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18 *Attorneys for Plaintiff*  
19 LIMESTONE MEMORY SYSTEMS LLC

20 **UNITED STATES DISTRICT COURT**  
21 **CENTRAL DISTRICT OF CALIFORNIA**

22 LIMESTONE MEMORY SYSTEMS LLC, a  
23 California Limited Liability Company,  
24  
25 Plaintiff,

26 v.

27 MICRON TECHNOLOGY, INC., AND  
28 MICRON MEMORY JAPAN, INC.,  
Defendants.

Case No.: 8:15-cv-00278-DOC-RNB

**SECOND AMENDED COMPLAINT FOR  
PATENT INFRINGEMENT**

**DEMAND FOR JURY TRIAL**

1 Plaintiff, Limestone Memory Systems LLC (“LMS”), complains against  
2 Defendants Micron Technology, Inc. and Micron Memory Japan, Inc. (collectively  
3 “Defendants”) for patent infringement pursuant to this Court’s subject matter jurisdiction  
4 under 28 U.S.C. §§1331 and 1338(a), as follows:

5 **THE PARTIES**

6 1. Plaintiff LMS is a corporation organized and existing under the laws of the  
7 State of California with its principle place of business at 520 Newport Center Drive, 12th  
8 Floor, Newport Beach, California. LMS is in the business of licensing patented  
9 technology. LMS is the assignee of U.S. Patent Nos. 5,805,504 (“the ‘504 patent”),  
10 5,894,441 (“the ‘441 patent”), 6,233,181 (“the ‘181 patent”), and 6,697,296 (“the ‘296  
11 patent”), (collectively “the Patents-in-Suit”).

12 2. Defendant Micron Technology, Inc. (“MTI”) is a corporation incorporated  
13 under the laws of Delaware with its principal place of business at 8000 South Federal  
14 Way, Boise, ID. Defendant MTI is registered to do business in California and has a  
15 designated registered agent in California for purposes of service of process. Defendant  
16 MTI conducts business in and is doing business in California and in this District and  
17 elsewhere in the United States, including, without limitation, using, promoting, offering to  
18 sell, importing and/or selling memory devices and/or devices that incorporate memory  
19 devices that embody the patented technology, and enabling end-user purchasers to use  
20 such devices in this District. Defendant MTI is subject to the subpoena power of this  
21 Court within the State of California.

22 3. Defendant Micron Memory Japan, Inc. is a corporation with a principal place  
23 of business at Sumitomo Seimei Yaesu Bldg., 3F, 2-1 Yaesu 2-chome, Chuo-ku, Tokyo  
24 104-0028, Japan. On information and belief, Micron Memory Japan, Inc. is a wholly-  
25 owned subsidiary of MTI. Micron Memory Japan is the parent company of Micron Akita,  
26 Inc., with a principal place of business at 89-2, Yamada, Yuwaishida, Akita-shi, Akita  
27 010-1222, Japan (“Micron Akita”). Micron Akita, Inc. supplies Micron Memory Japan  
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1 and MTI with memory devices and/or devices that incorporate memory devices that  
2 embody the patented technology. On information and belief, Micron Memory Japan  
3 manufactures and sells memory devices and/or devices that incorporate memory devices  
4 that embody the patented technology and also sells such DRAM semiconductor devices  
5 manufactured by foundries such as Micron Taiwan, and Micron Akita.

6 4. Upon information and belief, MTI controls and is the majority owner of  
7 Micron Memory Japan and both are joint tortfeasors with one another with respect to the  
8 matters alleged herein.

9 **JURISDICTION AND VENUE**

10 5. This is an action for patent infringement arising under the Patent Laws of the  
11 United States, 35 U.S.C. § 1 *et seq.* This Court has subject matter jurisdiction over this  
12 action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

13 6. On information and belief, the Defendants are subject to this Court's specific  
14 and general personal jurisdiction pursuant to due process and/or the California Long Arm  
15 Statute, due at least to their substantial business conducted in this forum, directly and/or  
16 through intermediaries, including (i) having solicited business in the State of California,  
17 transacted business within the State of California and attempted to derive financial benefit  
18 from residents of the State of California, including benefits directly related to the instant  
19 patent infringement causes of action set forth herein; (ii) having placed their products and  
20 services into the stream of commerce throughout the United States and having been  
21 actively engaged in transacting business in California and in this District; and (iii) either  
22 alone or in conjunction with others, having committed acts of infringement within  
23 California and in this District. On information and belief, the Defendants, directly and/or  
24 through intermediaries, have advertised (including through websites), offered to sell, sold  
25 and/or distributed infringing products, and/or have induced the sale and use of infringing  
26 products in the United States and in California. The Defendants have, directly or through  
27 their distribution network, purposefully and voluntarily placed such products in the stream  
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1 10. On April 23, 2015, LMS filed its First Amended Complaint (the “First  
2 Amended Complaint”) against MTI that asserted two additional patents: U.S. Patent Nos.  
3 6,233,181 (“181 patent”) and 6,697,296 (“296 patent”), which also relate to  
4 semiconductor memory devices. (D.I. 32.)

5 11. LMS also asserted varying combinations of the ‘504, ‘441, ‘181, and ‘296  
6 patents against a number of other entities based on their inclusion of the MTI  
7 semiconductor memory devices in their products. The complaints asserted against the  
8 other entities were identified as related to the First Amended Complaint against MTI and  
9 the cases were coordinated for pretrial purposes. (D.I. 56.)

10 12. On October 26, 2015, MTI filed petitions for *inter partes* review with the  
11 PTAB, alleging that some of the claims in the Patents-in-Suit were invalid. On December  
12 1, 2015, MTI filed a motion to stay the case pending the *inter partes* review. (D.I. 62.) On  
13 January 12, 2016, this Court granted MTI’s motion to stay pending the *inter partes*  
14 review. (D.I. 69.)

15 13. At the conclusion of the *inter partes* review, given that there were claims that  
16 were determined not to be invalidated by the United States Patent and Trademark Office,  
17 MTI and LMS jointly filed a stipulation to lift the stay on November 6, 2017. (D.I. 76.)  
18 LMS and MTI jointly filed a proposed schedule on December 7, 2017 (D.I. 79), which  
19 this Court adopted the next day. (D.I. 81.)

20 **FIRST CAUSE OF ACTION – INFRINGEMENT OF ‘504 PATENT**

21 14. Plaintiff hereby repeats and re-alleges the allegations contained in paragraphs  
22 1 to 13, as if fully set forth herein.

23 15. On September 8, 1998, U.S. Patent No. 5,805,504 entitled “Synchronous  
24 Semiconductor Memory Having A Burst Transfer Mode With A Plurality Of Subarrays  
25 Accessible In Parallel Via An Input Buffer,” a copy of which is attached hereto as Exhibit  
26 A, was duly and legally issued to the inventor, Mamoru Fujita. The ‘504 patent issued  
27 from U.S. patent application Serial Number 08/758,367, filed November 29, 1996 and  
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1 discloses novel memory devices with burst mode transfer functions designed to receive  
2 and send large amounts of data quickly. The inventor assigned all right, title, and interest  
3 in the '504 patent to NEC Corporation (hereinafter "NEC"). NEC's right, title, and  
4 interest in the '504 patent was subsequently assigned to NEC Electronics Corporation,  
5 which further assigned such right, title, and interest to Renesas Electronics Corp  
6 (hereinafter "Renesas"). Renesas assigned all right, title, and interest in the '504 patent to  
7 Acacia Research Group LLC ("ARG"). The assignment to ARG was made subject only  
8 to certain prior non-exclusive license agreements and a limited non-exclusive and non-  
9 transferable limited license to Renesas. Neither the prior licensees nor Renesas possesses  
10 any right to sue for or collect past, present and future damages or to seek and obtain  
11 injunctive or any other relief for infringement of the '504 patent.

12 16. Prior to the commencement of this action, ARG assigned all right, title, and  
13 interest in the '504 patent to LMS, its wholly owned designated affiliate, including all of  
14 ARG's rights, obligations, interests and liabilities under the assignment agreement with  
15 Renesas. LMS assumed all such rights, obligations, interests and liabilities of ARG under  
16 such assignment agreement. LMS thus possesses the right to sue for or collect past,  
17 present and future damages or to seek and obtain injunctive or any other relief for  
18 infringement of the '504 patent.

19 17. Defendant MTI, directly and/or through its subsidiaries, affiliates, agents,  
20 and/or business partners, has in the past and continues to directly infringe the '504 patent,  
21 including at least claims 1-2, pursuant to 35 U.S.C. § 271(a) by making, having made,  
22 using, selling, offering to sell and/or importing memory devices that embody the  
23 inventions claimed in the '504 patent, within the United States and within this District.  
24 MTI has been and is engaged in one or more of these direct infringing activities related to  
25 memory devices that incorporate DRAM technology, including at least its DDR2, DDR3  
26 and DDR4 chips (hereinafter "the '504 DRAM Chips") and any other chip having  
27 substantially similar data transfer architecture.

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1 18. A non-exhaustive list of part numbers associated with the ‘504 DRAM Chips  
2 appears in a part catalog provided on MTI’s website (<http://www.micron.com/>), which list  
3 is attached hereto as Exhibit B.

4 19. Defendants, directly and/or through their subsidiaries, affiliates, agents,  
5 and/or business partners, have been and are now indirectly infringing the ‘504 patent,  
6 including at least claims 1-2, pursuant to 35 U.S.C. § 271(b) by actively inducing acts of  
7 direct infringement performed by others. MTI had actual notice of the ‘504 patent and the  
8 infringement alleged herein at least upon the filing of the Original Complaint. Upon  
9 information and belief, the Defendants have numerous lawyers and other active agents  
10 who regularly review patents and published patent applications relevant to technology in  
11 the fields of the Patents-in-Suit, specifically including patents directed to semiconductor  
12 memory devices issued to competitors such as NEC, the original assignee of the ‘504  
13 patent. Upon information and belief, the Defendants collectively have been issued over  
14 25,055 patents, including 425 patents prosecuted in the USPTO in the same classifications  
15 as the ‘504 patent, giving the Defendants intimate knowledge of the art in fields relevant  
16 to this civil action. The timing, circumstances and extent of the Defendants obtaining  
17 actual knowledge of the ‘504 patent prior to the commencement of this lawsuit will be  
18 confirmed during discovery.

19 20. Upon gaining knowledge of the ‘504 patent, it was, or became, apparent to  
20 the Defendants that the manufacture, sale, importing, offer for sale, and use of their ‘504  
21 DRAM Chips results in infringement of the ‘504 patent. Upon information and belief, the  
22 Defendants have continued and will continue to engage in activities constituting  
23 inducement of infringement, notwithstanding their knowledge, or willful blindness  
24 thereto, that the activities they induce result in infringement of the ‘504 patent.

25 21. The ‘504 DRAM Chips are intended for integration into products known to  
26 be sold widely in the United States. The Defendants make integrated circuit devices that  
27 embody the inventions claimed in the ‘504 patent, which devices infringe when they are  
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1 imported into, or sold, used, or offered for sale in the United States. The Defendants  
2 indirectly infringe by inducing customers and other downstream parties to import products  
3 that incorporate integrated circuit devices embodying inventions claimed in the '504  
4 patent, or to sell or use such products, or offer them for sale, in the United States. For  
5 example, the Defendants' customers, OEMs, importers, resellers, and others who purchase  
6 or otherwise obtain devices manufactured at the Defendants' overseas facilities, or  
7 supplied under agreement with partner foundries, to import devices embodying inventions  
8 recited in claims 1-2 of the '504 patent, or to sell or use such devices, or offer them for  
9 sale in the United States without authority.

10 22. Several of the '504 DRAM Chips are manufactured for use in several third-  
11 party products that have been imported, sold, and offered for sale in the United States. On  
12 information and belief, the '504 DRAM Chips are designed for use in these third-party  
13 products, and therefore the Defendants have the specific knowledge and intent that its  
14 infringing devices are destined for use in products sold, offered for sale, and/or imported  
15 into the United States. On information and belief, such third-party products include:

- 16 • Asus Aspire S3-951-6828 with Micron C400 256GB mSATA SSD
- 17 • Dell's XPS13 Laptop with Micron J8416E6MB-GNL-F 8 GB (8 x 1 GB)  
18 DDR3L-RS 1600 MHz dual-channel RAM
- 19 • Dell's Alienware 17 Laptop with Micron 4GB PC3L-12800 RAM
- 20 • Dell's Precision T3610 Workstation with Micron P320h PCIe SSD drive
- 21 • Dell's Precision T5610 Workstation with Micron P320h PCIe SSD drive
- 22 • Dell's Precision T5810 Workstation with Micron P320h PCIe SSD drive
- 23 • Dell's Precision T7610 Workstation with Micron P320h PCIe SSD drive
- 24 • Dell's Precision T7810 Workstation with Micron P420m PCIe SSD drives
- 25 • Dell's Precision Rack 7810 Workstation with Micron P420m PCIe SSD drives
- 26 • Dell's Precision Rack 7910 Workstation with Micron P420m PCIe SSD drive
- 27 • Dell's PowerEdge T620 Blade Server with Micron P320h PCIe SSD drive

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- 1 • Dell's PowerEdge M620 Blade Server with Micron P320h PCIe SSD drive
- 2 • Dell's PowerEdge M820 Blade Server with Micron P320h PCIe SSD drive
- 3 • Dell's PowerEdge R620 Rack Server with Micron P320h PCIe SSD drive
- 4 • Dell's PowerEdge R720 Rack Server with Micron P320h PCIe SSD drive
- 5 • Dell's PowerEdge R820 Rack Server with Micron P320h PCIe SSD drive
- 6 • Dell's Inspiron 14 7437 Laptop with Micron C400 256GB mSATA SSD
- 7 • HP's X820 blade server
- 8 • HP's BL870c PC server
- 9 • HP's Z420 Workstation with Micron C400 256GB mSATA SSD
- 10 • HP's Z620 Workstation with Micron C400 256GB mSATA SSD
- 11 • HP's Z820 Workstation with Micron RAM
- 12 • Lenovo's Ideapad Yoga 13 with Micron C400 128GB mSATA SSD
- 13 • Lenovo's System x3550 M5 with Micron M500DC Enterprise Value SATA
- 14 SSD
- 15 • Lenovo's ThinkPad T430s with Micron C400 256GB mSATA SSD
- 16 • OCZ's ARC 100 Solid State Drive digital data storage devices

17 23. On information and belief, the Defendants have taken affirmative steps to  
18 encourage or assist the identified third parties' importation of Defendants' infringing  
19 semiconductor memory devices into the United States.

20 24. The Defendants encourage customers, resellers, OEMs, or others to import  
21 into the United States and sell and use in the United States the '504 DRAM Chips  
22 embodying inventions claimed in the '504 patent with knowledge and the specific intent  
23 to cause the acts of direct infringement performed by these third parties. On information  
24 and belief, after the Defendants obtained knowledge of the '504 patent, the '504 DRAM  
25 Chips have been and will continue to be imported into the United States and sold in large  
26 volumes by themselves and by others, such as customers, distributors and resellers. Upon  
27 information and belief, the Defendants work closely with their customers in the processes  
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1 of selecting products appropriate for their customers' specific applications and developing  
2 new products. The Defendants are aware that the '504 DRAM Chips are integral  
3 components of the products incorporating them, that the infringing integrated circuits are  
4 built into the products and cannot be removed or disabled by a purchaser of the products  
5 containing the infringing integrated circuit devices, such that the Defendants' customers  
6 will infringe claims 1-2 of the '504 patent by incorporating such integrated circuit devices  
7 in other products, and that subsequent importation, sale, and use of such products in the  
8 United States would be a direct infringement of the '504 patent. Therefore, the Defendants  
9 are aware that their customers will infringe one or more claims of the '504 patent by  
10 importing, selling, offering for sale, and/or using the products supplied by the Defendants.

11 25. The Defendants directly benefit from and actively and knowingly encourage  
12 customers', resellers', and users' importation of these products into the United States and  
13 sale and use within the United States. The Defendants actively encourage customers,  
14 resellers, OEMs, and downstream users to import, use, and sell in the United States the  
15 '504 DRAM Chips that they manufacture and supply, including through advertising,  
16 marketing, and sales activities directed at United States sales. On information and belief,  
17 the Defendants are aware of the size and importance of the United States market for  
18 customers of their products, and also distribute or supply these products intended for  
19 importation, use, offer for sale, and sale in the United States. The Defendants routinely  
20 market their infringing integrated circuit products to third parties for inclusion in products  
21 that are sold to customers in the United States. MTI provides a direct sales outlet for these  
22 products in the United States. The Defendants' marketing efforts show that they have  
23 specifically intended to and have induced direct infringement in the United States.

24 26. The Defendants also provide OEMs, manufacturers, importers, resellers,  
25 customers, and end users instructions, data, simulation tools, user guides, technical  
26 resources, and technical specifications on how to incorporate the '504 DRAM Chips into  
27 electronics products that are made, used, sold, offered for sale in and/or imported into the  
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1 United States. When OEMs, manufacturers, importers, resellers, customers, and end users  
2 follow such instructions, data, simulation tools, user guides, technical resources, and  
3 technical specifications and embed the products in end products and make, use, offer to  
4 sell, sell, or import into the United States, they directly infringe claims 1-2 of the '504  
5 patent. The Defendants know that by providing such instructions, data, simulation tools,  
6 user guides, technical resources, and technical specifications, OEMs, manufacturers,  
7 importers, resellers, customers, and end users follow them, and therefore directly infringe  
8 one or more claims of the '504 patent. On information and belief, MTI provides technical  
9 support for the Defendants' '504 DRAM Chips in the United States. The Defendants thus  
10 know that their actions actively induce infringement.

11 27. The Defendants have engaged and will continue to engage in additional  
12 activities to specifically target the United States market for the '504 DRAM Chips and  
13 actively induce manufacturers, importers, resellers, customers, and end users to directly  
14 infringe at least claims 1-2 of the '504 patent in the United States. For example, the  
15 Defendants have showcased their semiconductor devices and process technologies at  
16 various industry events, such as such as CES, and through written materials distributed in  
17 the United States, and through the [www.micron.com](http://www.micron.com) website in an effort to encourage  
18 customers to include the infringing technology in their products. Upon information and  
19 belief, these events are attended by the direct infringers mentioned above (*i.e.*, Dell, HP,  
20 Lenovo, OCZ, and Acer) and generally by companies that make, use, offer to sell, sell, or  
21 import in the United States products that use semiconductor memory devices such as  
22 those made by the Defendants. The Defendants' website also enables customers to locate  
23 United States-based distributors of Defendants' products, such as Arrow Electronics, Inc.,  
24 Avnet, Digi-Key, Edge Electronics, Phoenix Electronics, and WPG Americas. The  
25 Defendants derive significant revenue by selling the '504 DRAM Chips to third parties  
26 who directly infringe the '504 patent in the United States.

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1           28. The Defendants derive significant revenue by selling the ‘504 DRAM Chips  
2 to third parties who directly infringe at least claims 1-2 of the ‘504 patent in the United  
3 States. The Defendants’ extensive sales and marketing efforts, sales volume, and  
4 partnerships all evidence their intent to induce companies to infringe at least claims 1-2 of  
5 the ‘504 patent by, using, offering to sell, selling, or importing products that incorporate  
6 the ‘504 DRAM CHIPS, in the United States. The Defendants have had specific intent to  
7 induce infringement or have been willfully blind to the direct infringement they are  
8 inducing.

9           29. Defendants’ direct and indirect infringement of the ‘504 patent has injured  
10 LMS. LMS is entitled to recover damages adequate to compensate for such infringement  
11 pursuant to 35 U.S.C. § 284. Unless they cease their infringing activities, the Defendants  
12 will continue to injure LMS by infringing the ‘504 patent.

13           30. On information and belief, the Defendants acted egregiously and with willful  
14 misconduct in that their actions constituted direct or indirect infringement of a valid  
15 patent, and this was either known or so obvious that the Defendants should have known  
16 about it. The Defendants continue to infringe the ‘504 patent by making, using, selling,  
17 offering for sale, and importing in the United States the ‘504 DRAM Chips, and to induce  
18 the direct infringement of others performing these acts, or they have acted at least in  
19 reckless disregard of LMS’s patent rights. On information and belief, the Defendants will  
20 continue their infringement notwithstanding actual knowledge of the ‘504 patent and  
21 without a good faith basis to believe that their activities do not infringe any valid claim of  
22 the ‘504 patent. All infringement of the ‘504 patent following the Defendants’ knowledge  
23 of the ‘504 patent is willful and LMS is entitled to treble damages and attorneys’ fees and  
24 costs incurred in this action under 35 U.S.C. §§ 284 and 285.

25           31. On information and belief, Defendants’ will continue infringing,  
26 notwithstanding their actual knowledge of the ‘504 patent and while lacking an  
27 objectively reasonable good faith basis to believe that its activities do not infringe any  
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1 valid claim of the ‘504 patent. Defendants’ future acts of infringement will constitute  
2 continuing willful infringement of the ‘504 patent.

3 **SECOND CAUSE OF ACTION – INFRINGEMENT OF ‘441 PATENT**

4 32. Plaintiff hereby repeats and re-alleges the allegations contained in paragraphs  
5 1 to 31, as if fully set forth herein.

6 33. On April 13, 1999, U.S. Patent No. 5,894,441 entitled “Semiconductor  
7 Memory Device With Redundancy Circuit,” a copy of which is attached hereto as Exhibit  
8 C, was duly and legally issued to the inventor, Shigeyuki Nakazawa. The ‘441 patent  
9 issued from U.S. patent application Serial Number 09/050,354 filed March 31, 1998 and  
10 discloses novel memory devices with structures designed to identify a defective region on  
11 the memory device such that a redundant region may be used in lieu of the defective  
12 region. The inventor assigned all right, title, and interest in the ‘441 patent to NEC  
13 Corporation (hereinafter “NEC”). NEC’s right, title, and interest in the ‘441 patent was  
14 subsequently assigned to NEC Electronics Corporation, which further assigned such right,  
15 title, and interest to Renesas Electronics Corp. (hereinafter “Renesas”). Renesas assigned  
16 all right, title, and interest in the ‘441 patent to Acacia Research Group LLC (“ARG”).  
17 The assignment to ARG was made subject only to certain prior non-exclusive license  
18 agreements and a limited non-exclusive and non-transferable limited license to Renesas.  
19 Neither the prior licensees nor Renesas possesses any right to sue for or collect past,  
20 present and future damages or to seek and obtain injunctive or any other relief for  
21 infringement of the ‘441 patent.

22 34. Prior to the commencement of this action, ARG assigned all right, title, and  
23 interest in the ‘441 patent to LMS, its wholly owned designated affiliate, including all of  
24 ARG’s rights, obligations, interests and liabilities under the assignment agreement with  
25 Renesas. LMS assumed all such rights, obligations, interests and liabilities of ARG under  
26 such assignment agreement. LMS thus possesses the right to sue for or collect past,  
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1 present and future damages or to seek and obtain injunctive or any other relief for  
2 infringement of the '441 patent.

3 35. MTI, directly and/or through its subsidiaries, affiliates, agents, and/or  
4 business partners, has in the past and continues to directly infringe the '441 patent  
5 pursuant to 35 U.S.C. § 271(a) by making, having made, using, selling, offering to sell  
6 and/or importing memory devices that embody the inventions claimed in the '441 patent,  
7 within the United States and within this District. MTI has been and is engaged in one or  
8 more of these direct infringing activities related to memory devices that incorporate  
9 DRAM technology, including at least its DDR2, DDR3, DDR4, LPDDR, LPDDR,  
10 LPDDR2, LPDDR3, LPDDR4 GDDR5, and RLDRAM chips (hereinafter "the '441  
11 DRAM Chips") and any other chip having substantially similar structures for managing  
12 defective regions of the chip.

13 36. A non-exhaustive list of part numbers associated with the '441 DRAM Chips  
14 appears in a part catalog provided on MTI's website (<http://www.micron.com/>), which list  
15 is attached hereto as Exhibit D.

16 37. Defendants, directly and/or through their subsidiaries, affiliates, agents,  
17 and/or business partners, have been and are now indirectly infringing the '441 patent,  
18 including at least claims 6-12 and 14-15 pursuant to 35 U.S.C. § 271(b) by actively  
19 inducing acts of direct infringement performed by others. MTI has had previous actual  
20 notice of the '441 patent prior to the filing of this complaint at least through its efforts to  
21 patent related technologies. U.S. Patent No. 6,269,035 ("the '035 patent") issued to MTI  
22 on July 31, 2001. The '441 patent is listed on the face of the '035 patent as a reference  
23 cited against the '035 patent. Accordingly, MTI has had actual notice of the '441 patent  
24 since at least July 31, 2001.

25 38. MTI also had actual notice of the '441 patent and the infringement alleged  
26 herein at least upon the filing of the Original Complaint. Moreover, upon information and  
27 belief, the Defendants have numerous lawyers and other active agents who regularly  
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1 review patents and published patent applications relevant to technology in the fields of the  
2 Patents-in-Suit, specifically including patents directed to semiconductor memory devices  
3 issued to competitors such as NEC, the original assignee of the '441 patent. Upon  
4 information and belief, the Defendants collectively have been issued over 25,055 patents,  
5 including 314 patents prosecuted in the USPTO in the same classifications as the '441  
6 patent, giving the Defendants intimate knowledge of the art in fields relevant to this civil  
7 action. The timing, circumstances and extent of the Defendants obtaining actual  
8 knowledge of the '441 patent prior to the commencement of this lawsuit will be  
9 confirmed during discovery.

10 39. Upon gaining knowledge of the '441 patent, it was, or became, apparent to  
11 the Defendants that the manufacture, sale, importing, offer for sale, and use of their '441  
12 DRAM Chips results in infringement of the '441 patent. Upon information and belief, the  
13 Defendants have continued and will continue to engage in activities constituting  
14 inducement of infringement, notwithstanding their knowledge, or willful blindness  
15 thereto, that the activities they induce result in infringement of the '441 patent.

16 40. The '441 DRAM Chips are intended for integration into products known to  
17 be sold widely in the United States. The Defendants make integrated circuit devices that  
18 embody the inventions claimed in the '441 patent, which devices infringe when they are  
19 imported into, or sold, used, or offered for sale in the United States. The Defendants  
20 indirectly infringe by inducing customers and other downstream parties to import products  
21 that incorporate integrated circuit devices embodying inventions claimed in the '441  
22 patent, or to sell or use such products, or offer them for sale, in the United States. For  
23 example, the Defendants' customers, OEMs, importers, resellers, and others who purchase  
24 or otherwise obtain devices manufactured at the Defendants' overseas facilities, or  
25 supplied under agreement with partner foundries, to import devices embodying inventions  
26 recited in claims 6-12 and 1-2 of the '441 patent, or to sell or use such devices, or offer  
27 them for sale in the United States without authority.

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1           41. Several of the '441 DRAM Chips are manufactured for use in several third-  
2 party products that have been imported, sold, and offered for sale in the United States. On  
3 information and belief, the '441 DRAM Chips are designed for use in these third-party  
4 products, and therefore the Defendants have the specific knowledge and intent that its  
5 infringing devices are destined for use in products sold, offered for sale, and/or imported  
6 into the United States. On information and belief, such third-party products include:

- 7           • Asus Aspire S3-951-6828 with Micron C400 256GB mSATA SSD
- 8           • Dell's XPS13 Laptop with Micron J8416E6MB-GNL-F 8 GB (8 x 1 GB)  
9           DDR3L-RS 1600 MHz dual-channel RAM
- 10          • Dell's Alienware 17 Laptop with Micron 4GB PC3L-12800 RAM
- 11          • Dell's Precision T3610 Workstation with Micron P320h PCIe SSD drive
- 12          • Dell's Precision T5610 Workstation with Micron P320h PCIe SSD drive
- 13          • Dell's Precision T5810 Workstation with Micron P320h PCIe SSD drive
- 14          • Dell's Precision T7610 Workstation with Micron P320h PCIe SSD drive
- 15          • Dell's Precision T7810 Workstation with Micron P420m PCIe SSD drives
- 16          • Dell's Precision Rack 7810 Workstation with Micron P420m PCIe SSD  
17          drives
- 18          • Dell's Precision Rack 7910 Workstation with Micron P420m PCIe SSD drive
- 19          • Dell's PowerEdge T620 Blade Server with Micron P320h PCIe SSD drive
- 20          • Dell's PowerEdge M620 Blade Server with Micron P320h PCIe SSD drive
- 21          • Dell's PowerEdge M820 Blade Server with Micron P320h PCIe SSD drive
- 22          • Dell's PowerEdge R620 Rack Server with Micron P320h PCIe SSD drive
- 23          • Dell's PowerEdge R720 Rack Server with Micron P320h PCIe SSD drive
- 24          • Dell's PowerEdge R820 Rack Server with Micron P320h PCIe SSD drive
- 25          • Dell's Inspiron 14 7437 Laptop with Micron C400 256GB mSATA SSD
- 26          • HP's X820 blade server
- 27          • HP's BL870c PC server

- 1 • HP's Z420 Workstation with Micron C400 256GB mSATA SSD
- 2 • HP's Z620 Workstation with Micron C400 256GB mSATA SSD
- 3 • HP's Z820 Workstation with Micron RAM
- 4 • Lenovo's Ideapad Yoga 13 with Micron C400 128GB mSATA SSD
- 5 • Lenovo's System x3550 M5 with Micron M500DC Enterprise Value SATA
- 6 SSD
- 7 • Lenovo's ThinkPad T430s with Micron C400 256GB mSATA SSD
- 8 • OCZ's ARC 100 Solid State Drive digital data storage devices

9 42. On information and belief, the Defendants have taken affirmative steps to  
10 encourage or assist the identified third parties' importation of Defendants' infringing  
11 semiconductor memory devices into the United States.

12 43. The Defendants encourage customers, resellers, OEMs, or others to import  
13 into the United States and sell and use in the United States the '441 DRAM Chips  
14 embodying inventions claimed in the '441 patent with knowledge and the specific intent  
15 to cause the acts of direct infringement performed by these third parties. On information  
16 and belief, after the Defendants obtained knowledge of the '441 patent, the '441 DRAM  
17 Chips have been and will continue to be imported into the United States and sold in large  
18 volumes by themselves and by others, such as customers, distributors and resellers. Upon  
19 information and belief, the Defendants work closely with their customers in the processes  
20 of selecting products appropriate for their customers' specific applications and developing  
21 new products. The Defendants are aware that the '441 DRAM Chips are integral  
22 components of the products incorporating them, that the infringing integrated circuits are  
23 built into the products and cannot be removed or disabled by a purchaser of the products  
24 containing the infringing integrated circuit devices, such that the Defendants' customers  
25 will infringe claims 6-12 and 14-15 of the '441 patent by incorporating such integrated  
26 circuit devices in other products, and that subsequent importation, sale, and use of such  
27 products in the United States would be a direct infringement of the '441 patent. Therefore,  
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1 the Defendants are aware that their customers will infringe one or more claims of the ‘441  
2 patent by importing, selling, offering for sale, and/or using the products supplied by the  
3 Defendants.

4 44. The Defendants directly benefit from and actively and knowingly encourage  
5 customers’, resellers’, and users’ importation of these products into the United States and  
6 sale and use within the United States. The Defendants actively encourage customers,  
7 resellers, OEMs, and downstream users to import, use, and sell in the United States the  
8 ‘441 DRAM Chips that they manufacture and supply, including through advertising,  
9 marketing, and sales activities directed at United States sales. On information and belief,  
10 the Defendants are aware of the size and importance of the United States market for  
11 customers of their products, and also distribute or supply these products intended for  
12 importation, use, offer for sale, and sale in the United States. The Defendants routinely  
13 market their infringing integrated circuit products to third parties for inclusion in products  
14 that are sold to customers in the United States. MTI provides a direct sales outlet for these  
15 products in the United States. The Defendants’ marketing efforts show that they have  
16 specifically intended to and have induced direct infringement in the United States.

17 45. The Defendants also provide OEMs, manufacturers, importers, resellers,  
18 customers, and end users instructions, data, simulation tools, user guides, technical  
19 resources, and technical specifications on how to incorporate the ‘441 DRAM Chips into  
20 electronics products that are made, used, sold, offered for sale in and/or imported into the  
21 United States. When OEMs, manufacturers, importers, resellers, customers, and end users  
22 follow such instructions, data, simulation tools, user guides, technical resources, and  
23 technical specifications and embed the products in end products and make, use, offer to  
24 sell, sell, or import into the United States, they directly infringe claims 6-12 and 14-15 of  
25 the ‘441 patent. The Defendants know that by providing such instructions, data,  
26 simulation tools, user guides, technical resources, and technical specifications, OEMs,  
27 manufacturers, importers, resellers, customers, and end users follow them, and therefore

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1 directly infringe one or more claims of the ‘441 patent. On information and belief, MTI  
2 provides technical support for the Defendants’ ‘441 DRAM Chips in the United States.  
3 The Defendants thus know that their actions actively induce infringement.

4 46. The Defendants have engaged and will continue to engage in additional  
5 activities to specifically target the United States market for the ‘441 DRAM Chips and  
6 actively induce manufacturers, importers, resellers, customers, and end users to directly  
7 infringe at least claims 6-12 and 14-15 of the ‘441 patent in the United States. For  
8 example, the Defendants have showcased their semiconductor devices and process  
9 technologies at various industry events, such as CES, and through written materials  
10 distributed in the United States, and through the [www.micron.com](http://www.micron.com) website in an effort to  
11 encourage customers to include the infringing technology in their products. Upon  
12 information and belief, these events are attended by the direct infringers mentioned above  
13 (*i.e.*, Dell, HP, Lenovo, OCZ, and Acer) and generally by companies that make, use, offer  
14 to sell, sell, or import in the United States products that use semiconductor memory  
15 devices such as those made by the Defendants. The Defendants’ website also enables  
16 customers to locate United States-based distributors of Defendants’ products, such as  
17 Arrow Electronics, Inc., Avnet, Digi-Key, Edge Electronics, Phoenix Electronics, and  
18 WPG Americas. The Defendants derive significant revenue by selling the ‘441 DRAM  
19 Chips to third parties who directly infringe the ‘441 patent in the United States.

20 47. The Defendants derive significant revenue by selling the ‘441 DRAM Chips  
21 to third parties who directly infringe at least claims 6-12 and 14-15 of the ‘441 patent in  
22 the United States. The Defendants’ extensive sales and marketing efforts, sales volume,  
23 and partnerships all evidence their intent to induce companies to infringe at least claims 6-  
24 12 and 14-15 of the ‘441 patent by, using, offering to sell, selling, or importing products  
25 that incorporate the ‘441 DRAM Chips, in the United States. The Defendants have had  
26 specific intent to induce infringement or have been willfully blind to the direct  
27 infringement they are inducing.

1 48. Defendants’ direct and indirect infringement of the ‘441 patent has injured  
2 LMS. LMS is entitled to recover damages adequate to compensate for such infringement  
3 pursuant to 35 U.S.C. § 284. Unless they cease their infringing activities, the Defendants  
4 will continue to injure LMS by infringing the ‘441 patent.

5 49. On information and belief, the Defendants acted egregiously and with willful  
6 misconduct in that their actions constituted direct or indirect infringement of a valid  
7 patent, and this was either known or so obvious that the Defendants should have known  
8 about it. The Defendants continue to infringe the ‘441 patent by making, using, selling,  
9 offering for sale, and importing in the United States the ‘441 DRAM Chips, and to induce  
10 the direct infringement of others performing these acts, or they have acted at least in  
11 reckless disregard of LMS’s patent rights. On information and belief, the Defendants will  
12 continue their infringement notwithstanding actual knowledge of the ‘441 patent and  
13 without a good faith basis to believe that their activities do not infringe any valid claim of  
14 the ‘441 patent. All infringement of the ‘441 patent following the Defendants’ knowledge  
15 of the ‘441 patent is willful and LMS is entitled to treble damages and attorneys’ fees and  
16 costs incurred in this action under 35 U.S.C. §§ 284 and 285.

17 50. On information and belief, Defendants will continue infringing,  
18 notwithstanding their actual knowledge of the ‘441 patent and while lacking an  
19 objectively reasonable good faith basis to believe that its activities do not infringe any  
20 valid claim of the ‘441 patent. Defendants’ future acts of infringement will constitute  
21 continuing willful infringement of the ‘441 patent.

22 **THIRD CAUSE OF ACTION – INFRINGEMENT OF ‘181 PATENT**

23 51. Plaintiff hereby repeats and re-alleges the allegations contained in paragraphs  
24 1 to 50, as if fully set forth herein.

25 52. On May 15, 2001, U.S. Patent No. 6,233,181 (“the ‘181 patent”), entitled  
26 “Semiconductor Memory Device With Improved Flexible Redundancy Scheme” a copy  
27 of which is attached hereto as Exhibit E, was duly and legally issued to the inventor,  
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1 Hideto Hidaka. The '181 patent issued from U.S. patent application Serial Number  
2 09/251,352 filed February 17, 1999 and discloses novel memory devices with redundant  
3 rows of memory cells, available for use among a particular group of memory sub-arrays.  
4 The inventor assigned all right, title, and interest in the '181 patent to Mitsubishi Denki  
5 Kabushiki Kaisha (hereinafter "Mitsubishi"). Mitsubishi's right, title, and interest in the  
6 '181 patent was subsequently assigned to Renesas Electronics Corp. (hereinafter  
7 "Renesas"). Renesas assigned all right, title, and interest in the '181 patent to Acacia  
8 Research Group LLC ("ARG"). The assignment to ARG was made subject only to  
9 certain prior non-exclusive license agreements and a limited non-exclusive and non-  
10 transferable limited license to Renesas. Neither the prior licensees nor Renesas possesses  
11 any right to sue for or collect past, present and future damages or to seek and obtain  
12 injunctive or any other relief for infringement of the '181 patent.

13 53. Prior to the commencement of this action, ARG assigned all right, title, and  
14 interest in the '181 patent to LMS, its wholly owned designated affiliate, including all of  
15 ARG's rights, obligations, interests and liabilities under the assignment agreement with  
16 Renesas. LMS assumed all such rights, obligations, interests and liabilities of ARG under  
17 such assignment agreement. LMS thus possesses the right to sue for or collect past,  
18 present and future damages or to seek and obtain injunctive or any other relief for  
19 infringement of the '181 patent.

20 54. Defendant Micron, directly and/or through its subsidiaries, affiliates, agents,  
21 and/or business partners, has in the past and continues to directly infringe the '181 patent  
22 pursuant to 35 U.S.C. § 271(a) by making, having made, using, selling, offering to sell  
23 and/or importing memory devices that embody the invention claimed in the '181 patent,  
24 within the United States and within this District. Defendant Micron has been and is  
25 engaged in one or more of these direct infringing activities related to memory devices that  
26 incorporate DRAM technology, including at least its DDR2, DDR3, DDR4, LPDDR,  
27 LPDDR2, LPDDR3, LPDDR4 GDDR5, and RLDRAM chips (hereinafter "the  
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1 ‘181 DRAM Chips”) and any other chip having substantially similar structures providing  
2 redundant memory cells.

3 55. A non-exhaustive list of part numbers associated with the ‘181 DRAM Chips  
4 appears in a part catalog provided on Defendant Micron’s website  
5 (<http://www.micron.com/>), which list is attached hereto as Exhibit F.

6 56. Defendants, directly and/or through their subsidiaries, affiliates, agents,  
7 and/or business partners, have been and are now indirectly infringing the ‘181 patent,  
8 including at least claim 3 pursuant to 35 U.S.C. § 271(b) by actively inducing acts of  
9 direct infringement performed by others. MTI has had previous actual notice of the ‘181  
10 patent prior to the filing of this complaint at least through its efforts to patent related  
11 technologies U.S. Patent No. 7,145,816 (“the ‘816 patent”) issued to MTI on December 5,  
12 2006. U.S. Patent No. 7,269,083 (“the ‘083 patent”) issued to MTI on September 11,  
13 2007. U.S. Patent No. 7,372,751 (“the ‘751 patent”) issued to MTI on May 13, 2008. U.S.  
14 Patent No. 7,881,134 (“the ‘134 patent”) issued to MTI on February 1, 2011. U.S. Patent  
15 No. 8,295,109 (“the ‘109 patent”) issued to MTI on October 23, 2012. The ‘181 patent is  
16 identified on the face of each of the ‘816, ‘083, ‘751, ‘134, and the ‘109 patents as a  
17 reference cited against each of those patents. Accordingly, MTI has had actual notice of  
18 the ‘181 patent since at least December 5, 2006 and received additional notice of the ‘181  
19 patent on numerous subsequent occasions.

20 57. MTI also had actual notice of the ‘181 patent and the infringement alleged  
21 herein at least upon the filing of the First Amended Complaint. Moreover, upon  
22 information and belief, the Defendants have numerous lawyers and other active agents  
23 who regularly review patents and published patent applications relevant to technology in  
24 the fields of the Patents-in-Suit, specifically including patents directed to semiconductor  
25 memory devices issued to competitors such as Mitsubishi and Renesas, the original  
26 assignees of the ‘181 patent. Upon information and belief, the Defendants collectively  
27 have been issued over 25,055 patents, including 314 patents prosecuted in the USPTO in  
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1 the same classifications as the '181 patent, giving the Defendants intimate knowledge of  
2 the art in fields relevant to this civil action. The timing, circumstances and extent of the  
3 Defendants obtaining actual knowledge of the '181 patent prior to the commencement of  
4 this lawsuit will be confirmed during discovery.

5 58. Upon gaining knowledge of the '181 patent, it was, or became, apparent to  
6 the Defendants that the manufacture, sale, importing, offer for sale, and use of their '181  
7 DRAM Chips results in infringement of the '181 patent. Upon information and belief, the  
8 Defendants have continued and will continue to engage in activities constituting  
9 inducement of infringement, notwithstanding their knowledge, or willful blindness  
10 thereto, that the activities they induce result in infringement of the '181 patent.

11 59. The '181 DRAM Chips are intended for integration into products known to  
12 be sold widely in the United States. The Defendants make integrated circuit devices that  
13 embody the inventions claimed in the '181 patent, which devices infringe when they are  
14 imported into, or sold, used, or offered for sale in the United States. The Defendants  
15 indirectly infringe by inducing customers and other downstream parties to import products  
16 that incorporate integrated circuit devices embodying inventions claimed in the '181  
17 patent, or to sell or use such products, or offer them for sale, in the United States. For  
18 example, the Defendants' customers, OEMs, importers, resellers, and others who purchase  
19 or otherwise obtain devices manufactured at the Defendants' overseas facilities, or  
20 supplied under agreement with partner foundries, to import devices embodying inventions  
21 recited in claim 3 of the '181 patent, or to sell or use such devices, or offer them for sale  
22 in the United States without authority.

23 60. Several of the '181 DRAM Chips are manufactured for use in several third-  
24 party products that have been imported, sold, and offered for sale in the United States. On  
25 information and belief, the '181 DRAM Chips are designed for use in these third-party  
26 products, and therefore the Defendants have the specific knowledge and intent that its  
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1 infringing devices are destined for use in products sold, offered for sale, and/or imported  
2 into the United States. On information and belief, such third-party products include:

- 3 • Asus Aspire S3-951-6828 with Micron C400 256GB mSATA SSD
- 4 • Dell's XPS13 Laptop with Micron J8416E6MB-GNL-F 8 GB (8 x 1 GB)  
5 DDR3L-RS 1600 MHz dual-channel RAM
- 6 • Dell's Alienware 17 Laptop with Micron 4GB PC3L-12800 RAM
- 7 • Dell's Precision T3610 Workstation with Micron P320h PCIe SSD drive
- 8 • Dell's Precision T5610 Workstation with Micron P320h PCIe SSD drive
- 9 • Dell's Precision T5810 Workstation with Micron P320h PCIe SSD drive
- 10 • Dell's Precision T7610 Workstation with Micron P320h PCIe SSD drive
- 11 • Dell's Precision T7810 Workstation with Micron P420m PCIe SSD drives
- 12 • Dell's Precision Rack 7810 Workstation with Micron P420m PCIe SSD  
13 drives
- 14 • Dell's Precision Rack 7910 Workstation with Micron P420m PCIe SSD drive
- 15 • Dell's PowerEdge T620 Blade Server with Micron P320h PCIe SSD drive
- 16 • Dell's PowerEdge M620 Blade Server with Micron P320h PCIe SSD drive
- 17 • Dell's PowerEdge M820 Blade Server with Micron P320h PCIe SSD drive
- 18 • Dell's PowerEdge R620 Rack Server with Micron P320h PCIe SSD drive
- 19 • Dell's PowerEdge R720 Rack Server with Micron P320h PCIe SSD drive
- 20 • Dell's PowerEdge R820 Rack Server with Micron P320h PCIe SSD drive
- 21 • Dell's Inspiron 14 7437 Laptop with Micron C400 256GB mSATA SSD
- 22 • HP's X820 blade server
- 23 • HP's BL870c PC server
- 24 • HP's Z420 Workstation with Micron C400 256GB mSATA SSD
- 25 • HP's Z620 Workstation with Micron C400 256GB mSATA SSD
- 26 • HP's Z820 Workstation with Micron RAM
- 27 • Lenovo's Ideapad Yoga 13 with Micron C400 128GB mSATA SSD

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- 1 • Lenovo's System x3550 M5 with Micron M500DC Enterprise Value SATA
- 2 SSD
- 3 • Lenovo's ThinkPad T430s with Micron C400 256GB mSATA SSD
- 4 • OCZ's ARC 100 Solid State Drive digital data storage devices

5 61. On information and belief, the Defendants have taken affirmative steps to  
6 encourage or assist the identified third parties' importation of Defendants' infringing  
7 semiconductor memory devices into the United States.

8 62. The Defendants encourage customers, resellers, OEMs, or others to import  
9 into the United States and sell and use in the United States the '181 DRAM Chips  
10 embodying inventions claimed in the '181 patent with knowledge and the specific intent  
11 to cause the acts of direct infringement performed by these third parties. On information  
12 and belief, after the Defendants obtained knowledge of the '181 patent, the '181 DRAM  
13 Chips have been and will continue to be imported into the United States and sold in large  
14 volumes by themselves and by others, such as customers, distributors and resellers. Upon  
15 information and belief, the Defendants work closely with their customers in the processes  
16 of selecting products appropriate for their customers' specific applications and developing  
17 new products. The Defendants are aware that the '181 DRAM Chips are integral  
18 components of the products incorporating them, that the infringing integrated circuits are  
19 built into the products and cannot be removed or disabled by a purchaser of the products  
20 containing the infringing integrated circuit devices, such that the Defendants' customers  
21 will infringe claim 3 of the '181 patent by incorporating such integrated circuit devices in  
22 other products, and that subsequent importation, sale, and use of such products in the  
23 United States would be a direct infringement of the '181 patent. Therefore, the Defendants  
24 are aware that their customers will infringe one or more claims of the '181 patent by  
25 importing, selling, offering for sale, and/or using the products supplied by the Defendants.

26 63. The Defendants directly benefit from and actively and knowingly encourage  
27 customers', resellers', and users' importation of these products into the United States and  
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1 sale and use within the United States. The Defendants actively encourage customers,  
2 resellers, OEMs, and downstream users to import, use, and sell in the United States the  
3 ‘181 DRAM Chips that they manufacture and supply, including through advertising,  
4 marketing, and sales activities directed at United States sales. On information and belief,  
5 the Defendants are aware of the size and importance of the United States market for  
6 customers of their products, and also distribute or supply these products intended for  
7 importation, use, offer for sale, and sale in the United States. The Defendants routinely  
8 market their infringing integrated circuit products to third parties for inclusion in products  
9 that are sold to customers in the United States. MTI provides a direct sales outlet for these  
10 products in the United States. The Defendants’ marketing efforts show that they have  
11 specifically intended to and have induced direct infringement in the United States.

12 64. The Defendants also provide OEMs, manufacturers, importers, resellers,  
13 customers, and end users instructions, data, simulation tools, user guides, technical  
14 resources, and technical specifications on how to incorporate the ‘181 DRAM Chips into  
15 electronics products that are made, used, sold, offered for sale in and/or imported into the  
16 United States. When OEMs, manufacturers, importers, resellers, customers, and end users  
17 follow such instructions, data, simulation tools, user guides, technical resources, and  
18 technical specifications and embed the products in end products and make, use, offer to  
19 sell, sell, or import into the United States, they directly infringe claim 3 of the ‘181 patent.  
20 The Defendants know that by providing such instructions, data, simulation tools, user  
21 guides, technical resources, and technical specifications, OEMs, manufacturers, importers,  
22 resellers, customers, and end users follow them, and therefore directly infringe one or  
23 more claims of the ‘181 patent. On information and belief, MTI provides technical  
24 support for the Defendants’ ‘181 DRAM Chips in the United States. The Defendants thus  
25 know that their actions actively induce infringement.

26 65. The Defendants have engaged and will continue to engage in additional  
27 activities to specifically target the United States market for the ‘181 DRAM Chips and  
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1 actively induce manufacturers, importers, resellers, customers, and end users to directly  
2 infringe at least claim 3 of the ‘181 patent in the United States. For example, the  
3 Defendants have showcased their semiconductor devices and process technologies at  
4 various industry events, such as CES, and through written materials distributed in the  
5 United States, and through the www.micron.com website in an effort to encourage  
6 customers to include the infringing technology in their products. Upon information and  
7 belief, these events are attended by the direct infringers mentioned above (*i.e.*, Dell, HP,  
8 Lenovo, OCZ, and Acer) and generally by companies that make, use, offer to sell, sell, or  
9 import in the United States products that use semiconductor memory devices such as  
10 those made by the Defendants. The Defendants’ website also enables customers to locate  
11 United States-based distributors of Defendants’ products, such as Arrow Electronics, Inc.,  
12 Avnet, Digi-Key, Edge Electronics, Phoenix Electronics, and WPG Americas. The  
13 Defendants derive significant revenue by selling the ‘181 DRAM Chips to third parties  
14 who directly infringe the ‘181 patent in the United States.

15         66. The Defendants derive significant revenue by selling the ‘181 DRAM Chips  
16 to third parties who directly infringe at least claim 3 of the ‘181 patent in the United  
17 States. The Defendants’ extensive sales and marketing efforts, sales volume, and  
18 partnerships all evidence their intent to induce companies to infringe at least claim 3 of  
19 the ‘181 patent by, using, offering to sell, selling, or importing products that incorporate  
20 the ‘181 DRAM CHIPS, in the United States. The Defendants have had specific intent to  
21 induce infringement or have been willfully blind to the direct infringement they are  
22 inducing.

23         67. Defendants’ direct and indirect infringement of the ‘181 patent has injured  
24 LMS. LMS is entitled to recover damages adequate to compensate for such infringement  
25 pursuant to 35 U.S.C. § 284. Unless they cease their infringing activities, the Defendants  
26 will continue to injure LMS by infringing the ‘181 patent.

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1           68. On information and belief, the Defendants acted egregiously and with willful  
2 misconduct in that their actions constituted direct or indirect infringement of a valid  
3 patent, and this was either known or so obvious that the Defendants should have known  
4 about it. The Defendants continue to infringe the ‘181 patent by making, using, selling,  
5 offering for sale, and importing in the United States the ‘181 DRAM Chips, and to induce  
6 the direct infringement of others performing these acts, or they have acted at least in  
7 reckless disregard of LMS’s patent rights. On information and belief, the Defendants will  
8 continue their infringement notwithstanding actual knowledge of the ‘181 patent and  
9 without a good faith basis to believe that their activities do not infringe any valid claim of  
10 the ‘181 patent. All infringement of the ‘181 patent following the Defendants’ knowledge  
11 of the ‘181 patent is willful and LMS is entitled to treble damages and attorneys’ fees and  
12 costs incurred in this action under 35 U.S.C. §§ 284 and 285.

13           69. On information and belief, Defendants’ will continue infringing,  
14 notwithstanding their actual knowledge of the ‘181 patent and while lacking an  
15 objectively reasonable good faith basis to believe that its activities do not infringe any  
16 valid claim of the ‘181 patent. Defendants’ future acts of infringement will constitute  
17 continuing willful infringement of the ‘181 patent.

18                           **FOURTH CAUSE OF ACTION – INFRINGEMENT OF ‘296 PATENT**

19           70. Plaintiff hereby repeats and re-alleges the allegations contained in paragraphs  
20 1 to 69 as if fully set forth herein.

21           71. On February 24, 2004, U.S. Patent No. 6,697,296 (“the ‘296 patent”),  
22 entitled “Clock Synchronous Semiconductor Memory Device” a copy of which is attached  
23 hereto as Exhibit G, was duly and legally issued to the inventors, Junko Matsumoto, et al.  
24 The ‘296 patent issued from U.S. patent application Serial Number 10/140,937 filed May  
25 9, 2002 and discloses novel memory devices with input/output buffers that can be  
26 disabled to reduce the power consumption of the memory device when it is in a low-  
27 power state. The inventors assigned all right, title, and interest in the ‘296 patent to  
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1 Mitsubishi Denki Kabushiki Kaisha (hereinafter “Mitsubishi”). Mitsubishi’s right, title,  
2 and interest in the ‘296 patent was subsequently assigned to Renesas Technology Group,  
3 which further assigned such right, title, and interest to Renesas Electronics Corp.  
4 (hereinafter “Renesas”). Renesas assigned all right, title, and interest in the ‘296 patent to  
5 Acacia Research Group LLC (“ARG”). The assignment to ARG was made subject only  
6 to certain prior non-exclusive license agreements and a limited non-exclusive and non-  
7 transferable limited license to Renesas. Neither the prior licensees nor Renesas possesses  
8 any right to sue for or collect past, present and future damages or to seek and obtain  
9 injunctive or any other relief for infringement of the ‘296 patent.

10 72. Prior to the commencement of this action, ARG assigned all right, title, and  
11 interest in the ‘296 patent to LMS, its wholly owned designated affiliate, including all of  
12 ARG’s rights, obligations, interests and liabilities under the assignment agreement with  
13 Renesas. LMS assumed all such rights, obligations, interests and liabilities of ARG under  
14 such assignment agreement. LMS thus possesses the right to sue for or collect past,  
15 present and future damages or to seek and obtain injunctive or any other relief for  
16 infringement of the ‘296 patent.

17 73. MTI, directly and/or through its subsidiaries, affiliates, agents, and/or  
18 business partners, has in the past and continues to directly infringe the ‘296 patent  
19 pursuant to 35 U.S.C. § 271(a) by making, having made, using, selling, offering to sell  
20 and/or importing memory devices that embody the invention claimed in the ‘296 patent,  
21 within the United States and within this District. MTI has been and is engaged in one or  
22 more of these direct infringing activities related to memory devices that incorporate  
23 DRAM technology, including at least its DDR3, DDR4, LPDDR3, and LRPDDR4 chips  
24 (hereinafter “the ‘296 DRAM Chips”) and any other chip having substantially similar  
25 capability to disable input/output buffers in a low power state.

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1 74. A non-exhaustive list of part numbers associated with the ‘296 DRAM Chips  
2 appears in a part catalog provided on MTI’s website (<http://www.micron.com/>), which list  
3 is attached hereto as Exhibit H.

4 75. Defendants, directly and/or through their subsidiaries, affiliates, agents,  
5 and/or business partners, have been and are now indirectly infringing the ‘296 patent,  
6 including at least claim 3 pursuant to 35 U.S.C. § 271(b) by actively inducing acts of  
7 direct infringement performed by others. MTI has had previous actual notice of the ‘296  
8 patent prior to the filing of this complaint at least through its efforts to patent related  
9 technologies U.S. Patent No. 8,824,235 (“the ‘235 patent”) issued to MTI on September 2,  
10 2014. The ‘296 patent is identified on the face of the ‘235 patent as a reference cited  
11 against the ‘235 patent. Accordingly, MTI has had actual notice of the ‘296 patent since  
12 at least September 2, 2014.

13 76. MTI also had actual notice of the ‘296 patent and the infringement alleged  
14 herein at least upon the filing of the First Amended Complaint. Moreover, upon  
15 information and belief, the Defendants have numerous lawyers and other active agents  
16 who regularly review patents and published patent applications relevant to technology in  
17 the fields of the Patents-in-Suit, specifically including patents directed to semiconductor  
18 memory devices issued to competitors such as Mitsubishi and Renesas, the original  
19 assignees of the ‘296 patent. Upon information and belief, the Defendants collectively  
20 have been issued over 25,055 patents, including 210 patents prosecuted in the USPTO in  
21 the same classifications as the ‘296 patent, giving the Defendants intimate knowledge of  
22 the art in fields relevant to this civil action. The timing, circumstances and extent of the  
23 Defendants obtaining actual knowledge of the ‘296 patent prior to the commencement of  
24 this lawsuit will be confirmed during discovery.

25 77. Upon gaining knowledge of the ‘296 patent, it was, or became, apparent to  
26 the Defendants that the manufacture, sale, importing, offer for sale, and use of their ‘296  
27 DRAM Chips results in infringement of the ‘296 patent. Upon information and belief, the  
28

1 Defendants have continued and will continue to engage in activities constituting  
2 inducement of infringement, notwithstanding their knowledge, or willful blindness  
3 thereto, that the activities they induce result in infringement of the '296 patent.

4 78. The '296 DRAM Chips are intended for integration into products known to  
5 be sold widely in the United States. The Defendants make integrated circuit devices that  
6 embody the inventions claimed in the '296 patent, which devices infringe when they are  
7 imported into, or sold, used, or offered for sale in the United States. The Defendants  
8 indirectly infringe by inducing customers and other downstream parties to import products  
9 that incorporate integrated circuit devices embodying inventions claimed in the '296  
10 patent, or to sell or use such products, or offer them for sale, in the United States. For  
11 example, the Defendants' customers, OEMs, importers, resellers, and others who purchase  
12 or otherwise obtain devices manufactured at the Defendants' overseas facilities, or  
13 supplied under agreement with partner foundries, to import devices embodying inventions  
14 recited in claims 13-15 of the '296 patent, or to sell or use such devices, or offer them for  
15 sale in the United States without authority.

16 79. Several of the '296 DRAM Chips are manufactured for use in several third-  
17 party products that have been imported, sold, and offered for sale in the United States. On  
18 information and belief, the '296 DRAM Chips are designed for use in these third-party  
19 products, and therefore the Defendants have the specific knowledge and intent that its  
20 infringing devices are destined for use in products sold, offered for sale, and/or imported  
21 into the United States. On information and belief, such third-party products include:

- 22 • Asus Aspire S3-951-6828 with Micron C400 256GB mSATA SSD
- 23 • Dell's XPS13 Laptop with Micron J8416E6MB-GNL-F 8 GB (8 x 1 GB)  
24 DDR3L-RS 1600 MHz dual-channel RAM
- 25 • Dell's Alienware 17 Laptop with Micron 4GB PC3L-12800 RAM
- 26 • Dell's Precision T3610 Workstation with Micron P320h PCIe SSD drive
- 27 • Dell's Precision T5610 Workstation with Micron P320h PCIe SSD drive

- 1 • Dell's Precision T5810 Workstation with Micron P320h PCIe SSD drive
- 2 • Dell's Precision T7610 Workstation with Micron P320h PCIe SSD drive
- 3 • Dell's Precision T7810 Workstation with Micron P420m PCIe SSD drives
- 4 • Dell's Precision Rack 7810 Workstation with Micron P420m PCIe SSD
- 5 drives
- 6 • Dell's Precision Rack 7910 Workstation with Micron P420m PCIe SSD drive
- 7 • Dell's PowerEdge T620 Blade Server with Micron P320h PCIe SSD drive
- 8 • Dell's PowerEdge M620 Blade Server with Micron P320h PCIe SSD drive
- 9 • Dell's PowerEdge M820 Blade Server with Micron P320h PCIe SSD drive
- 10 • Dell's PowerEdge R620 Rack Server with Micron P320h PCIe SSD drive
- 11 • Dell's PowerEdge R720 Rack Server with Micron P320h PCIe SSD drive
- 12 • Dell's PowerEdge R820 Rack Server with Micron P320h PCIe SSD drive
- 13 • Dell's Inspiron 14 7437 Laptop with Micron C400 256GB mSATA SSD
- 14 • HP's X820 blade server
- 15 • HP's BL870c PC server
- 16 • HP's Z420 Workstation with Micron C400 256GB mSATA SSD
- 17 • HP's Z620 Workstation with Micron C400 256GB mSATA SSD
- 18 • HP's Z820 Workstation with Micron RAM
- 19 • Lenovo's Ideapad Yoga 13 with Micron C400 128GB mSATA SSD
- 20 • Lenovo's System x3550 M5 with Micron M500DC Enterprise Value SATA
- 21 SSD
- 22 • Lenovo's ThinkPad T430s with Micron C400 256GB mSATA SSD
- 23 • OCZ's ARC 100 Solid State Drive digital data storage devices

24 80. On information and belief, the Defendants have taken affirmative steps to  
25 encourage or assist the identified third parties' importation of Defendants' infringing  
26 semiconductor memory devices into the United States.

1           81. The Defendants encourage customers, resellers, OEMs, or others to import  
2 into the United States and sell and use in the United States the '296 DRAM Chips  
3 embodying inventions claimed in the '296 patent with knowledge and the specific intent  
4 to cause the acts of direct infringement performed by these third parties. On information  
5 and belief, after the Defendants obtained knowledge of the '296 patent, the '296 DRAM  
6 Chips have been and will continue to be imported into the United States and sold in large  
7 volumes by themselves and by others, such as customers, distributors and resellers. Upon  
8 information and belief, the Defendants work closely with their customers in the processes  
9 of selecting products appropriate for their customers' specific applications and developing  
10 new products. The Defendants are aware that the '296 DRAM Chips are integral  
11 components of the products incorporating them, that the infringing integrated circuits are  
12 built into the products and cannot be removed or disabled by a purchaser of the products  
13 containing the infringing integrated circuit devices, such that the Defendants' customers  
14 will infringe claims 13-15 of the '296 patent by incorporating such integrated circuit  
15 devices in other products, and that subsequent importation, sale, and use of such products  
16 in the United States would be a direct infringement of the '296 patent. Therefore, the  
17 Defendants are aware that their customers will infringe one or more claims of the '296  
18 patent by importing, selling, offering for sale, and/or using the products supplied by the  
19 Defendants.

20           82. The Defendants directly benefit from and actively and knowingly encourage  
21 customers', resellers', and users' importation of these products into the United States and  
22 sale and use within the United States. The Defendants actively encourage customers,  
23 resellers, OEMs, and downstream users to import, use, and sell in the United States the  
24 '296 DRAM Chips that they manufacture and supply, including through advertising,  
25 marketing, and sales activities directed at United States sales. On information and belief,  
26 the Defendants are aware of the size and importance of the United States market for  
27 customers of their products, and also distribute or supply these products intended for  
28

1 importation, use, offer for sale, and sale in the United States. The Defendants routinely  
2 market their infringing integrated circuit products to third parties for inclusion in products  
3 that are sold to customers in the United States. MTI provides a direct sales outlet for these  
4 products in the United States. The Defendants' marketing efforts show that they have  
5 specifically intended to and have induced direct infringement in the United States.

6 83. The Defendants also provide OEMs, manufacturers, importers, resellers,  
7 customers, and end users instructions, data, simulation tools, user guides, technical  
8 resources, and technical specifications on how to incorporate the '296 DRAM Chips into  
9 electronics products that are made, used, sold, offered for sale in and/or imported into the  
10 United States. When OEMs, manufacturers, importers, resellers, customers, and end users  
11 follow such instructions, data, simulation tools, user guides, technical resources, and  
12 technical specifications and embed the products in end products and make, use, offer to  
13 sell, sell, or import into the United States, they directly infringe claims 13-15 of the '296  
14 patent. The Defendants know that by providing such instructions, data, simulation tools,  
15 user guides, technical resources, and technical specifications, OEMs, manufacturers,  
16 importers, resellers, customers, and end users follow them, and therefore directly infringe  
17 one or more claims of the '296 patent. On information and belief, MTI provides technical  
18 support for the Defendants' '296 DRAM Chips in the United States. The Defendants thus  
19 know that their actions actively induce infringement.

20 84. The Defendants have engaged and will continue to engage in additional  
21 activities to specifically target the United States market for the '296 DRAM Chips and  
22 actively induce manufacturers, importers, resellers, customers, and end users to directly  
23 infringe at least claims 13-15 of the '296 patent in the United States. For example, the  
24 Defendants have showcased their semiconductor devices and process technologies at  
25 various industry events, such as CES, and through written materials distributed in the  
26 United States, and through the [www.micron.com](http://www.micron.com) website in an effort to encourage  
27 customers to include the infringing technology in their products. Upon information and  
28

1 belief, these events are attended by the direct infringers mentioned above (*i.e.*, Dell, HP,  
2 Lenovo, OCZ, and Acer) and generally by companies that make, use, offer to sell, sell, or  
3 import in the United States products that use semiconductor memory devices such as  
4 those made by the Defendants. The Defendants' website also enables customers to locate  
5 United States-based distributors of Defendants' products, such as Arrow Electronics, Inc.,  
6 Avnet, Digi-Key, Edge Electronics, Phoenix Electronics, and WPG Americas. The  
7 Defendants derive significant revenue by selling the '296 DRAM Chips to third parties  
8 who directly infringe the '296 patent in the United States.

9       85. The Defendants derive significant revenue by selling the '296 DRAM Chips  
10 to third parties who directly infringe at least claims 13-15 of the '296 patent in the United  
11 States. The Defendants' extensive sales and marketing efforts, sales volume, and  
12 partnerships all evidence their intent to induce companies to infringe at least claims 13-15  
13 of the '296 patent by, using, offering to sell, selling, or importing products that  
14 incorporate the '296 DRAM Chips, in the United States. The Defendants have had  
15 specific intent to induce infringement or have been willfully blind to the direct  
16 infringement they are inducing.

17       86. Defendants' direct and indirect infringement of the '296 patent has injured  
18 LMS. LMS is entitled to recover damages adequate to compensate for such infringement  
19 pursuant to 35 U.S.C. § 284. Unless they cease their infringing activities, the Defendants  
20 will continue to injure LMS by infringing the '296 patent.

21       87. On information and belief, the Defendants acted egregiously and with willful  
22 misconduct in that their actions constituted direct or indirect infringement of a valid  
23 patent, and this was either known or so obvious that the Defendants should have known  
24 about it. The Defendants continue to infringe the '296 patent by making, using, selling,  
25 offering for sale, and importing in the United States the '296 DRAM Chips, and to induce  
26 the direct infringement of others performing these acts, or they have acted at least in  
27 reckless disregard of LMS's patent rights. On information and belief, the Defendants will  
28

1 continue their infringement notwithstanding actual knowledge of the ‘296 patent and  
2 without a good faith basis to believe that their activities do not infringe any valid claim of  
3 the ‘296 patent. All infringement of the ‘296 patent following the Defendants’ knowledge  
4 of the ‘296 patent is willful and LMS is entitled to treble damages and attorneys’ fees and  
5 costs incurred in this action under 35 U.S.C. §§ 284 and 285.

6 88. On information and belief, Defendants’ will continue infringing,  
7 notwithstanding their actual knowledge of the ‘296 patent and while lacking an  
8 objectively reasonable good faith basis to believe that its activities do not infringe any  
9 valid claim of the ‘296 patent. Defendants’ future acts of infringement will constitute  
10 continuing willful infringement of the ‘296 patent.

11  
12 **PRAYER FOR RELIEF**

13 WHEREFORE, Plaintiff prays for:

- 14 1. Judgment that the ‘504, ‘441, ‘181, and ‘296 patents are each valid and  
15 enforceable;
- 16 2. Judgment that the ‘504, ‘441, ‘181, and ‘296 patents are infringed by  
17 Defendants;
- 18 3. Judgment that Defendants’ acts of patent infringement relating to the ‘504,  
19 ‘441, ‘181, and ‘296 patents are willful;
- 20 4. An award of damages arising out of Defendants’ acts of patent infringement,  
21 together with pre-judgment and post-judgment interest;
- 22 5. Judgment that the damages so adjudged be trebled in accordance with 35  
23 U.S.C. § 284;
- 24 6. An award of Plaintiff LMS’s attorneys’ fees, costs and expenses incurred in  
25 this action in accordance with 35 U.S.C. § 285; and
- 26 7. Such other and further relief as the Court may deem just and proper.
- 27  
28

**RESERVATION OF RIGHTS**

LMS's investigation is ongoing, and certain material information remains in the sole possession of Defendants or third parties, which will be obtained via discovery herein. LMS expressly reserves the right to amend or supplement the causes of action set forth herein in accordance with Rule 15 of the Federal Rules of Civil Procedure.

Respectfully submitted,

Date: March 15, 2018

/s/ Jon A. Birmingham

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**JURY DEMAND**

LMS demands trial by jury of all issues triable of right by a jury.

Respectfully submitted,

Date: March 15, 2018

/s/ Jon A. Birmingham

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