

**IN THE UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS**

**MASSACHUSETTS INSTITUTE OF
TECHNOLOGY,**

Plaintiff,

v.

**MICRON TECHNOLOGY, INC., APPLE, INC.,
ELPIDA MEMORY, INC., MICRON MEMORY
JAPAN, INC., ELPIDA MEMORY USA, INC.,**

Defendants.

Civil Action No.

**COMPLAINT FOR PATENT INFRINGEMENT
[JURY TRIAL DEMANDED]**

Plaintiff Massachusetts Institute of Technology (“MIT”) files this Complaint against Defendants Micron Technology, Inc. (“Micron”); Apple, Inc. (“Apple”); Elpida Memory, Inc. and Micron Memory Japan, Inc. (“collectively Micron Japan”); and, Elpida Memory USA, Inc. (“Elpida USA”). (All defendants are referred to collectively as “Defendants.”)

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. §§ 1, *et seq.*

2. MIT is the assignee of U.S. Patent No. 6,057,221, which originally issued on May 2, 2000, and was granted a Certificate of Reexamination by the United States Patent and Trademark Office on September 11, 2012, under Certificate No. 6,057,221 C1 (the “’221 patent”). A true and correct copy of the ’221 patent, which includes the certificate of reexamination, and a certificate of correction to the certificate of reexamination, is attached as Exhibit A to this Complaint.

3. MIT has attempted in good faith to license the '221 patent to Micron and Micron Japan (when it was Elpida Memory, Inc.), but despite their ongoing infringement, neither would agree to pay fair value for a license. For example, attached as Exhibit B is a claim chart shown to Elpida Memory, Inc. (now Micron Memory Japan, Inc.) showing an example of how Elpida Memory, Inc.'s memory products are made using the methods claimed in the '221 patent. (Exhibit B is only excerpts from a larger presentation. Portions of the presentation have been removed so as to retain only the claim charts and not confidential, licensing-related information not relevant to the claim chart and notice of infringement itself.) On information and belief, the method of manufacture evidenced in this chart is representative of the method of manufacture of Micron Japan's memory devices, using '221 patent claimed methods, including those used in Apple's products that Apple imports into the United States and sells in the United States (both acts of direct infringement by Apple), as well as the products supplied by Micron through its acquisition of Elpida Memory, Inc., now renamed Micron Memory Japan, Inc. Claims 3 and 17 of this chart, for example, are substantially identical to claims 3 and 17 of the reexamined patent, in independent form. Excerpts from an updated presentation also showing infringement and shared on November 9, 2012, are attached as Exhibit C. Defendants infringe the '221 patent directly by importing these products into, or by using, making, or selling them, and/or offering them for sale in the United States under 35 U.S.C. § 271. Defendants indirectly infringe the '221 patent by contributing to such acts of direct infringement under 35 U.S.C. § 271(b) or (c).

PARTIES

4. Plaintiff MIT is a Massachusetts not-for-profit corporation with its principal place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139. MIT is a world-renowned educational and research institution whose investments in education, research, and

development have resulted in foundational discoveries and inventions across a broad array of technologies, including semiconductor design and manufacturing. MIT has approximately 12,000 employees in Cambridge and Lexington, Massachusetts, including faculty members, and research, library, and administrative staff. It enrolls over 11,000 students at its Cambridge, Massachusetts campus. MIT also maintains a technology licensing office, which grants licenses for patented inventions and copyrighted material arising from research performed at its facilities in Massachusetts or in collaboration with other research institutions. In this lawsuit, MIT seeks compensation for Defendants' unauthorized use of MIT's patented inventions.

5. Defendant Micron is a Delaware corporation, with its principal place of business at 8000 S. Federal Way, Boise, Idaho 83716. On information and belief, Micron, either directly or through one or more of its subsidiaries, manufactures DRAM semiconductor devices using the methods claimed in the '221 patent. Micron and its subsidiaries import, use, or sell these devices, and offer them for sale, in the United States.

6. Defendant Micron Memory Japan, Inc. is a corporation with a principal place of business at Sumitomo Seimei Yaesu Bldg. 3F, 2-1 Yaesu 2-chome, Chuo-ku, Tokyo 104-0028, Japan. Micron Memory Japan, Inc. is a subsidiary of Micron. Before it was acquired by Micron, Micron Memory Japan Inc. was known as Elpida Memory, Inc. Micron Memory Japan, Inc., and Elpida Memory, Inc. are referred to collectively herein as "Micron Japan." Micron Japan is the parent company of Micron Akita, Inc., f/k/a Akita Elpida, Inc., with a principal place of business at 89-2, Yamada, Yuwaishida, Akita-shi, Akita 010-1222, Japan ("Micron Akita"). Micron Akita, Inc. supplies Micron Japan and Micron with memory devices made using a process that uses methods claimed in the '221 patent. On information and belief, Micron Japan manufactures and sells DRAM semiconductor devices made using methods claimed in the '221

patent and also sells such DRAM semiconductor devices manufactured by foundries such as Micron Taiwan, and Micron Akita. Micron Japan, either itself or through Micron, Elpida USA, or other Micron-affiliated companies, sells these devices to customers (such as Apple) that incorporate them into their products and import them into, or use or sell them, or offer them for sale, in the United States. These devices include devices made using methods claimed in the '221 patent. On information and belief, Micron Taiwan manufactures and sells most or all of its output of DRAM semiconductor devices to Micron Japan or Micron, and these devices include devices made using methods claimed in the '221 patent.

7. Defendant Elpida USA is a Delaware corporation with its principal place of business at 1175 Sonora Court, Sunnyvale, California 94086. On information and belief, Elpida USA is a wholly-owned subsidiary of Micron Japan and is controlled by or acts as an agent of Micron Japan and Micron. Elpida USA sells and offers for sale in the United States DRAM semiconductor devices made using methods claimed in the '221 patent and supplied by Micron Japan or others, including (i) Micron Akita, Inc., which is also owned and controlled by Micron and Micron Japan, (ii) Micron Memory Taiwan Co. Ltd. (formerly known as Rexchip Electronics Corporation) ("Micron Taiwan"), which is controlled and majority owned by Micron, and (iii) Powerchip, Inc.

8. Defendant Apple is a California corporation with a principal place of business at 1 Infinite Loop, Cupertino, California 95014 and is registered to do business in Massachusetts. On information and belief, Apple imports and sells products that contain DRAM semiconductor devices made using the methods claimed in the '221 patent, including devices manufactured or provided by Micron Japan or other companies owned or controlled by Micron. On information and belief, Apple is the single largest user of devices made by Micron Japan and other Micron-

related companies using the methods claimed in the '221 patent and imports a large number of products that use such devices into the United States.

JURISDICTION AND VENUE

9. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 271 *et seq.* This Court has subject matter jurisdiction over this action under 28 U.S.C. § 1331 and 28 U.S.C. § 1338(a).

10. This Court has personal jurisdiction over each Defendant. Defendants Micron, Apple, Elpida USA, and Micron Japan conduct business in Massachusetts, including through their sale or importing of products with DRAM semiconductor devices made using the methods claimed in the '221 patent.

11. Defendants are subject to specific and general personal jurisdiction in Massachusetts, having purposely availed themselves of the rights and benefits of Massachusetts law by conducting business here, including: (i) having offered for sale or sold products incorporating devices made using the methods claimed in the '221 patent, having purposely imported or shipped, or caused to be imported or shipped, such products into Massachusetts through established distribution channels, or having committed acts in Massachusetts that are the subject of this complaint; or (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services sold to individuals in Massachusetts. On information and belief, the Defendants, directly or through intermediaries (including distributors, retailers, and others), ship, distribute, offer for sale, sell, and advertise (including making interactive web pages available to the public) their products in the United States and Massachusetts that are or contain devices made with methods claimed in the '221 patent. Each Defendant has purposefully and voluntarily placed such products in the

stream of commerce knowing and expecting them to be purchased and used by consumers in Massachusetts. Each Defendant has either committed direct infringement in Massachusetts or committed indirect infringement based on acts of direct infringement in Massachusetts.

12. On information and belief, Micron and Micron Japan do one or more of the following with DRAM semiconductor devices that they or their foundries manufacture with methods claimed in the '221 patent: (a) import these devices into the United States for sale to consumers, including consumers in Massachusetts, (b) sell them or offer them for sale in the United States, including to customers in Massachusetts, (c) sell them to customers, such as (without limitation) Apple or Apple OEMs, who incorporate them into products that such customers, including (without limitation) Apple, sell or offer for sale in the United States, including in Massachusetts. Defendant Apple also imports products having these devices into the United States, which Apple sells or offers for sale in Massachusetts.

13. On information and belief, Micron (including through its subsidiaries) markets its products in Massachusetts through its own direct sales force. In addition, Micron sells its products in Massachusetts through indirect sales representatives and distributors and provides technical support and engineering expertise to its customers and potential customers in Massachusetts.

14. Defendants Micron and Micron Japan manufacture, assemble or sell electronic products that are used, offered for sale, sold, or purchased in Massachusetts. Each defendant, directly or through its distribution network, places its DRAM semiconductor devices, made with methods claimed in the '221 patent, including wafers, memory modules, desktop computer memories, mobile device memories, or products that incorporate the foregoing, within the stream of commerce, and through that stream, into Massachusetts. Apple imports products that include

these memory products into the United States and sells these products and offers them for sale in Massachusetts. Micron Japan has availed itself of the privilege of suing in Federal Courts in the United States, where it has represented, *inter alia*, that it has made and sold billions of dollars' worth of DRAM semiconductors worldwide. Upon information and belief, Micron Japan has conducted and regularly conducts business within Massachusetts, has purposefully availed itself of the privileges of conducting business in Massachusetts, and has sought protection and benefit from the laws of the Massachusetts, including by directing and/or controlling the actions of its subsidiary, Elpida Memory (USA) Inc.

15. On information and belief, Apple does business in the United States, and more particularly in Massachusetts, by selling products in Massachusetts that contain DRAM semiconductor devices made with methods claimed in the '221 patent and supplied by Micron or its subsidiaries Micron Japan and Micron Taiwan. For example, Apple sells these products in Apple retail stores in Boston, Braintree, Burlington, Cambridge, Chestnut Hill, Dedham, Hingham, Holyoke, Marlborough, Natick, and Peabody. Apple also sells these products to third party resellers and distributors, who sell them to consumers in Massachusetts.

16. Venue is proper in the District of Massachusetts under 28 U.S.C. §§ 1391 and 1400(b).

GENERAL ALLEGATIONS

17. On May 2, 2000, the U.S. Patent and Trademark Office issued U.S. Patent No. 6,057,221, entitled "Laser Induced Cutting of Metal Interconnect" to Joseph B. Bernstein and Zihui Duan. On September 11, 2012, the United States Patent and Trademark Office issued reexamination Certificate No. 6,057,221 C1.

18. MIT holds the right, title, and interest to the '221 patent, and all reexamination

applications and certificates therefor, including 6,057,221 C1.

19. MIT possesses all rights to enforce the '221 patent, including to sue and recover damages for past and future infringement. A copy of an assignment dated February 4, 2015 is attached as Exhibit D.

Infringement of U.S. Patent No. 6,057,221 C1

20. MIT repeats and re-alleges the allegations in paragraphs 1-19 as though fully set forth herein.

21. On information and belief, Defendants have infringed, and continue to infringe, directly, contributorily, and through the inducement of others, the '221 patent by importing, using, selling, or offering to sell in the United States, without authority, devices made using the methods claimed in the '221 patent or products containing such devices, under, without limitation, 35 U.S.C. § 271(g) or by contributing to or inducing the importation, use, sale, or offers to sell in the United States, without authority, products made using the methods claimed in the '221 patent, under 35 U.S.C. § 271(b) or (c). On information and belief, DRAM semiconductor devices manufactured or supplied by Micron Japan are made using a laser cut link process that practices claims of the '221 patent. On information and belief, Micron, Micron Japan, Elpida USA, and Apple directly infringe when they import, use, sell, or offer for sale in the United States, without authority, DRAM semiconductor devices made using this laser cut link process.

22. On information and belief, Micron Japan has infringed and continues to infringe the '221 patent directly, contributorily, or through inducing others who infringe directly. On information and belief, Micron Japan (including through its subsidiary Elpida USA) directly infringes by importing, selling, using, or offering for sale in the United States DRAM semiconductor devices made or supplied by Micron Japan, Micron Akita, or Micron Taiwan

without permission. Micron Japan also indirectly infringes, for example, by inducing customers such as Apple and other customers, resellers, and original equipment manufacturers (OEMs) who purchase devices manufactured at Micron Japan's and Micron Taiwan's overseas facilities to import devices made using the methods claimed in the '221 patent, or to sell or use such devices, or offer them for sale in the United States without authority. For example, on information and belief, Micron Japan, Micron Akita, and Micron Taiwan DRAM memory devices made using a cut link laser process claimed in the '221 patent, are purchased by Apple or Apple OEMs for integration into Apple products, which Apple or its agents then import into the United States and sell, both of which are acts of direct infringement. Defendants Micron, Micron Japan, and Elpida USA knowingly and intentionally encourage customers, resellers, OEMs, or others to import into the United States and sell in the United States DRAM devices made using the methods claimed in the '221 patent. On information and belief, Micron and Micron Japan are the primary recipients of Micron Taiwan's DRAM output and Micron Akita's output, and Apple is Micron and Micron Japan's single largest customer for this output as well as Micron Japan's DRAM output. Micron, Elpida USA, and Micron Japan directly benefit from and actively and knowingly encourage Apple's and other customers', resellers, and users' importation of these products into the United States and sale and use within the United States, each of which constitute separate acts of direct infringement. Micron, Elpida USA, and Micron Japan actively encourage customers and downstream users, OEMs, and resellers to import, use, and sell in the United States the DRAM semiconductor products that they manufacture and supply, including through advertising, marketing, and sales activities directed at United States sales or sales with a major intended United States component. On information and belief, these marketing and sales activities include encouragement for OEMs and customers like Apple to use memory products

supplied by Micron Japan in their own products and to import and sell those products in the United States. On information and belief, Micron and its subsidiaries are aware of the size and importance of the United States market for customers of Micron Japan products (which include products that may be supplied to Micron Japan from Micron and Micron Japan-affiliated companies such as Micron Taiwan and Micron Akita), such as Apple, and also distribute or supply these products to Micron's United States operations, including Micron's subsidiary Elpida USA, specifically intended for importation, use, and sale in the United States.

23. On information and belief, Micron has infringed and continues to infringe the '221 patent directly, contributorily, and through the inducement of others who infringe directly. On information and belief, Micron's subsidiaries make DRAM semiconductor devices using methods claimed in the '221 patent, which devices infringe when they are imported into, or sold, used, or offered for sale in, the United States. On information and belief, Micron directly infringes by selling, importing, using, and offering for sale these devices in the United States, including through its subsidiaries, such as Elpida USA. Micron indirectly infringes, for example, by inducing customers such as Apple and other customers (such as makers of other mobile devices and desktop computers that use Micron Japan and Micron Taiwan memory) to import products that integrate devices made using the methods claimed in the '221 patent, or to sell or use such products, or offer them for sale, in the United States. These Micron memory products are intended for integration into products known to be sold widely in the United States, for example, such as Apple iPhone, iPad, and iPod touch products (as well as other mobile devices), which Apple and others then import into, and sell in, the United States, both of which are acts of direct infringement. Micron is aware of, and actively encourages, the importation into, and sale of these products in, the United States. Micron directly benefits from United States importation

and sales by its customers and others that use Micron Japan and Micron Taiwan memory in their products. On information and belief, Apple is Micron's single largest customer for products made and supplied by Micron Taiwan, Micron Akita, and Micron Japan; and Micron directly benefits from and encourages Apple's importation of these products into the United States and sale and use within the United States, each of which constitute acts of direct infringement. On information and belief, Micron Japan also distributes or supplies these products to Micron and its subsidiary Elpida USA specifically intended for importation, use, and sale in the United States. On information and belief, Micron Taiwan makes DRAM semiconductor devices using a laser cut link method claimed in the '221 patent. These devices are provided to Micron or Micron Japan and infringe when imported into, or sold, used, or offered for sale in, the United States by Micron and customers of Micron and Micron Japan such as Apple.

24. On information and belief, Elpida USA has infringed and continues to infringe the '221 patent directly, contributorily or through the inducement of others. On information and belief, Elpida USA uses, imports, sells, and offers for sale DRAM semiconductor devices made or supplied by Micron Japan using a laser cut link method claimed in the '221 patent and is a direct infringer under 35 U.S.C. § 271(g). On information and belief, Micron is integrating infringing operations of Elpida USA into its own. Elpida USA, with its parent Micron, actively encourages the infringement of the '221 patent, for example, through marketing and sales of products made using methods claimed in the '221 patent, knowing and intending that those product are to be imported, sold, and used in the United States without authority, in violation of the patent.

25. Apple has infringed and continues to infringe the '221 patent directly, contributorily, or through the inducement of others. On information and belief, Apple imports,

sells, uses, or offers for sale in the United States products that incorporate devices made using a laser cut link method claimed in the '221 patent, devices made by Micron's subsidiaries Micron Japan or Micron Taiwan, and others such as Powerchip Technology Corporation, which supplies semiconductor wafers to Micron Japan or Micron Taiwan. Apple integrates these devices into its own products, such as its iPhone, iPad, and desktop products, such as Apple's MacBook Air. Apple distributes and sells these products knowing and intending that they will be re-sold or used in the United States, such as to or by end users. To the extent that any relevant device or product is subject only to noncommercial use or retail sale in the United States, these are infringing acts at least because there is no other adequate remedy for infringement.

26. On information and belief, Micron or its subsidiary Micron Japan, and their subsidiaries, have known about the '221 patent, that their memory devices are made using methods claimed in the '221 patent, and that these devices were and continue to be imported into the United States and sold in large volumes by themselves and others, such as customers like Apple and distributors and resellers, since at least May 22, 2008. As a result, MIT met with Micron Japan (then known as Elpida Memory Inc.) in Tokyo on June 30, 2008. Micron Japan participated in discussions regarding, and was fully aware of, its infringement of the '221 patent and the infringement of others such as its major customer Apple, from at least May 2008. Micron, as the owner or prospective owner of Micron Japan and as the primary owner of Micron Taiwan and their collective subsidiaries, engaged in further discussions regarding, and was aware of, its infringement of the '221 patent and the infringement of others such as its customer Apple, from at least November 9, 2012. On information and belief, Micron also knew of the '221 patent and MIT's assertion of infringement via correspondence, since at least July 19, 2012, as well as through Micron's diligence regarding the Elpida acquisition, in light of a claim for monetary

damages that Micron knew or ought to have known was made by MIT against Elpida in connection with a foreign bankruptcy proceeding. Micron also would have been aware of the '221 patent and MIT's infringement allegations as a result of a definitive sponsor agreement Micron made to acquire and support Elpida on July 2, 2012. On information and belief, Micron and its subsidiaries have continued to infringe and to actively and specifically encourage and induce the direct infringement of others, knowing that such others would import into the United States, and sell or use or offer for sale in the United States, DRAM semiconductor devices made with a laser cut link method claimed in the '221 patent and supplied by these defendants, and knowing that these acts constitute infringement. On information and belief, Elpida USA knew of the '221 patent and the infringement thereof through its parents Micron Japan and Micron.

27. On information and belief, Defendant Micron, including its subsidiaries Micron Japan and Elpida USA, acted despite an objectively high likelihood that its actions constituted direct or indirect infringement of a valid patent, and this was either known or so obvious that Micron should have known about it. Micron, including its subsidiaries, deliberately continues to infringe the '221 patent by importing, using, selling, and offering for sale in the United States the infringing devices and to contribute to the direct infringement of others performing these acts, or they have acted at least in reckless disregard of MIT's patent rights. All infringement of MIT's '221 patent following Micron Japan's knowledge of the '221 patent is willful and MIT is entitled to treble damages and attorneys' fees and costs incurred in this action, along with prejudgment interest under 35 U.S.C. §§ 284, 285.

28. As a result of Defendants' infringement, MIT has suffered and will continue to suffer damage. MIT is entitled to recover from Defendants the damages adequate to compensate for such infringement, which have yet to be determined.

PRAYER FOR RELIEF

WHEREFORE, MIT requests the following relief:

- A. A finding that Defendants have infringed the '221 patent;
- B. A finding that Micron and its subsidiaries Micron Japan and Elpida USA have directly infringed the '221 patent;
- C. A finding that Micron and its subsidiaries Micron Japan, Micron Taiwan, and Elpida USA have indirectly infringed the '221 patent;
- D. A finding that Apple has directly infringed the '221 patent;
- E. A finding that Apple has indirectly infringed the '221 patent;
- F. An award of MIT's actual damages or a reasonable royalty;
- G. An award of pre-judgment interest and post-judgment interest at the maximum rate allowed by law, including an award of prejudgment interest, pursuant to 35 U.S.C. § 284, from the date of each act of infringement of the '221 patent by Defendants to the day a money judgment is entered, and a further award of post-judgment interest, pursuant to 28 U.S.C. § 1961, continuing until such judgment is paid, at the maximum rate allowed by law;
- H. An accounting for damages or royalties through judgment and for probable or supplemental damages or royalties post-judgment until the expiration of the '221 patent;
- I. A declaration that this is an exceptional case pursuant to 35 U.S.C. § 285 requiring Defendants to pay the costs of this action (including all disbursements) and attorney's fees as provided by 35 U.S.C. § 285;
- J. An award of enhanced damages pursuant to 35 U.S.C. § 284;
- K. That the Court award a compulsory future royalty;
- L. That Defendants pay MIT's reasonable attorney's fees and costs; and
- M. An award of such other and further relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

MIT demands a trial by jury on all issues so triable.

Dated: February 12, 2015.

MASSACHUSETTS INSTITUTE OF
TECHNOLOGY

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