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. 15-cv-10374-FDS**

AMENDED COMPLAINT FOR PATENT INFRINGEMENT
[JURY TRIAL DEMANDED]

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. Plaintiff Massachusetts Institute of Technology ("MIT") is the assignee of, and holds all the right, title, and interest to, U.S. Patent No. 6,057,221, entitled "Laser Induced Cutting of Metal Interconnect," originally issued on May 2, 2000 to Joseph B. Bernstein and Zhihui Duan as named inventors, 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. A true and correct copy of the '221 patent, including the certificate of reexamination and a certificate of correction to the certificate of reexamination, is attached as Exhibit A (collectively, the "'221 patent"). MIT was originally one of two assignees of the patent, but now possesses all rights to it, including the right to enforce it and recover damages for past and future infringement, by virtue of an assignment from its original co-assignee, a copy of which is

attached as Exhibit B.

3. In various ways, Defendants Micron Technology, Inc. ("Micron"), Apple, Inc. ("Apple"), Micron Memory Japan, Inc. f/k/a Elpida Memory, Inc. ("Micron Japan"), and Elpida Memory USA, Inc. ("Elpida USA") have been infringing the '221 patent and continue to do so either directly or indirectly under certain subsections of 35 U.S.C. § 271. MIT attempted in good faith to license the '221 patent to Micron and Micron Japan (when it was known as Elpida Memory, Inc.), but neither would agree to pay fair value for a license.

4. The infringing devices referred to in this complaint are DRAM semiconductors made using a laser cut-link process or method claimed in the '221 patent, as well as devices that incorporate such semiconductors (such as packaged memory chips and memory modules), which are imported into the United States, or sold, offered for sale, or used in the United States, without authority ("Infringing Devices"). Attached as Exhibit C is a claim chart showing an example of how Micron Japan's memory devices are made using methods claimed in the '221 patent. This chart was shown to Micron Japan as part of a presentation when it was known as Elpida Memory, Inc. The infringing method of manufacture evidenced in this chart is representative of the method of manufacture of the memory devices at issue in this suit, including those used in products that Apple imports into, and sells in, the United States (acts of direct infringement) and including products supplied by Micron from and through Micron Japan and subsidiaries acquired in whole or in part as part of the acquisition of Micron Japan. 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 which were shared with Micron or Micron Japan on November 9, 2012 are attached as Exhibit D.

PARTIES

5. 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, and 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.

6. Defendant Micron is a Delaware corporation, with its principal place of business at 8000 S. Federal Way, Boise, Idaho 83716.

7. Defendant Micron Japan 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 Japan is a subsidiary of, and is owned and controlled by, Micron.

8. Micron and Micron Japan, either directly or through one or more subsidiaries, manufacture and sell semiconductors that are Infringing Devices. Some of these devices are made by Micron Akita, Inc., f/k/a Akita Elpida, Inc., based in Akita, Japan ("Micron Akita"), which is a subsidiary of Micron or Micron Japan, or by Micron Memory Taiwan Co. Ltd. f/k/a/ Rexchip Electronics Corporation, based in Taiwan ("Micron Taiwan"), a related company that is majority owned and controlled by Micron. Micron Taiwan and Micron Akita are foundries that sell or otherwise provide most or all of their DRAM semiconductor output to Micron or Micron

Japan.

9. Defendant Elpida USA is a Delaware corporation with its principal place of business at 1175 Sonora Court, Sunnyvale, California 94086. Elpida USA has been a wholly-owned subsidiary of Micron Japan and is a wholly-owned subsidiary of Micron and is controlled by or acts as an agent of Micron and Micron Japan. Elpida USA sells and offers for sale in the United States Infringing Devices supplied by Micron, Micron Japan, Micron Akita, or Micron Taiwan, by other companies owned or controlled by Micron or Micron Japan, or by Powerchip, Inc.

10. 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. Apple imports and sells in the United States a large number of products containing Infringing Devices manufactured or provided by Micron Japan, Micron Akita, and Micron Taiwan, or other companies owned or controlled by Micron.

JURISDICTION AND VENUE

11. Because 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).

12. Each defendant is subject to personal jurisdiction in Massachusetts. They conduct business here by selling, offering for sale, or distributing Infringing Devices or products containing Infringing Devices in Massachusetts, by importing or shipping such devices or products, or causing such devices or products to be imported or shipped, into Massachusetts through established distribution channels, by advertising such devices or products in Massachusetts (including by making interactive web pages available to the public in

Massachusetts), or by committing other acts in Massachusetts that are the subject of this amended complaint. Each defendant places Infringing Devices – including wafers, memory modules, computer memories, mobile memories, or products that incorporate the foregoing – into the stream of commerce and, through that stream, into Massachusetts, where they know and expect those products will be purchased and used by consumers. Each Defendant has either committed direct infringement in Massachusetts or committed indirect infringement based on acts of direct infringement in Massachusetts. The Defendants have engaged in these activities directly or through intermediaries (including distributors, retailers, and others).

13. Micron, Micron Japan, and Elpida USA (for itself and as agent for Micron and Micron Japan) do one or more of the following with Infringing Devices: (a) import them 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 Apple, ZTE, Huawei, HTC, and others, or to original equipment manufacturers ("OEMs") for such customers, who incorporate them into products that such customers or their agents import into, or sell or offer for sale, in the United States, including in Massachusetts.

14. Defendant Apple does business in the United States, and more particularly in Massachusetts, by importing products into the United States having Infringing Devices – supplied by Micron, Micron Japan, or their subsidiaries or affiliates – and selling or offering them for sale in Massachusetts. Apple sells these and other products, for example, 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.

15. In addition, each defendant has purposely availed themselves of the rights, privileges, protections, and benefits of Massachusetts law by regularly conducting or soliciting business here, engaging in other persistent courses of conduct here, or deriving substantial revenue from goods and services sold to individuals in Massachusetts. Each Defendant has purposefully and voluntarily placed their products in the stream of commerce knowing and expecting they will be purchased and used by consumers in Massachusetts.

16. Micron and Micron Japan (including through their subsidiaries or affiliates such as Elpida USA) market and sell their products and solicit customers in Massachusetts through a direct sales force and through indirect sales representatives and distributors. In addition, Micron and Micron Japan manufacture and assemble products and provide technical support and engineering expertise for these products to customers and potential customers in Massachusetts. Micron Japan has also availed itself of the privilege of suing in United States Federal Courts where it has represented that it has made and sold billions of dollars worth of DRAM semiconductors worldwide. Micron Japan has also directed or controlled the actions of its subsidiary Elpida USA in Massachusetts.

17. Apple derives substantial revenue from customers in Massachusetts to whom it sells its products through numerous retail stores here, through third party resellers and distributors, and through online sales.

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

CLAIMS AND COUNTS

19. In violation of 35 U.S.C. § 271(g), each Defendant has directly infringed and continues to infringe the ’221 patent by importing, using, selling, or offering for sale Infringing

Devices in the United States, and they have also indirectly infringed and continue to infringe indirectly under § 271(b) by inducing such infringement by others.

20. Micron, Micron Japan, and Elpida USA are aware of the size and importance of the United States market for customers, such as Apple, who buy, use, or sell Infringing Devices or products that incorporate Infringing Devices made by Micron Japan, Micron Akita, Micron Taiwan, or other companies affiliated with Micron and Micron Japan. Micron and Micron Japan distribute or supply these devices to Micron's United States operation, including to Elpida USA to the extent that its functions and operations have not already been integrated into Micron or its other subsidiaries or affiliates, specifically intending such devices to be imported, used, and sold in the United States.

21. As a result of (i) discussions with Elpida Memory, Inc. occurring on and after May 22, 2008 and in Tokyo on June 30, 2008 regarding its infringement of the '221 patent and the direct infringement of major customers such as Apple, (ii) a definitive sponsor agreement Micron made to acquire and support Elpida Memory, Inc. on July 2, 2012, (iii) correspondence on or about July 19, 2012, (iv) the showing of the claim chart (Exhibit C) to Micron Japan when it was Elpida Memory, Inc., (v) additional discussions and presentations regarding infringement of the '221 patent since at least November 9, 2012, (vi) Micron's diligence regarding the acquisition of Elpida Memory, Inc. (in further light of a claim for monetary damages that Micron knew or ought to have known was made by MIT against Elpida Memory, Inc. in connection with a foreign bankruptcy proceeding), and (vii) service of the original complaint, including exhibits, in this action on February 17, 2015, Micron, Micron Japan, and Elpida USA (on information and belief, through its parents Micron Japan and Micron) have known about the '221 patent, have known that Micron Taiwan and Micron Japan (and Micron-related foundries such as Micron

Akita) manufacture and provide Infringing Devices, have known that these devices were and continue to be imported into the United States and sold in large volumes by themselves and others, have known that their own activities continue to infringe the ’221 patent, and have knowingly encouraged or induced direct infringement by others to whom they supply Infringing Devices, knowing that these others would import these Infringing Devices or products incorporating these Infringing Devices into the United States, or that these others would sell, use, or offer for sale in the United States such Infringing Devices, and that these acts are acts of direct infringement. These others include Apple, OEMs, resellers, distributors, downstream users, and other makers or sellers of mobile devices and computers that use Infringing Devices made or supplied by Micron, Micron Japan, Micron Taiwan, or Elpida USA.

22. On February 17, 2015, Apple was served with the original complaint in this action, including the exhibits. Since at least this date, Apple has known or been on notice of the ’221 patent and its infringement, and has known or been on notice that memory devices in its products are Infringing Devices, that Apple and those whom Apple encourages to infringe continue to import these Infringing Devices into the United States and to sell them, offer them for sale, and use them in large volumes in the United States (knowing each to be acts of direct infringement), and that those to whom Apple sells these Infringing Devices, including Apple’s downstream customers, end-users, distributors, importers, and resellers, infringe the ’221 patent. Examples of such Apple customers and resellers in the United States are companies that provide carrier service for the Apple iPhone, such as Sprint, Verizon, US Cellular, and others,[1] and provide Apple devices to customers of these carrier services.

[11] *See, e.g.,* https://support.apple.com/en-us/HT204039; http://www.uscellular.com/about/press-room/2014/USCellular-to-Offer-iPhone-6-iPhone-6-Plus-on-Friday-September-19.html; http://www.verizonwireless.com/landingpages/iphone/; http://www.sprint.com/landings/iphone/.

23. On information and belief, Micron, Micron Japan, Elpida USA, and Apple have engaged and continue to engage in direct or indirect infringement despite an objectively high likelihood that their actions directly or indirectly infringe the ’221 patent. This has been known to them, or it has been so obvious that they should have known about it or they acted in reckless disregard of MIT’s patent rights. All infringement of MIT’s ’221 patent following their 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.

24. As a result of the acts of infringement alleged above and below, MIT has suffered and will continue to suffer damage. MIT is entitled to recover damages from Defendants to compensate for such infringement, which damages have yet to be determined.

25. All conditions precedent have been performed or have occurred.

COUNT ONE
(MIT vs. Micron)

26. MIT incorporates by reference the allegations in paragraphs 1-25 and in Counts Two, Three, and Four as though fully set forth herein.

27. Micron directly infringes the ’221 patent by importing, using, selling, or offering for sale in the United States Infringing Devices. Micron’s infringing activities include the activities of its subsidiaries, such as Elpida USA, whose infringing operations Micron is incorporating into its own.

28. Micron indirectly infringes the ’221 patent, and directly benefits from such infringement, by actively inducing or encouraging customers, such as Apple and other customers (such as makers and sellers of other mobile devices and desktop computers that use memory from Micron Japan or Micron Taiwan), resellers, and OEMs who purchase Infringing Devices manufactured by Micron Japan or at other Micron facilities overseas, to import Infringing

Devices or products that integrate such devices into the United States, or by actively inducing or encouraging them to offer for sale, sell, or use such devices or products in the United States, knowing these to be acts of infringement or willfully blind to this fact. Micron intends that these Infringing Devices be integrated into these products, which are often themselves manufactured overseas and which are imported into, sold, and used widely in the United States, all being acts of direct infringement. These products include, for example, the iPhone, iPad, and iPod Touch, as well as other devices. On information and belief, Apple is Micron's single largest customer for Infringing Devices made or provided by Micron subsidiaries (principally Micron Japan, Micron Taiwan, and Micron Akita). Micron engages in this active encouragement and inducement also by advertising, marketing, and sales efforts in or directed at markets in the United States, or with a major intended United States component, for the purpose of stimulating sales in the United States of products containing Infringing Devices made by Micron or its subsidiaries.

COUNT TWO
(MIT vs. Micron Japan)

29. MIT incorporates by reference the allegations in paragraphs 1-28 and in Counts Three and Four as though fully set forth herein.

30. Micron Japan, including through its subsidiary Elpida USA, directly infringes the '221 patent by importing, using, selling, or offering for sale Infringing Devices in the United States.

31. Micron Japan indirectly infringes the '221 patent, and directly benefits from such infringement, by actively inducing or encouraging customers, such as Apple and other customers (such as makers and sellers of other mobile devices and desktop computers that use memory from Micron Japan or Micron Taiwan), resellers, and OEMs who purchase Infringing Devices

manufactured by Micron Japan or at other Micron facilities overseas, to import Infringing Devices or products that integrate such devices into the United States, or by actively inducing or encouraging them to offer for sale, sell, or use such devices or products in the United States, all being acts of direct infringement. On information and belief, Apple is Micron Japan's single largest customer for Infringing Devices made or provided by Micron subsidiaries (principally Micron Japan, Micron Taiwan, and Micron Akito). Micron Japan also distributes or supplies these products to Micron and its subsidiary Elpida USA, intending them to be imported, used, and sold in the United States. Micron Japan engages in this active encouragement and inducement also by advertising, marketing, and sales efforts in or directed at markets in the United States, for the purpose of stimulating sales in the United States of products containing Infringing Devices made by Micron or its subsidiaries. Micron Japan either knows or is willfully blind to the fact that the actions of Apple and the other persons or entities whom it actively encourages or induces to infringe are acts of direct infringement of the '221 patent.

COUNT THREE
(MIT v. Elpida USA)

32. MIT incorporates by reference the allegations in paragraphs 1-31 and in Count Four, as though fully set forth herein.

33. Elpida USA directly infringes the '221 patent by importing, using, selling, and offering for sale Infringing Devices in the United States made or provided by Micron Japan and other Micron subsidiaries.

34. On information and belief, Elpida USA indirectly infringes the '221 patent and directly benefits from such infringement by actively encouraging and inducing others to infringe the '221 patent through its advertising, marketing, and sales efforts in the United States, including encouraging OEMs and customers like Apple to integrate Infringing Devices supplied

by Micron Japan and other Micron subsidiaries into their own products and to import and sell those products in the United States. Elpida USA either knows or is willfully blind to the fact that these are acts of direct infringement of the ’221 patent.

COUNT FOUR
(MIT v. Apple)

35. MIT incorporates by reference the allegations in paragraphs 1-34 as though fully set forth herein.

36. Apple directly infringes the ’221 patent by importing, using, selling, and offering for sale in the United States products that incorporate Infringing Devices made by Micron Japan and other Micron subsidiaries. Apple integrates these devices into its own products sold widely in the United States, such as its iPhone, iPad, iPod touch, other mobile devices, and desktop products like MacBook Air. Apple imports, distributes, and sells these products knowing and intending that they will be imported, re-sold, or used in the United States, such as to or by network operators and/or end users. If any relevant device or product is found to be subject only to non-commercial use or retail sale in the United States, MIT is entitled to a remedy for these infringing acts at least because there is no other adequate remedy for infringement.

37. In addition to its own direct infringement, Apple indirectly infringes the ’221 patent and directly benefits from such infringement by knowingly and actively encouraging, and inducing the use, sale, offer for sale, and importation of products incorporating Infringing Devices by its distributors, customers, resellers, and end-users. Apple further encourages and intends that its products containing infringing devices be resold by carriers to end users and that end users use the products containing the Infringing Devices, both further acts of direct infringement. The Infringing Devices are memory, which is used during any normal and intended operation of Apple products integrating said Infringing Devices. Operating Apple’s

products in their normal capacity requires use of memory, and Apple encourages the operation of its products. Apple either knows or is willfully blind to the fact that these are acts of direct infringement of the ’221 patent.

PRAYERS 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, 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 supplemental damages for any continuing post-verdict infringement;

L. That the Court award a compulsory future royalty;

M. That the Court require Defendants to pay interest on such damages at the legal rate;

N. That Defendants pay MIT's reasonable attorney's fees and costs; and

O. 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: April 26, 2015.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

By its attorneys,

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Certificate of Service

I certify that a true and correct copy of the above and foregoing document has been served on all counsel of record via the Court's ECF system on April 26, 2015.

/s/ *Kenneth R. Berman*
Kenneth R. Berman