – is that something that DDR would be able to share, the SDRAM core circuit and process? A. That’s exactly what it means. We have already developed – developed SDRAM core circuit and process, and we can just adapt that for DDR. Q. Okay. The next box says ‘SDRAM Tester.’ What does that refer to? A. We can use exactly the same SDR tester for DDR testing. Q. Okay. And by ‘tester’, you mean the test equipment? A. Yes. Q. Okay. The next box is ‘TSOP Package.’ What does that mean? A. This means we can use exactly the same package for DDR as that of SDR.”). Dr. Oh’s testimony in response to other questions about commonly-used terms appearing in Exhibit 14 also demonstrated his solid knowledge and understanding of the issues about which he was being asked. See, e.g., 216:18-217:3; 217:17-220:1; 222:17-223:4; 225:12-226:25.</p>

III. The Fact That, On Two Occasions, Dr. Oh Referred To A Chart To Assist In The Recollection Of Specific Dates Of Product Launches Does Not Serve To Render His Testimony Unreliable

Rambus objects to two instances in which Dr. Oh referred to a time line his counsel “helped him put together to remember all these [product launch] dates” (52:21-24).

Rambus was not prejudiced in any way by Dr. Oh’s reference to the chart in question. The chart was compiled from documents produced by Hynix to Rambus, so Rambus had access to all underlying information. (353:18-24). Counsel for Hynix also offered a copy of the chart to counsel for Rambus, who had full opportunity to question Dr. Oh with respect to it. (52:21-24).

The fact that Dr. Oh referred to a chart on occasion in no way renders his testimony unreliable; rather, it renders it more reliable. We have already seen, and no doubt will continue to see, witnesses become confused with respect to specific dates, especially in a case involving events beginning over a decade ago. It frequently has been necessary to use documents to refresh the recollection of witnesses in this matter with respect to specific dates. This in no way renders their testimony unreliable, such that it should be excluded; rather, all relevant testimony is included in the record, with the appropriate weight being attached to the testimony before and after the memory of the witness is refreshed with the relevant documents. There is no reason why the deposition testimony of Dr. Oh should be treated any differently.

Response to Rambus's Attachment C

Page and Line	Respondent's Objection	Complaint Counsel's Response
37:9-39:1	This testimony is based on the witness' prior testimony that Hyundai began work to design SDRAMs in November 1992 (<i>see</i> 36:22-37:8). However, the videotape of that prior testimony shows the witness consulting the timeline prepared by his counsel (21:8-19).	The chart referred to by Dr. Oh merely listed specific dates that Hyundai worked on and first introduced sales of certain products. It was compiled from other documents produced by Hyundai and Respondent's counsel was provided a copy to verify its accuracy. There is nothing improper about a witness's memory with respect to specific dates being refreshed by reference to a document.
37:9-39:1	Moreover, there is no foundation that Dr. Oh was familiar with the work of companies other than Hyundai.	The objection applies to only a portion of the indicated testimony. (37:20-23; 38:17-39:1). The foundation for Dr. Oh's testimony is provided in his answers: other companies had presented proposals of the work they had done at JEDEC and at other conferences and technical meetings. (37:15-23; 38:8-16).
343:1-23	Dr. Oh's testimony about the timing of events was based on the time line prepared by his counsel.	The chart Dr. Oh used merely listed specific dates that Hyundai worked on and first introduced sales of certain products. It was compiled from other documents produced by Hyundai and Respondent's counsel was provided a copy to verify its accuracy. (353:18-24).
343:1-23	Moreover, there is no foundation for Dr. Oh's testimony about JEDEC standardization of DDR SDRAM.	Dr. Oh's testimony about JEDEC standardization was based on his years of experience monitoring the work at JEDEC meetings (343:19-344:1). Moreover, Dr. Oh selected and supervised the individuals who attended JEDEC meetings on behalf of Hyundai and received "trip reports" from Hyundai's JEDEC representatives. (24:10-26:21).

IV. Rambus’s Miscellaneous Objections Are Without Merit

Rambus raises a number of miscellaneous objections; Complaint Counsel’s responses to the specific objections follow.

Response to Rambus’s Attachment D

Page and Line	Respondent’s Objection	Complaint Counsel’s Response
29:7-31:7	No foundation that Dr. Oh had knowledge of the policies or practices of JEDEC, or that he was familiar with the beliefs of segments of the computer industry other than memory manufacturers.	Dr. Oh’s testimony was based on his years of experience with the DRAM industry. The questions were framed to elicit testimony based on Dr Oh’s “position at that time as executive vice president of R&D of the Hyundai semiconductor division” (29:7-8). In the testimony at issue, Dr. Oh simply explained how the DRAM industry is interconnected and why standardization is important (30:6-31:7). Furthermore, Dr. Oh supervised the individuals who attended JEDEC meetings on behalf of Hyundai and received trip reports from Hyundai’s JEDEC representatives (24:10-26:21). Indeed, the exhibit Dr. Oh is testifying about at these pages is a JEDEC trip report that he received. (26:6-21).
56:15-57:2	Non-responsive.	Dr. Oh was asked whether Hyundai waited for testing to be completed before starting work on the packaging. He responded that there are two types of testing; first, they test in wafer form, then the chips are packaged and tested again a second time after packaging.

Page and Line	Respondent's Objection	Complaint Counsel's Response
57:3-13	Leading and irrelevant in light of Dr. Oh's later testimony that packaging would not necessarily need to be changed if DRAM interface circuitry were changed (243:17-22). The question and answer at 57:8-13 is also confusing and prejudicial in light of the later testimony.	Dr. Oh's testimony regarding packaging is relevant because it illustrates the lock-in effect. As Dr. Oh explained, if there were a change in the JEDEC standard for synchronous DRAM, Hyundai would "have to redesign the whole [packaging design] again" (57:3-13). His later testimony does not contradict this statement, but simply clarifies that a change in pin location would not require a different leadframe, whereas a change in something else would require a different leadframe (243:8-22).
58:8-59:7 60:14-61:22	No foundation for Dr. Oh's testimony about SyncLink.	Dr. Oh testified that he was familiar with the SyncLink Consortium because Hyundai participated in SyncLink (58:8-24).
69:2-10	No foundation for this testimony in light of Dr. Oh's later testimony that he was concerned that Rambus might have patents that extended to SyncLink (73:3-6).	Rambus is attempting to contrast testimony from two different points in time. Dr. Oh testified that in April 1995 he was unaware that Rambus might have patents or patent applications that extended outside the scope of RDRAM. (69:2-10). From May to September 1995, evidence indicates that Rambus made some partial disclosures at SyncLink. In November 1995 (the time frame of Dr. Oh's later statement – see Exhibits 3 and 4, dated 11/22/1995, introduced at pp. 69-70), Hyundai was reacting to Rambus's partial disclosures in the context of its licensing negotiation. (73:3-6). Accordingly, Dr. Oh's testimony, from two distinct time periods, does not conflict.

Page and Line	Respondent's Objection	Complaint Counsel's Response
70:11-73:2 74:1-3 75:4-77:7	Dr. Oh's testimony about Exhibit 3 (and its translation Exhibit 4), which he did not prepare, is hearsay and without foundation. There is also no foundation for Dr. Oh's testimony about license negotiations with Rambus.	Dr Oh testified that he was very familiar with the contents of Exhibit 3 and with the Rambus-Hyundai license negotiations (65:2-67:20). As Dr. Oh stated, "This [Exhibit 3] is the basis on which I signed on the [Rambus licensing] agreement. I'm sure I have seen this" (330:4-7). He also confirmed that the translation, Exhibit 4, was "accurate" (331:6-9). Dr. Oh negotiated the Hyundai-Rambus license agreement, signed the agreement, and offered relevant, material, and reliable testimony about the agreement. ²

² Rambus also objects to testimony about Exhibits 3 and 4 on hearsay grounds. Dr. Oh's testimony regarding exhibits 3 and 4 is relevant not to show the truth of the matter asserted in those exhibits – whether SyncLink was free of patents or whether Rambus did or did not have patents relevant to SyncLink; rather, his testimony is relevant to show Dr. Oh's state of mind at the time he was negotiating the license agreement with Rambus – he thought Rambus did not have patents relating to SyncLink, but in case Rambus did, he wanted to protect Hyundai through contract negotiations. Thus, the testimony is not hearsay, as defined in Rule 801(c) of the Federal Rules of Evidence. Even if the statement were hearsay, the objection would be inappropriate because the Commission itself has ruled that "all relevant and material evidence – whether it is hearsay or not – is admissible, as long as it is reliable." *In the Matter of American Home Products Corp.*, 98 F.T.C. 136 (1981); *see also In the Matter of Kellogg Co.*, 99 F.T.C. 8, 31-32 (1982) ("Section 3.43(b) of the Commission's Rules of Practice provides for the admission of relevant, material, and reliable evidence. It does not exclude hearsay evidence, and hearsay evidence may be received.")

Page and Line	Respondent's Objection	Complaint Counsel's Response
91:12-92:6	Irrelevant.	This line of questioning concerns the contract provision for "Other DRAMs." This provision shows that, when Hyundai thought there might be some possibility that Rambus might have patents relating to SyncLink, Hyundai took steps to ensure that it had "insurance" in the form of a right (albeit expensive) to use Rambus technology for non-Rambus DRAMs. (99:5-23). It also shows that the royalty rates that Rambus charged for its entire package of technology was set to decline to 1.5% at volume production, compared to the much higher rates later charged for only small portions of its technology after companies became locked in to the JEDEC standards.
95:24-96:21 99:5-23 100:13-101:12 101:21-102:11	No foundation for Dr. Oh's testimony about the license agreement with Rambus.	As stated above, Dr Oh was very involved in the license negotiations with Rambus (65:2-67:20).
103:11-13 103:20-105:19	No foundation for Dr. Oh's testimony about the amendment to the license agreement with Rambus.	Same response as above. Dr. Oh was also very familiar with the amendment to the license agreement (103:11-104:1).
109:3-7	No foundation for Dr. Oh's testimony about SyncLink.	Dr. Oh testified that he was familiar with the SyncLink Consortium because Hyundai participated in SyncLink (58:20-24).

Page and Line	Respondent's Objection	Complaint Counsel's Response
<p>109:23-110:19 115:21-116:9 116:22-117:25 118:22-119:14</p>	<p>Dr. Oh's testimony that Geoffrey Tate of Rambus suggested that Hyundai stop participating in SyncLink is more prejudicial than probative in light of Dr. Oh's later testimony that all he can actually recall Mr. Tate saying is that it was inappropriate for Farhad Tabrizi, a Hyundai marketing manager who was also the chairman of the SyncLink consortium, to be privy to confidential Rambus information (114:25-115:9; 116:10-18; 322:16-22).</p>	<p>Dr. Oh's testimony regarding SyncLink is highly relevant to Rambus's "conspiracy theory" defense. As Dr. Oh's statements illustrate, when Rambus forced Hyundai to choose between SyncLink and Rambus, Hyundai withdrew from SyncLink and chose to work with Rambus. Hyundai did not participate in an alleged conspiracy among DRAM manufacturers, but rather worked with Rambus. Indeed, it was Rambus, not DRAM makers, that sought to stifle competition from competing architectures. Moreover, this type of objection is not suitable for a bench trial where the ALJ and Commission weigh the evidence.</p>
<p>119:20-23</p>	<p>No foundation for Dr. Oh's testimony about the relationship of similarities between SDRAM and DDR SDRAM. Improper opinion testimony.</p>	<p>Dr. Oh is defining common industry terms that he used extensively while working at Hyundai. The passage reads, "Q. Can you please explain for the record <u>your understanding</u> of the term 'DDR SDRAM?' A. DDR is just a derivative of SDR, which is single-data-rate RAM. DDR is double-data-rate RAM." (119:20-23).</p>

Page and Line	Respondent's Objection	Complaint Counsel's Response
168:10-16	No foundation for testimony about testing by Hewlett-Packard.	Dr. Oh testified with respect to his own understanding of Hewlett-Packard's testing practices. Dr. Oh worked closely with HP and other Hyundai customers (163:7-164:13). As Dr. Oh testified, "I visit [Hyundai customers, specifically HP and IBM] at least once a quarter to exchange ideas and – so that we know what we need – what each party wants to see and what each party needs in the future" (163:21-24). Dr. Oh had to have an understanding of HP's testing procedures in order to coordinate timing and supply of sample chips (the so-called engineering samples and customer samples, about which Dr. Oh testified in other portions of his deposition).
227:25-228:19	Vague.	The questions were sufficiently specific that Dr. Oh had no difficulty understanding the questions or providing responsive answers. For example: "Q. What was your understanding of the relative cost of producing Direct Rambus DRAM versus other types of DRAM? A. Much, much higher." (228:5-9).

Page and Line	Respondent's Objection	Complaint Counsel's Response
230:1-232:11	Dr. Oh's testimony about JEDEC and the possibilities of designing around Rambus's patents lacks foundation, is improper opinion testimony, and is more prejudicial than probative.	Between 1997 and 1999, Dr. Oh was the individual at Hyundai with ultimate responsibility for the decision of what DRAM designs to pursue. His testimony concerning the influence of JEDEC's standardization of DDR SDRAMs on his decision to design, produce and sell DDR SDRAMs is directly relevant and highly probative. Likewise, his testimony that he would have sought to have Hyundai design around known patents is highly probative with respect to the issue that Rambus seeks to inject into this litigation – whether the JEDEC standard would be different today if Rambus had disclosed its patent position to JEDEC. ³ Dr. Oh certainly has the foundation to testify as to his understanding in the 1997-1999 time frame and the factors (such as the existence or absence of patents) that he had in mind at the time he made the decision to begin development of DDR SDRAMs. The evidence may be harmful to Respondent's litigation position, but that is no grounds to exclude this relevant and material evidence from the record.
289:21-291:6	No foundation for Dr. Oh's testimony about the JEDEC patent policy.	Dr. Oh's testimony about JEDEC was based on his years of experience monitoring the work at JEDEC meetings (343:24-344:1). As explained above, Dr. Oh supervised and selected the individuals who attended JEDEC meetings on behalf of Hyundai (23:10-26:21), and received trip reports from the individuals who attended JEDEC meetings (26:16-21; 28:6-19).

³ See Trial Brief of Respondent Rambus Inc. (4/22/03) at 63-69.

Page and Line	Respondent's Objection	Complaint Counsel's Response
354:23-356:11	No foundation for Dr. Oh's testimony about the license agreement with Rambus.	As stated above, Dr Oh was very involved in the license negotiations with Rambus and even signed the license agreement (65:2-67:20).
354:23-356:11	The questioning called for speculation and was leading.	A question is not leading simply because it calls for a yes or no answer. Moreover, even if it could be characterized as leading, such questions are appropriate to help structure the testimony of a foreign witness. <i>See U.S. v. Rodriguez-Garcia</i> , 983 F.2d 1563, 1570. Indeed, the record indicates that Dr. Oh had difficulties understanding the question (354:23-356:1, especially 355:2 ("Could you rephrase once more")). Once he understood the question, however, he answered in his own words (356:9-11 ("If Rambus proves that it [SDRAMs sold by Hyundai] does [infringe Rambus patents], then we [would] have [had] to follow whatever we agreed [to] in the agreement.")).
356:12-357:13	Leading	Same answer as above. Again, Dr. Oh answered the ultimate question in his own words (356:23-25 ("Not only anybody from Hyundai, . . . but also Rambus did not approach [me] to discuss [Hyundai SDRAMs potentially infringing Rambus patents] either.")).

For the above stated reasons, Rambus's various individual objections to the admission of specific portions of Dr. Oh's testimony should be overruled.

Respectfully submitted,

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Dated: June 2, 2003

CERTIFICATE OF SERVICE

I, Melissa Kassier, hereby certify that on June 2, 2003, I caused a copy of the following materials:

1. Complaint Counsel's Response to Rambus Inc.'s Supplemental Memorandum in Support of its Objections to the Deposition Testimony of Dr. K.H. Oh,

to be served upon the following persons:

by hand delivery to:

Hon. Stephen J. McGuire
Chief Administrative Law Judge
Federal Trade Commission
600 Pennsylvania Avenue, NW
Washington, DC 20580

and by electronic mail and courier to:

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