

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

HSM PORTFOLIO LLC AND §
TECHNOLOGY PROPERTIES §
LIMITED LLC, §
§
Plaintiffs, §
§
v. §
§
FUJITSU LIMITED, §
FUJITSU AMERICA, INC., §
FUJITSU SEMICONDUCTOR §
AMERICA, INC., §
§
ADVANCED MICRO DEVICES, INC., §
§
QUALCOMM INCORPORATED, §
§
ELPIDA MEMORY, INC., §
ELPIDA MEMORY (USA) INC., §
§
SK HYNIX INC., §
SK HYNIX AMERICA INC., §
HYNIX SEMICONDUCTOR §
MANUFACTURING AMERICA INC., §
§
MICRON TECHNOLOGY, INC., §
§
PROMOS TECHNOLOGIES INC., §
§
SANDISK CORPORATION, §
§
SONY CORPORATION, §
SONY CORPORATION OF AMERICA, §
SONY ELECTRONICS INC., §
SONY COMPUTER §
ENTERTAINMENT INC., §
SONY COMPUTER §
ENTERTAINMENT AMERICA LLC, §
§
STMICROELECTRONICS N.V., §
STMICROELECTRONICS, INC., §
§

C.A. No. 1:11-cv-00770-RGA

JURY TRIAL DEMANDED

TOSHIBA CORPORATION, §
TOSHIBA AMERICA, INC., §
TOSHIBA AMERICA ELECTRONIC §
COMPONENTS, INC., §
 §
ON SEMICONDUCTOR §
CORPORATION, §
 §
ZORAN CORPORATION, §
 §
Defendants. §

PLAINTIFFS' THIRD AMENDED COMPLAINT

Plaintiffs HSM Portfolio LLC and Technology Properties Limited LLC (collectively “Plaintiffs”) by and through their undersigned counsel, file this Third Amended Complaint against Defendants Fujitsu Limited, Fujitsu America, Inc., Fujitsu Semiconductor America, Inc. (collectively “Fujitsu”), Advanced Micro Devices, Inc. (“AMD”), Qualcomm Incorporated (“Qualcomm”), Elpida Memory, Inc., Elpida Memory (USA) Inc. (collectively “Elpida”),¹ SK Hynix Inc., SK Hynix America Inc., Hynix Semiconductor Manufacturing America Inc. (collectively “SK Hynix”), Micron Technology, Inc. (“Micron”), ProMOS Technologies Inc. (“ProMOS”), SanDisk Corporation (“SanDisk”), Sony Corporation, Sony Corporation of America, Sony Electronics Inc., Sony Computer Entertainment Inc., Sony Computer Entertainment America LLC (collectively “Sony”), STMicroelectronics N.V., STMicroelectronics, Inc., (collectively “STMicro”), Toshiba Corporation, Toshiba America, Inc.,

¹ The Court administratively closed and stayed this case as to Elpida Memory, Inc. and Elpida Memory (USA) Inc. (collectively, “Elpida”) because of Elpida’s bankruptcy filing. D.I. 205. Plaintiffs are presently able amend their claims against Elpida (in a manner similar to their allegations against other Defendants) to specify additional factual details regarding to Elpida’s knowledge of the patents-in-suit and willful infringement, including but not limited to the facts that on April 11, 2008, Mr. Silverman contacted Yukio Sakamoto, President & CEO at Elpida, and on April 18, 2008, sent Mr. Sakamoto a follow-up letter and enclosed an exemplary claim chart. Nevertheless, Plaintiffs have not done so due to the Court’s stay order. Plaintiffs expressly reserve their right to amend their claims against Elpida if and when the stay is been lifted.

Toshiba America Electronic Components, Inc. (collectively “Toshiba”), ON Semiconductor Corporation (“ON Semiconductor”), and Zoran Corporation (“Zoran”) as follows:

THE PARTIES

1. HSM Portfolio LLC is a Delaware limited liability company with its principal place of business located at 20883 Stevens Creek Blvd., Suite 100, Cupertino, California 95014.

2. Technology Properties Limited LLC (“TPL”) is a California limited liability company with its principal place of business located at 20883 Stevens Creek Blvd., Suite 100, Cupertino, California 95014.²

3. Upon information and belief, Fujitsu Limited is a Japanese corporation that claims as its principal place of business, Shiodome City Center, 1-5-2, Higashi-Shimbashi, Minato-ku, Tokyo 105-7123 Japan. Fujitsu Limited has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Fujitsu Limited has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Fujitsu America, Inc.

4. Upon information and belief, Fujitsu America, Inc. is a California corporation that claims as its principal place of business, 1250 E. Arques Ave., Sunnyvale, California 94085. Fujitsu America, Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Fujitsu America, Inc. is a subsidiary of Fujitsu

² On March 20, 2013, TPL filed a petition under Chapter 11 of the U.S. Bankruptcy Code in the U.S. Bankruptcy Court for the Northern District of California, Case No. 13-51589-SLJ. Pursuant to Section 362 of the U.S. Bankruptcy Code, all actions and proceedings against TPL are automatically stayed, but the stay does not affect TPL’s actions and proceedings against the parties in this case. *See Maritime Elec. Co. v. United Jersey Bank*, 959 F.2d 1194, 1204-05 (3d Cir. 1991); *see also White v. City of Santee*, 186 B.R. 700, 705-07 (9th Cir. BAP 1995).

Limited. Upon information and belief, Fujitsu America, Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Fujitsu Semiconductor America, Inc.

5. Upon information and belief, Fujitsu Semiconductor America, Inc. is a California corporation that claims as its principal place of business, 1250 E. Arques Ave., Sunnyvale, California 94085. Fujitsu Semiconductor America, Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Fujitsu Semiconductor America, Inc. is a subsidiary of Fujitsu America, Inc. Upon information and belief, Fujitsu Semiconductor America, Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware.

6. Upon information and belief, Advanced Micro Devices, Inc. is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Advanced Micro Devices, Inc. claims as its principal place of business, One AMD Place, Sunnyvale, California 94088. Advanced Micro Devices, Inc. has already appeared through counsel of record, answered the Second Amended Complaint, and filed counterclaims against Plaintiffs.

7. Upon information and belief, Qualcomm Incorporated is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District,

has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Qualcomm Incorporated claims as its principal place of business, 5775 Morehouse Dr., San Diego, California 92121. Qualcomm Incorporated has already answered the Second Amended Complaint and appeared through counsel of record.

8. Upon information and belief, Elpida Memory, Inc. is a Japanese corporation that claims as its principal place of business, Sumitomo Seimei Yaesu Bldg. 3F, 2-1 Yaesu 2-chome, Chuo-ku, Tokyo 104-0028 Japan. Upon information and belief, Elpida Memory, Inc. may be served with process in Japan pursuant to the Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters. Upon information and belief, Elpida Memory, Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Elpida Memory (USA) Inc.

9. Upon information and belief, Elpida Memory (USA) Inc. is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Elpida Memory (USA) Inc. claims as its principal place of business, 1175 Sonora Ct., Sunnyvale, California 94086. Upon information and belief, Elpida Memory (USA) Inc. may be served with process by serving its registered agent, National Registered Agents, Inc., 160 Greentree Drive, Suite 101, Dover, Delaware 19904. Upon information and belief, Elpida Memory (USA) Inc. is a subsidiary of Elpida Memory, Inc.

10. Upon information and belief, SK Hynix Inc. is a Korean corporation that claims as its principal place of business, 2091, Gyeongchung-daero, Bubal-eub, Icheon-si, Gyeonggi-do, Korea. SK Hynix Inc. has already appeared through counsel of record, answered the Second Amended Complaint, and filed counterclaims against Plaintiffs. Upon information and belief, SK Hynix Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, SK Hynix America Inc.

11. Upon information and belief, SK Hynix America Inc. is a California corporation that claims as its principal place of business, 3101 North First Street, San Jose, California 95134. SK Hynix America Inc. has already appeared through counsel of record, answered the Second Amended Complaint, and filed counterclaims against Plaintiffs. Upon information and belief, SK Hynix America Inc. is a subsidiary of SK Hynix Inc. Upon information and belief, SK Hynix America Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Hynix Semiconductor Manufacturing America Inc.

12. Upon information and belief, Hynix Semiconductor Manufacturing America Inc. is a California corporation that claims as its principal place of business, 3101 N. First Street, San Jose, California 95134. Hynix Semiconductor Manufacturing America Inc. has already appeared through counsel of record, answered the Second Amended Complaint, and filed counterclaims against Plaintiffs. Upon information and belief, Hynix Semiconductor Manufacturing America Inc. is a subsidiary of Hynix Semiconductor America Inc. Upon information and belief, Hynix

Semiconductor Manufacturing America Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware.

13. Upon information and belief, Micron Technology, Inc. is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Micron Technology, Inc. claims as its principal place of business, 8000 South Federal Way, Boise, Idaho 83707. Micron Technology, Inc. has already appeared through counsel of record and answered the Second Amended Complaint.

14. Upon information and belief, ProMOS Technologies Inc. is a Taiwanese corporation that claims as its principal place of business, No. 19, Li-Hsin Road, Hsinchu Science Park, Hsinchu, Taiwan 30078, R.O.C. ProMOS Technologies Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, ProMOS Technologies Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware.

15. Upon information and belief, SanDisk Corporation is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, SanDisk Corporation claims as its principal place of business, 951 SanDisk Drive, Milpitas,

California 95035. SanDisk Corporation has already appeared through counsel of record and answered the Second Amended Complaint.

16. Upon information and belief, Sony Corporation is a Japanese corporation that claims as its principal place of business, 1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan. Sony Corporation has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Sony Corporation has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiaries, Sony Corporation of America and Sony Computer Entertainment Inc.

17. Upon information and belief, Sony Corporation of America is a New York corporation that claims as its principal place of business, 550 Madison Ave., New York, New York 10022. Sony Corporation of America has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Sony Corporation of America is a subsidiary of Sony Corporation. Upon information and belief, Sony Corporation of America has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Sony Electronics Inc.

18. Upon information and belief, Sony Electronics Inc. is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Sony

Electronics Inc. claims as its principal place of business, 16530 Via Esprillo, San Diego, California 92127. Sony Electronics Inc. has already appeared through counsel of record and answered the Second Amended Complaint.

19. Upon information and belief, Sony Computer Entertainment Inc. is a Japanese corporation that claims as its principal place of business, 1-7-1 Konan, Minato-ku, Tokyo 108-0075, Japan. Sony Computer Entertainment Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Sony Computer Entertainment Inc. is a subsidiary of Sony Corporation. Upon information and belief, Sony Computer Entertainment Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Sony Computer Entertainment America LLC.

20. Upon information and belief, Sony Computer Entertainment America LLC is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Sony Computer Entertainment America LLC claims as its principal place of business, 919 E. Hillsdale Blvd., Foster City, California 94404-2112. Sony Computer Entertainment America LLC has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Sony Computer Entertainment America LLC is a subsidiary of Sony Computer Entertainment Inc.

21. Upon information and belief, STMicroelectronics N.V. is a Swiss corporation that claims as its principal place of business, 39, Chemin du Champ des Filles, Plan-Les-Outes, CH

1228, Geneva, Switzerland. STMicroelectronics N.V. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, STMicroelectronics N.V. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, STMicroelectronics, Inc.

22. Upon information and belief, STMicroelectronics, Inc. is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, STMicroelectronics, Inc. claims as its principal place of business, 1310 Electronics Drive, Carrollton, Texas 75006. STMicroelectronics, Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information STMicroelectronics, Inc. is a subsidiary of STMicroelectronics N.V.

23. Upon information and belief, Toshiba Corporation is a Japanese corporation that claims as its principal place of business, 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan. Toshiba Corporation has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Toshiba Corporation has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by directing and/or controlling the actions of its subsidiary, Toshiba America, Inc.

24. Upon information and belief, Toshiba America, Inc. is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Toshiba America, Inc. claims as its principal place of business, 1251 Avenue of the Americas, Suite 4110, New York, New York 10020. Toshiba America, Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Toshiba America, Inc. is a subsidiary of Toshiba Corporation.

25. Upon information and belief, Toshiba America Electronic Components, Inc. is a California corporation that claims as its principal place of business, 19900 MacArthur Blvd., Suite 400, Irvine, California 92612. Toshiba America Electronic Components, Inc. has already appeared through counsel of record and answered the Second Amended Complaint. Upon information and belief, Toshiba America Electronic Components, Inc. is a subsidiary of Toshiba America, Inc. Upon information and belief, Toshiba America Electronic Components, Inc. has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware by being directed and/or controlled by its parent, Toshiba America, Inc.

26. Upon information and belief, ON Semiconductor Corporation is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, ON Semiconductor claims as its principal place of business, 5005 East McDowell Road,

Phoenix, Arizona 85008. ON Semiconductor Corporation has already appeared through counsel of record and answered the Second Amended Complaint.

27. Upon information and belief, Zoran Corporation is incorporated under the laws of the State of Delaware, has conducted and regularly conducts business within this District, has purposefully availed itself of the privileges of conducting business in this District, and has sought protection and benefit from the laws of the State of Delaware. Upon information and belief, Zoran Corporation claims as its principal place of business, 1390 Kifer Road, Sunnyvale, California 94086. Zoran Corporation has already appeared through counsel of record and answered the Second Amended Complaint.

JURISDICTION AND VENUE

28. This action arises under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*, including 35 U.S.C. §§ 271, 281, 283, 284, and 285. This Court has subject matter jurisdiction over this case for patent infringement under 28 U.S.C. §§ 1331 and 1338(a).

29. As further detailed herein, this Court has personal jurisdiction over each Defendant. Each Defendant has conducted and regularly conducts business within the United States and this District. Each Defendant has purposefully availed itself of the privileges of conducting business in the United States, and more specifically in this District. Each Defendant has sought protection and benefit from the laws of the State of Delaware by incorporating in the State of Delaware, incorporating a subsidiary in the State of Delaware, and/or by placing infringing products into the stream of commerce through an established distribution channel with the expectation and/or knowledge that they will be purchased by consumers in this District. Plaintiffs' causes of action arise directly from Defendants' business contacts and other activities in this District.

30. Each Defendant, directly or through intermediaries (including distributors, retailers, and others), subsidiaries, alter egos, and/or agents, ships, distributes, offers for sale,

and/or sells its products in the United States and this District. Each Defendant has purposefully and voluntarily placed one or more of its infringing products, as described below, into the stream of commerce with the expectation and/or knowledge that they will be purchased by consumers in this District. Each Defendant knowingly and purposefully ships infringing products into this District through an established distribution channel. These infringing products have been and continue to be purchased by consumers in this District. Upon information and belief, each Defendant has committed the tort of patent infringement in this District, has contributed to patent infringement in this District, and/or has induced others to commit patent infringement in this District.

31. Venue is proper in this Court under 28 U.S.C. §§ 1391(b), (c), and (d), as well as 28 U.S.C. § 1400(b), in that, upon information and belief, each Defendant has committed acts within this judicial District giving rise to this action and does business in this District, including but not limited to making sales in this District, providing service and support to their respective customers in this District, and/or operating an interactive website that is available to persons in this District, which website advertises, markets, and/or offers for sale infringing products.

BACKGROUND

A. The Patents-In-Suit.

32. U.S. Patent No. 5,030,853, titled “High Speed Logic and Memory Family Using Ring Segment Buffer,” (“the ’853 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on July 9, 1991, after full and fair examination. Albert W. Vinal is the sole inventor listed on the ’853 patent, which he assigned to Thunderbird Technologies, Inc. (“Thunderbird”) A reexamination certificate for the ’853 patent issued on February 16, 1993, and a second reexamination certificate for the ’853 patent issued on July 20, 2010. A true and correct copy of the ’853 patent as re-examined is attached as **Exhibit A** and made a part hereof.

33. U.S. Patent No. 5,391,949, titled “Differential Latching Inverter Circuit,” (“the ’949 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on February 21, 1995, after full and fair examination. Albert W. Vinal is the sole inventor listed on the ’949 patent, which he assigned to Thunderbird. A true and correct copy of the ’949 patent is attached as **Exhibit B** and made a part hereof.

34. U.S. Patent No. 5,247,212, titled “Complementary Logic Input Parallel (CLIP) Logic Circuit Family,” (“the ’212 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on September 21, 1993, after full and fair examination. Albert W. Vinal is the sole inventor listed on the ’212 patent, which he assigned to Thunderbird. A true and correct copy of the ’212 patent is attached as **Exhibit C** and made a part hereof.

35. U.S. Patent No. 5,001,367, titled “High Speed Complementary Field Effect Transistor Logic Circuits,” (“the ’367 patent”) was duly and legally issued by the U.S. Patent and Trademark Office on March 19, 1991, after full and fair examination. Albert W. Vinal is the sole inventor listed on the ’367 patent, which he assigned to Thunderbird. A true and correct copy of the ’367 patent is attached as **Exhibit D** and made a part hereof.

36. Albert W. Vinal, the sole inventor of the ’853 patent, the ’949 patent, the ’212 patent, and the ’367 patent (collectively the “patents-in-suit”), is a named inventor on over eighty (80) U.S. patents.

37. In 1989, Mr. Vinal founded Thunderbird. In total, Mr. Vinal authored twenty-nine (29) patents on fundamental design techniques for high-speed memories and high-performance transistor design, including the patents-in-suit. Mr. Vinal’s high-speed memory designs include fundamental improvements to circuit and associated transistor design, and his inventions have become common in high-speed logic circuits.

38. Mr. Vinal's fundamental designs are widely used in high-speed circuits, and improve the speed, power consumption, and noise immunity of digital CMOS based integrated circuits. These designs include improvements to circuit and associated transistor designs that have become fundamental building blocks for a huge variety of products because the designs are easily transferable to multiple integrated circuit families and applications through design reuse strategies, which enable design teams to significantly shorten design cycles and reduce research and development costs. Mr. Vinal's design techniques have enabled the industry to achieve significant performance advantages across several kinds of integrated circuits including: microprocessors, microcontrollers, programmable logic, digital signal processors ("DSPs"), application-specific integrated circuits ("ASICs"), system on chips ("SoCs"), SDRAM (DDR, DDR2, and DDR3), NOR flash, SRAM, microelectromechanical systems ("MEMS") devices, and more.

39. On June 19, 2007, Thunderbird assigned HSM Portfolio LLC all of the right, title, and interest in the patents-in-suit, including the exclusive, worldwide right to sue and collect for its own use and benefit all claims for damages by reason of past infringement or use of the patents-in-suit, subject to then-existing licenses.

40. On June 19, 2007, HSM Portfolio LLC granted Technology Properties Limited ("TPL") an exclusive, worldwide, and perpetual license with respect to those rights which enable and/or facilitate the management, development, and commercialization of the patents-in-suit. Thereafter, TPL's licensing division, Alliacense Limited ("Alliacense"), began a licensing program for the patents-in-suit as part of its "Fast Logic Portfolio."

B. Defendants' Infringing Conduct.

41. Upon information and belief, Defendants collectively make, use, offer to sell, and/or sell within, and/or import into the United States semiconductor devices that utilize the fundamental technologies covered by the patents-in-suit. Upon information and belief, the

infringing semiconductor devices include, but are not limited to, processors such as A/D converters, codecs, digital video cable equalizers, field programmable gate (“FPG”) arrays, graphics processors, image sensors, integrated circuits (“IC”), microcontroller units (“MCU”), radio frequency (“RF”) transceivers, system-in-packages, and voltage regulators. Upon information and belief, the semiconductor devices also include, but are not limited to, memory devices such as column drivers, synchronous dynamic random access memory (“SDRAM”), and flash memory.

42. Defendants’ infringing semiconductor devices incorporate the fundamental inventions covered by the patents-in-suit to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of these semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on these semiconductor devices and/or products containing these semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of these semiconductor devices cannot disable the infringing features of these semiconductor devices. The accused semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of these semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.

43. Certain Defendants, including, but not limited to, Fujitsu, AMD, SanDisk, Sony, and Toshiba, further infringe the patents-in-suit by incorporating these semiconductor devices into products that are made, used, offered for sale, and/or sold within, and/or imported into the United States, including this District. Upon information and belief, third-party manufacturers incorporate Defendants’ infringing semiconductor devices into products that are made, used, offered for sale,

and/or sold within, and/or imported into the United States, including this District. Upon information and belief, third-party distributors purchase Defendants' infringing semiconductor devices for sale or importation into the United States, including this District. Upon information and belief, third-party consumers use Defendants' semiconductor devices and products containing Defendants' semiconductor devices in the United States, including this District.

C. Defendants' Actual Notice of Infringing Conduct.

1. Plaintiffs' Notice to Fujitsu.

44. On March 10, 2008, Plaintiffs' representative, Carl Silverman, Vice President of Licensing at Alliacense, contacted Katoh Masanobu, Corporate VP and President Law & Intellectual Property at Fujitsu, by letter, which invited Fujitsu to take a license to Plaintiffs' Fast Logic Portfolio. Mr. Silverman's March 10 letter enclosed exemplary claim charts for 27 Fujitsu products, including the Notebook Lifebook Q2010 and Lifebook T4215 Convertible Notebook, each reading one or more claims of the '949 patent on the identified products, and a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents. Mr. Silverman noted that the attached claim charts were exemplary only and further placed Fujitsu on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

45. On April 9, 2008, Toru Teraoka, Senior Director, Industrial Relations Division of Law & Intellectual Property Unity at Fujitsu, confirmed that Fujitsu had received Mr. Silverman's March 10 letter and the enclosed claim charts.

46. On numerous subsequent occasions, including April 17, April 21, July 10, and July 14, 2008, Plaintiffs' representatives had follow-up communications with Fujitsu to discuss licensing the Fast Logic Portfolio.

47. On August 13, 2008, Mr. Silverman responded via letter to Mr. Teraoka's second July 14 facsimile. Mr. Silverman again offered to have an early introductory meeting with Fujitsu. Further, Mr. Silverman noted that the Fast Logic Portfolio applies to Fujitsu's digital products, including memory and/or microprocessors, such as Fujitsu's stand-alone and embedded memories. In particular, Mr. Silverman identified Fujitsu's SoCs, microprocessors, microcontrollers, and most memory types. Mr. Silverman enclosed a second set of exemplary claim charts for 33 Fujitsu products, including the Notebook Lifebook Q2010, Laptop Hard Drive MAV2036RC, which contains Fujitsu MBM29LV400TC flash memory, Notebook Lifebook A3210, Notebook Lifebook S2210, Lifebook T4215 Convertible Notebook, Primergy RX220 Rack Mount Server, Primergy Econel 230R Server, and Primergy RX330 Server, each reading one or more claims of the '949 or '212 patents on the identified products. Mr. Silverman noted that the identified products were exemplary only and that Fujitsu's other semiconductor-based products infringed the Fast Logic Portfolio and therefore required a license.

48. On August 21, 2008, Mr. Teraoka confirmed that Fujitsu had received Mr. Silverman's April 13 letter and the enclosed claim charts.

49. On numerous subsequent occasions, including September 18, September 25, September 29, October 10, 2008, and March 27, 2009, Plaintiffs' representatives had follow-up communications with Fujitsu to discuss licensing the Fast Logic Portfolio.

50. On April 15, 2009, Mr. Silverman sent Mr. Teraoka another follow-up letter and enclosed revised claim charts for 11 Fujitsu products, including the Notebook Lifebook A3210, Notebook Lifebook P1620, Notebook Lifebook Q2010, Notebook S2210, Notebook Hard Drive MAV2036RC, Notebook Lifebook T4215 Convertible, Server Primergy Econel 230R, Server Primergy RX220, and Server Primergy RX330, each reading one or more claims of the '949 or

'212 patents on the identified products. Mr. Silverman noted that the identified products were exemplary only and that Fujitsu's other semiconductor-based products infringed the Fast Logic Portfolio and therefore required a license.

51. On April 30, 2009, Mr. Teraoka confirmed that Fujitsu had received Mr. Silverman's April 15 letter and the enclosed claim charts.

52. On May 5, 2009, Plaintiffs' representatives again contacted Fujitsu in an attempt to discuss licensing the Fast Logic Portfolio.

53. Despite more than a year of communications and specific notice of its infringement of the patents-in-suit, Fujitsu's representatives never met to discuss the terms of an appropriate license to the Fast Logic Portfolio. And, despite having full knowledge of the patents-in-suit and its infringement, Fujitsu intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. Fujitsu did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

2. Plaintiffs' Notice to AMD.

54. On March 26, 2008, Mr. Silverman contacted Harry Wolin, Senior Vice President & Corporate Secretary at AMD, via letter to provide a background of the Fast Logic Portfolio and present AMD with an opportunity to take an early license. Mr. Silverman enclosed an exemplary claim chart for AMD's A29LV160DT, reading one or more claims of the '212 patent on the identified product, and a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents. Mr. Silverman noted that the analysis was exemplary only and further placed AMD on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

55. On March 31, 2008, Mr. Wolin confirmed that AMD had received Mr. Silverman's March 26 letter and the enclosed claim charts.

56. In an e-mail dated April 1, 2008, Mr. Silverman emphasized that the claim analysis was exemplary only and that AMD's other semiconductor-based products, including DRAM (SDRAM, DDR, DDRII), SRAM, and Flash, as well as logic products, infringed the Fast Logic Portfolio and therefore required a license. Further, since several of the patents applied to basic logic circuits, such as clock circuitry, the Fast Logic Portfolio also applied to AMD's processors and graphics products. Mr. Silverman also provided a list of AMD products that infringed one or more of the Fast Logic Patents, including, but not limited to, the following: Second Generation AMD Opteron Processor – 1 MB of embedded SRAM; Third Generation AMD Opteron Processor – 512 KB of embedded SRAM; AMD Athlon Processor – 512 KB of SRAM (42 products), 1 MB of embedded SRAM (12 products); AMD Athlon 654FX – 1 MB of embedded SRAM; AMD Athlon X2 Dual-Core – 512 KB of embedded SRAM (33 products), 1 MB of embedded SRAM (14 products); AMD Phenom X3 Triple-Core – 1 MB of embedded SRAM; AMD Phenom X4 Quad-Core – 512 KB of embedded SRAM; AMD Sempron – 128 KB of embedded SRAM (15 products), 256 KB of embedded SRAM (19 products), 512 KB of embedded SRAM (2 products); AMD Mobile Sempron – 256 KB of embedded SRAM (4 products), 512 KB of embedded SRAM (1 product); and AMD Turion 64 X2 Dual-Core – 1 MB of embedded SRAM. Mr. Silverman's list also identified AMD's ATI Graphics Processing Unit (GPU) products, including, but not limited to, Radeon HD 3800 Series, Radeon HD 3600 Series, Radeon HD 3400 Series, Radeon HD 2900 Series, Radeon HD 2600 Series, and Radeon HD 2400 Series.

57. On April 22, 2008, Fenny Wongso, a Licensing Coordinator at Alliacense, contacted Mr. Wolin via letter to provide a second set of exemplary claim charts for AMD's Athlon

64 X2 5600, reading one or more claims of the '949 patent on the identified product. Ms. Wongso noted that the identified products were exemplary only and further placed AMD on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

58. On April 22, 2008, Mr. Silverman met with Mr. Wolin and Mr. Cooper and presented briefing on the Fast Logic Portfolio. As part of that briefing, Mr. Silverman detailed the basic elements of the '853, '949, '212, and '367 patents and provided AMD with a list of relevant products and business segments, including its graphics unit, and offered a license.

59. On April 23 and May 1, 2008, Plaintiffs' representatives had follow-up communications with AMD in an attempt to license the Fast Logic Portfolio.

60. On May 2, 2008, Ms. Wongso sent Mr. Wolin a letter and attaching an updated claim chart for AMD's Athlon 64 X2 5600, reading one or more claims of the '949 patent on the identified product. Ms. Wongso noted that the identified product was exemplary only and further placed AMD on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

61. Thereafter, Plaintiffs' representatives had a follow-up teleconference with AMD on May 13, 2008.

62. On May 13 and May 30, 2008, Plaintiffs' representatives had follow-up communications with AMD in an attempt to license the Fast Logic Portfolio.

63. Thereafter, Plaintiffs had a follow-up teleconference with AMD on June 16, 2008. After the call, Mr. Cooper scheduled a follow-up meeting with Mr. Silverman for July 1.

64. On June 18, June 26, June 27, July 2, and August 5, 2008, Plaintiffs' representatives had follow-up communications with AMD in an attempt to license the Fast Logic Portfolio.

65. On August 7, 2008, Plaintiffs' representatives presented updated briefing materials on the Fast Logic Portfolio during a meeting with AMD. During that meeting, Plaintiffs' representatives highlighted as relevant products not only AMD's computer processors, but also its graphics products, including AMD's ATI Radeon Graphics products.

66. On August 11, 2008, Ms. Wongso forwarded Mr. Cooper an updated set of claim charts for AMD's Athlon 64 X2 5600 and Athlon 64 X2 ADO4400IAA5DD, each reading one or more claims of the '949 or '212 patents on the identified products. Ms. Wongso noted that the identified product was exemplary only and further placed AMD on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

67. On August 13, September 4, October 15, October 21, and November 4, Plaintiffs' representatives had follow-up communications with AMD in an attempt to license the Fast Logic Portfolio.

68. Although the parties had subsequent teleconferences on November 14, 2008, and January 22, 2009, Plaintiffs did not receive a substantive response from AMD prior to filing the Original Complaint. And, despite having full knowledge of the patents-in-suit and its infringement, AMD intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. AMD did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

3. Plaintiffs' Notice to Qualcomm.

69. On March 26, 2008, Mr. Silverman contacted Donald J. Rosenberg, EVP, General Counsel, and Corporate Secretary at Qualcomm, via letter to provide a background of the Fast Logic Portfolio and present Qualcomm with an opportunity to take an early license. Mr. Silverman

enclosed an exemplary claim chart for Qualcomm's MSM6300 and MSM6500, each reading one or more claims of the '949 patent on the identified products. Mr. Silverman noted that the analysis was exemplary only and further placed Qualcomm on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

70. On March 31, April 7, April 8, June 4, June 7, July 7, July 10, August 6, August 7, and August 11, Plaintiffs' representatives had follow-up communications with Qualcomm to discuss licensing the Fast Logic Portfolio.

71. On August 12, 2008, Plaintiffs' representatives had an introductory meeting with Qualcomm regarding the Fast Logic Portfolio.

72. On August 13 and August 26, 2008, Plaintiffs' representatives had follow-up communications with Qualcomm in an attempt to license the Fast Logic Portfolio.

73. On August 27, 2008, Ms. Wongso provided Mr. Martin with an exemplary claim chart for Qualcomm's A/D Converter QSC6055, reading one or more claims of the '853 patent on the identified product. Ms. Wongso noted that the identified product was exemplary only and further placed Qualcomm on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

74. On August 27, 2008, Plaintiffs' representatives had a follow-up meeting with Qualcomm.

75. On August 28 and September 10, 2008, Plaintiffs' representatives had follow-up communications with Qualcomm in an attempt to license the Fast Logic Portfolio.

76. On September 11, 2008, Ms. Wongso provided Mr. Martin with an exemplary claim chart for Qualcomm's Baseband Processor MSM6280, reading one or more claims of the '949 patent on the identified product. Ms. Wongso noted that the identified product was exemplary

only and further placed Qualcomm on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

77. On September 11, 2008, Plaintiffs' representatives had a second follow-up meeting with Qualcomm.

78. On September 12, September 15, September 18, September 23, September 26, and September 29, 2008, Plaintiffs' representatives had follow-up communications with Qualcomm in an attempt to license the Fast Logic Portfolio.

79. On October 1, 2008, Plaintiffs' representatives had a follow-up teleconference with Qualcomm.

80. After this date, Plaintiffs received no further communications from Qualcomm prior to filing the Original Complaint. And, despite having full knowledge of the patents-in-suit and its infringement, Qualcomm intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. Qualcomm did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

4. Plaintiffs' Notice to SK Hynix.

81. On May 15, 2008, Mr. Silverman contacted Jong Gap Kim, President, Chief Executive Officer, and Director at SK Hynix, via letter to provide a background of the Fast Logic Portfolio and present SK Hynix with an opportunity to take an early license. Mr. Silverman noted that his reverse engineering showed that most of SK Hynix's semiconductor products required a license to the Fast Logic Portfolio, including SoCs, microprocessors, microcontrollers, and most memory types. Mr. Silverman enclosed a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents, and directed SK Hynix

to review the Fast Logic Portfolio, particularly identifying the '949, '212, '853, and '367 patents as exemplary.

82. On June 3, 2008, Euntae Kim, Vice President, Corporate Strategy Division at SK Hynix, confirmed by e-mail SK Hynix's receipt of Mr. Silverman's September 9 letter.

83. On June 9, June 11, and July 29, 2008, Plaintiffs' representatives had follow-up communications with SK Hynix in an attempt to license the Fast Logic Portfolio.

84. On September 9, 2008, Ms. Wongso provided Mr. Kim with exemplary claim charts for SK Hynix's 512M DDR SDRAM HY5DU12822C, 512M DDR SDRAM HY5DU12822CTP, and DDR2 SDRAM HY5PS1G831CFP-Y5, each reading one or more claims of the '853 or '949 patents on the identified products. Ms. Wongso noted that the products identified were exemplary only and further placed SK Hynix on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

85. On September 21, 2008, Mr. Kim confirmed receipt of Ms. Wongso's September 9 letter and the enclosed claim charts.

86. On September 22, September 23, October 3, October 21, and October 23, 2008, Plaintiffs' representatives had follow-up communications with SK Hynix in an attempt to license the Fast Logic Portfolio.

87. On October 28, 2008, Plaintiffs' representatives had an introductory meeting with SK Hynix regarding the Fast Logic Portfolio.

88. On November 4, November 5, November 19, November 24, December 10, and December 12, 2008, Plaintiffs' representatives had follow-up communications with SK Hynix in an attempt to license the Fast Logic Portfolio.

89. After this date, Plaintiffs received no further communications from SK Hynix prior to filing the Original Complaint. And, despite having full knowledge of the patents-in-suit and its infringement, SK Hynix intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. SK Hynix did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

5. Plaintiffs' Notice to Micron.

90. On April 11, 2008, Mr. Silverman contacted Steven R. Appleton, Chairman, President, and Chief Executive Officer at Micron, via letter to provide a background of the Fast Logic Portfolio and present Micron with an opportunity to take an early license. Mr. Silverman noted that his reverse engineering showed that most of Micron's semiconductor products required a license to the Fast Logic Portfolio. Mr. Silverman enclosed a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents.

91. On April 18, 2008, Mr. Silverman provided Mr. Appleton with exemplary claim charts for Micron's MT9T012 and DDR SDRAM MT46V32M8TG, each reading one or more claims of the '949 or '853 patents on the identified products. Mr. Silverman advised that the analysis was exemplary only and further placed Micron on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

92. On June 4, August 18, September 3, October 1, November 4, December 9, 2008, and January 12, 2009, Plaintiffs' representatives had follow-up communications with Micron in an attempt to license the Fast Logic Portfolio.

93. On February 17, 2009, Mr. Silverman forwarded Roderic W. Lewis, Vice President of Legal Affairs and General Counsel at Micron, exemplary claim charts for Micron's 256M DDR

SDRAM MT46V16M16TG-75B and 1G DDR3 SDRAM MT41J128M8HX, each reading one or more claims of the '853 patent on the identified products.

94. On February 24, 2009, Plaintiffs' representatives had follow-up communications with Micron in an attempt to license the Fast Logic Portfolio.

95. Despite nearly one year of communications and specific notice of its infringement of the patents-in-suit, Micron's representatives never met to discuss the terms of an appropriate license to the Fast Logic Portfolio. And, despite having full knowledge of the patents-in-suit and its infringement, Micron intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. Micron did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

6. Plaintiffs' Notice to ProMOS.

96. On April 11, 2008, Mr. Silverman contacted Min-Liang Chen, Chairman and President at ProMOS, via letter to provide a background of the Fast Logic Portfolio and present ProMOS with an opportunity to take an early license. Mr. Silverman noted that his reverse engineering showed that most of ProMOS's semiconductor products required a license to the Fast Logic Portfolio. Mr. Silverman enclosed a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents.

97. On April 18, 2008, Mr. Silverman forwarded Mr. Chen an exemplary claim chart for ProMOS's DDR2 SDRAM BBOT64M8M, reading one or more claims of the '367 patent on the identified product. Mr. Silverman noted that the analysis was exemplary only and further placed ProMOS on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

98. On May 12, June 4, July 24, July 25, August 1, August 5, August 6, August 19, August 27, September 16, September 25, October 9, October 20, October 21, October 28, and December 1, 2008, Plaintiffs' representatives had follow-up communications with ProMOS in an attempt to license the Fast Logic Portfolio.

99. On December 3, 2008, Ms. Wongso forwarded ProMOS's lawyer, Alan H. MacPherson of MacPherson Kwok Chen & Heid LLP, an exemplary claim chart for ProMOS's 265M SDRAM V58C2256164SBT5, reading one or more claims of the '853 patent on the identified product. Ms. Wongso noted that the identified product was exemplary only and further placed ProMOS on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

100. On December 3, 2008, Plaintiffs' representatives met with ProMOS in San Jose to discuss the Fast Logic Portfolio.

101. On December 3 and December 5, 2008, Plaintiffs' representatives had follow-up communications with ProMOS in an attempt to license the Fast Logic Portfolio.

102. On January 22, 2009, Mr. Silverman contacted ProMOS's counsel, Edward C. Kwok of MacPherson Kwok Chen & Heid LLP, and enclosed exemplary claim charts for ProMOS's 256M DDR SDRAM V58C2256164SBT5, 512M DDR2 SDRAM BBOT64M8M-37, and DDR2 SDRAM BBOT64M8M, each reading one or more claims of the '853 or '367 patents on the identified products. Mr. Silverman noted that the identified product was exemplary only and further placed ProMOS on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

103. On January 29 and 30, 2009, Plaintiffs' representatives had follow-up communications with ProMOS in an attempt to license the Fast Logic Portfolio.

104. After this date, Plaintiffs received no further communications from ProMOS prior to filing the Original Complaint. And, despite having full knowledge of the patents-in-suit and its infringement, ProMOS intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. ProMOS did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

7. Plaintiffs' Notice to SanDisk.

105. On April 11, 2008, Mr. Silverman contacted E. Earle Thompson, Chief Intellectual Property Counsel and Senior Director at SanDisk, via letter to provide a background of the Fast Logic Portfolio and present SanDisk with an opportunity to take an early license.

106. On April 18, 2008, Mr. Silverman forwarded Mr. Thompson exemplary claim chart for SanDisk's Controller SDCE, reading one or more claims of the '949 patent on the identified product. Mr. Silverman noted that the analysis was exemplary only and further placed SanDisk on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

107. On May 12 and July 25, 2008, Plaintiffs' representatives had follow-up communications with SanDisk in an attempt to license the Fast Logic Portfolio.

108. On August 20, 2008, Ms. Wongso forwarded Mr. Thompson exemplary claim charts for SanDisk's Controller SDCE and Memory Card 128MB Secure Digital SD Card, each reading one or more claims of the '949 patent on the identified products. Ms. Wongso noted that the identified products were exemplary only and further placed SanDisk on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

109. On August 20, 2008, Plaintiffs' representatives had an introductory teleconference with SanDisk.

110. On August 22, 2008, Mr. Thompson confirmed that SanDisk had received Ms. Wongso's August 20 letter and the attached claim charts.

111. On September 8, 2008, Plaintiffs' representatives presented briefing materials on the Fast Logic Portfolio during a follow-up meeting with SanDisk.

112. On September 17, 2008, Ms. Wongso forwarded Mr. Thompson exemplary claim charts for SanDisk's 16G NAND Flash TC58NVG4D1DTG00 and 8G NAND Flash TC58NVG3D3CTG00, each reading one or more claims of the '853 patent on the identified products. Ms. Wongso noted that the identified products were exemplary only and further placed SanDisk on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

113. On November 17, November 24, and December 1, 2008, and January 7 and January 12, 2009, Plaintiffs' representatives had follow-up communications with SanDisk in an attempt to license the Fast Logic Portfolio.

114. On January 27, 2009, Mr. Silverman and Mr. Thompson had a follow-up teleconference.

115. On January 28, March 20, and March 31, 2009, Plaintiffs' representatives had follow-up communications with SanDisk in an attempt to license the Fast Logic Portfolio.

116. After this date, Plaintiffs received no further communications from SanDisk prior to filing the Original Complaint. And, despite having full knowledge of the patents-in-suit and its infringement, SanDisk intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of

the patents-in-suit. SanDisk did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

8. Plaintiffs' Notice to Sony.

117. On March 7, 2008, Mr. Silverman contacted Fumihiko Moriya, Sony's General Manager, via letter to provide a background of the Fast Logic Portfolio and present Sony with an opportunity to take an early license. Mr. Silverman enclosed an exemplary claim chart for 64 Sony products, including, but not limited to, the Color Video Printer UP-50, Digital Audio Mixer DMX-R100, Digital Printing System UPX-2000, LCD Projection TV KDF-60XBR950, Vaio Laptop PCG-N505ES, Plasma TV KDE42XBR950, Digital Color Printer UP-D70A, Multiscan Projector VPH-G90U, Camera Control Unit CCU-900, Color Video Camera BVP-570, Color Video Camera BVP-900, Color Video Camera BVP-950, Color Video Camera BVP-9500WS, Digital Betacam Camcorder DVW-707, Digital Film Imager UP-D71XR, Digital Master Switcher DVS-M1000C, Digital Multi Effects DME-3000/7000, Digital Videocassette Player DNW-65/65P, Digital Videocassette Player DNW-A30, Digital Videocassette Player DNW-A65/A65P, Digital Videocassette Recorder DNW-75/75P, Digital Videocassette Recorder DNW-A220, Digital Videocassette Recorder DNW-A28/A28P, Digital Videocassette Recorder DNW-A75, Digital Videocassette Recorder MSW-A2000, DME Switcher DFS-700A, Film Scanner UY-S90, HD Digital Multi Effects HDME-7000, HD Digital Video Switcher HDS-7000, Digital Video Switcher HDS-7150, HD Digital Videocassette Recorder HDW-250, HD Digital Videocassette Recorder HDW-F500, HD-SD Down Converter Board with Audio HKPF-525AV, Master Setup Unit MSU-700A, Master Setup Unit MSU-750, Multi Access Video and Audio Server MAV-70, Multi Access Video Disk Recorder MAV-555, Multi Bit Rate Routing Switcher HDS-X3400, Multimedia Terminal PCS-6000, Remote Control Unit RM-B150, Sampling Digital Reverb DRE-

S777, SDTV Non-Linear Production System DMW-S01NL, Telecine Film Sound Processor BKFV-500, Telecine Log Data Processor BKFV-300, Videocassette Recorder BVW-55, XPRI Jog and Shuttle Control Panel DMWC2, HD Camcorder HDW-700A, Digital Color Printer UP-D23MD, Digital Color Printer UP-D70XR, Digital Color Video Printer UP-D21MD, and Digital Color Printer UP-D50, each reading one or more claims of the '949, '853, or '212 patents on the identified products, and a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents. Mr. Silverman noted that the analysis was exemplary only and further placed Sony on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

118. On April 1, April 2, and May 6, 2008, Plaintiffs' representatives had follow-up communications with Sony in an attempt to license the Fast Logic Portfolio.

119. On May 8, 2008, Yuichi Sekiguchi, Licensing Group 1, IP Alliance & Licensing Department at Sony, confirmed that Sony received Mr. Silverman's March 7 letter and the enclosed claim charts.

120. On July 15, August 6, August 20, August 25, August 27, October 2, October 9, October 30, November 13, November 17, November 25, and December 2, 2008, and January 19, January 28, March 10, and March 30, 2009, Plaintiffs' representatives had follow-up communications with Sony in an attempt to license the Fast Logic Portfolio.

121. On April 1, 2009, Yasuko Nakagami-Sher, a Licensing Coordinator at Alliacense, forwarded exemplary claim charts to Mr. Sekiguchi for Sony's Cell Broadband Engine CXD2964GB, 1.65GBPS NRZ Digital Video Cable Equalizer IC CXB1441R, and Graphics Processor CXB2975CGG, each reading one or more claims of the '212 or '853 patents on the identified products. Ms. Nakagami-Sher noted that the identified products were exemplary only

and further placed Sony on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

122. On April 7, May 1, May 27, June 17, July 8, and July 22, 2009, Plaintiffs' representatives had follow-up communications with Sony in an attempt to license the Fast Logic Portfolio.

123. On July 29, 2009, Ms. Nakagami-Sher forwarded exemplary claim charts to Mr. Sekiguchi for Sony's Game Console PlayStation 3, reading one or more claims of the '853 and '212 patents on the identified product. Ms. Nakagami-Sher noted that the identified product was exemplary only and further placed Sony on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

124. On July 30, August 30, August 31, September 23, October 20, November 5, December 2, and December 23, 2009, January 21, January 29, February 11, February 15, February 16, March 12, April 1, April 22, June 8, July 6, August 5, August 15, August 16, August 17, September 17, September 29, September 30, November 3, November 15, November 30, December 22, and December 24, 2010, and January 3, January 25, February 24, March 24, April 22, and May 20, 2011, Plaintiffs' representatives had follow-up communications with Sony in an attempt to license the Fast Logic Portfolio.

125. Despite over three years of communications and specific notice of its infringement of the patents-in-suit, Sony's representatives never met to discuss the terms of an appropriate license to the Fast Logic Portfolio. And, despite having full knowledge of the patents-in-suit and its infringement, Sony intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. Sony did so with an objectively high likelihood that its actions constituted

infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

9. Plaintiffs' Notice to STMicro.

126. On May 16, 2008, Mr. Silverman contacted Carlo Bozotti, President, Chief Executive Officer, and Chairman of the Executive Committee at STMicro, to provide a background of the Fast Logic Portfolio and present STMicro with an opportunity to take an early license. Mr. Silverman noted that reverse engineering showed that most of STMicro's semiconductor products required a license to the Fast Logic Portfolio, including SoCs, microprocessors, microcontrollers, and most memory types. Mr. Silverman directed STMicro to review the Fast Logic Portfolio and particularly identified the '949, '212, '853, and '367 patents as exemplary.

127. On June 13, 2008, Pierre Ollivier, Corporate Vice President and General Counsel at STMicro, acknowledged receipt of Mr. Silverman's May 16 letter.

128. On July 24, and August 4, 2008, Plaintiffs' representatives had follow-up communications with STMicro in an attempt to license the Fast Logic Portfolio.

129. On August 15, 2008, Mr. Silverman provided an exemplary product list that required a license to the Fast Logic Portfolio, including, but not limited to, STM8S, ST6, ST7, μ PSD, ST10, STM32, STR7, STR9, ST19, ST21, ST23, ST32, M48T02, M48T08, M48T08Y, M48T12, M48T128Y, M48T129V, M48T129Y, M48T18, M48T35, M48T35AV, M48T35Y, M48T37V, M48T37Y, M48T512Y, M48T58, M48T58Y, M48T86, M440T1MV, M48T201V, M48T201Y, M48T212V, M48Z02, M48Z08, M48Z12, M48Z128, M48Z128Y, M48Z129V, M48Z18, M48Z2M1V, M48Z2M1Y, M48Z32V, M48Z35, M48Z35AV, M48Z35Y, M48Z512A, M48Z512AY, M48Z58, M48Z58Y, STA013, STA016A, STA015, STA016T, STA310, STA027, STA330, TDA7590, and STA331.

130. On September 26, 2008, Plaintiffs' representatives had follow-up communications with STMicro in an attempt to license the Fast Logic Portfolio.

131. On December 2, 2008, Ms. Wongso forwarded Mr. Ollivier exemplary claim charts for STMicro's CMOS Image Sensor S550B1A and 32M Dual Block Flash M59DR032A, each reading one or more claims of the '853 patent on the identified products. Ms. Wongso noted that the identified products were exemplary only and further placed STMicro on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

132. On December 3, 2008, and February 2, 2009, Plaintiffs' representatives had follow-up communications with STMicro in an attempt to license the Fast Logic Portfolio.

133. Despite over nearly one year of communications and specific notice of its infringement of the patents-in-suit, STMicro's representatives never met to discuss the terms of an appropriate license to the Fast Logic Portfolio. And, despite having full knowledge of the patents-in-suit and its infringement, STMicro intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. STMicro did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

10. Plaintiffs' Notice to Toshiba.

134. On June 16, 2008, Mr. Silverman contacted Hiroshi Miyauchi, Toshiba's General Manager, Intellectual Property Division, via letter to provide a background of the Fast Logic Portfolio and present Toshiba with an opportunity to take an early license. Mr. Silverman enclosed exemplary claim charts for Toshiba's Color Television 40WH08G, 40WH08B, Laptop Tecra A6-EZ6411, and e-STUDIO 163/203, each reading one or more claims of the '212 patent on the identified products. Mr. Silverman noted that the analysis was exemplary only and further placed

Toshiba on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

135. On July 7, 2008, Katsuhiko Mashimo confirmed that Toshiba had received Mr. Silverman's June 16 letter and enclosed claim charts.

136. On July 24, July 30, July 31, September 5, and September 8, 2008, Plaintiffs' representatives had follow-up communications with Toshiba in an attempt to license the Fast Logic Portfolio.

137. On September 17, 2008, Masako King, a Licensing Coordinator at Alliacense, forwarded Mr. Mashimo exemplary claim charts for Toshiba's 16G NAND Flash TC58NVG4D1DTG00 and 8G NAND Flash TC58NVG3D3CTG00, each reading one or more claims of the '853 patent on the identified products. Ms. King noted that the identified products were exemplary only and further placed Toshiba on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

138. On September 24, 2008, Plaintiffs' representatives had an introductory meeting with Toshiba.

139. On September 29, September 30, October 3, October 14, October 23, October 27, and November 17, 2008, Plaintiffs' representatives had follow-up communications with Toshiba in an attempt to license the Fast Logic Portfolio.

140. On December 2, 2008, Plaintiffs' representatives had a follow-up meeting with Toshiba to discuss a license to the Fast Memory Portfolio.

141. On December 19, 2008, Eiko Murakami, a Licensing Coordinator at Alliacense, forwarded Mr. Mashimo exemplary claim charts for 24 Toshiba products, including, but not limited to, the Toshiba Color Television 40WH08G, 40WH08B, Color TV MW20FM3, Color TV

MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, Mobile Phone 904T, Mobile Phone A5501T, Laptop Tecra A6-EZ6411, Notebook Satellite A200 Series, Notebook Satellite A210, Notebook Satellite A300 Series, Notebook Satellite P300 Series, Projection Television 46HM94/52HM94/62HM94, Projection TV 52HMX94/62HMX94, and Toshiba e-STUDIO 163/203, each reading one or more claims of the '212, '949, or '367 patents on the identified products. Ms. Murakami noted that the identified products were exemplary only and further placed Toshiba on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

142. On January 5, January 9, January 14, January 22, January 23, January 26, January 27, February 19, and March 19, 2009, Plaintiffs' representatives had follow-up communications with Toshiba in an attempt to license the Fast Logic Portfolio.

143. On April 1, 2009, Ms. Nakagami-Sher forwarded Mr. Mashimo an exemplary claim chart for Toshiba's 16G NAND Flash TC58NVGD1DTG00, reading one or more claims of the '853 patent on the identified product. Ms. Nakagami-Sher noted that the identified product was exemplary only and further placed Toshiba on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

144. On May 1, May 4, May 27, May 28, June 19, June 25, July 2, July 5, and July 6, 2009, Plaintiffs' representatives had follow-up communications with Toshiba in an attempt to license the Fast Logic Portfolio.

145. On August 3, 2009, Ms. Nakagami-Sher forwarded Mr. Mashimo exemplary claim charts for 32 Toshiba products, including, but not limited to, the Color TV 40WH08G, 40WH08B,

Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, Hard Drive MK3008GAL, Hard Drive MK4025GAS, HD LCD TV 32HL95, Mobile Phone 904T, Mobile Phone A5501T, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite P300, Notebook Tecra A6-EZ6411, Projection Television 46HM94/52HM94/62HM94, Projection TV 52HMX94/62HMX94, Digital Photocopier e-STUDIO 163/203, 16G NAND Flash TC58NVG4D1DTG00, and 8G NAND Flash TC58NVG3D3CTG00, each reading one or more claims of the '853, '212, '949, or '367 patents on the identified products. Ms. Nakagami-Sher noted that the identified products were exemplary only and further placed Toshiba on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

146. On August 7, August 11, August 12, August 17, August 18, August 27, August 30, September 1, September 3, September 11, September 28, September 29, October 6, October 22, November 3, November 8, November 9, November 16, November 23, November 25, November 29, and December 4, 2009, Plaintiffs' representatives had follow-up communications with Toshiba in an attempt to license the Fast Logic Portfolio.

147. On December 7, 2009, Ms. Nakagami-Sher forwarded Mr. Mashimo exemplary claim charts for 39 Toshiba products, including, but not limited to, Color TV 40WH08G, 40WH08B, Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video

Player and Cassette Recorder SD-V280, Hard Drive MK3008GAL, Hard Drive MK4025GAS, HD LCD TV 32HL95, Mobile Phone 904T, Mobile Phone A5501T, Mobile Phone Protégé 910, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite L300D-245, Notebook Satellite P300, Notebook Tecra A6-EZ6411, Projection Television 46HM94/52HM94/62HM94, Projection TV 52HMX94/62HMX94, Digital Photocopier e-STUDIO 163/203, 16G NAND Flash TC58NVG4D1DTG00, 8G NAND Flash TC58NVG3D3CTG00, and 32-bit RISC MCU TMP19A43FDXBG, each reading one or more claims of the '853, '212, '949, or '367 patents on the identified products. Ms. Nakagami-Sher noted that the identified products were exemplary only and further placed Toshiba on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

148. On January 8, January 12, February 3, February 26, March 26, March 29, April 8, April 22, April 26, May 6, May 24, June 25, July 23, August 5, August 10, September 9, September 12, October 18, October 22, November 19, and December 17, 2010, and January 6, January 10, January 25, February 6, February 7, February 9, and February 10, 2011, Plaintiffs' representatives had follow-up communications with Toshiba in an attempt to license the Fast Logic Portfolio.

149. After this date, Plaintiffs received no further communications from Toshiba prior to filing the Original Complaint. And, despite having full knowledge of the patents-in-suit and its infringement, Toshiba intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. Toshiba did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

11. Plaintiffs' Notice to ON Semiconductor.

150. On May 15, 2008, Mr. Silverman contacted Keith D. Jackson, President, Chief Executive Officer, and Director at ON Semiconductor, to provide a background of the Fast Logic Portfolio and present ON Semiconductor with an opportunity to take an early license. Mr. Silverman noted that reverse engineering showed that most of ON Semiconductor's semiconductor products required a license to the Fast Logic Portfolio, including SoCs, microprocessors, microcontrollers, and most memory types. Mr. Silverman enclosed a data disk containing the full text of all of the patents in the Fast Logic Portfolio, including the '853, '949, '212, and '367 patents and directed ON Semiconductor to review the Fast Logic Portfolio, particularly identifying the '949, '212, '853, and '367 patents as exemplary.

151. On October 22, October 31, and November 21, 2008, Plaintiffs' representatives had follow-up communications with ON Semiconductor in an attempt to license the Fast Logic Portfolio.

152. On November 25, 2008, Kathryn Tsigotis, Vice President and Chief Intellectual Property Counsel at ON Semiconductor, contacted Mr. Silverman and confirmed the receipt of Mr. Silverman's May 15 letter.

153. On December 1, 2008, Plaintiffs' representatives had follow-up communications with ON Semiconductor in an attempt to license the Fast Logic Portfolio.

154. On December 18, 2008, Mr. Silverman forwarded Ms. Tsigotis an exemplary list of ON Semiconductor's products that required a license to the Fast Logic Portfolio, including, but not limited to, the OW344-004-XTP, OW344-005-XTP, OW588-002-XUA, OW633-001-XTP, OW888-002-XTP, CAT28F001, CAT28F512, CAT28F010, CAT28F020, CAT22C10, CAT24C44, EIA-232D, EIA-422-A, EIA-423, EIA-423-A, A5191HRTLGLG-XTD, A5191HRTLGLG-XTP, A5191HRTPG-XTD, A5191HRTPG-XTP, AMIS30600LINI1G, AMIS30600LINI1RG,

AMIS30660CANH2RG, AMIS30660CANH6G, AMIS30660CANH6RG,
AMIS30663CANG2G, AMIS30663CANG2RG, AMIS41682CANM1G,
AMIS41682CANM1RG, AMIS41683CANN1G, AMIS41683CANN1RG, AMIS42665TJAA1G,
AMIS42665TJAA1RG, AMIS42665TJAA3L, AMIS42665TJAA3RL, AMIS42665TJAA6G,
AMIS42665TJAA6RG, AMIS42671ICAB1G, AMIS42671ICAB1RG, AMIS42673ICAG1G,
AMIS42673ICAG1RG, AMIS42675ICAA1G, AMIS42675ICAA1RG, AMIS42700WCGA4H,
AMIS42700WCGA4RH, AMIS42770ICAW1G, AMIS42770ICAW1RG, AMIS-49200-XTD,
AMIS-49200-XTP, AMIS-49250-XTD, AMIS-49250-XTP, JLC1562BFELG, JLC1562BFG,
JLC1562BNG, MC1488D, MC1488DG, MC1488DR2, MC1488DR2G, MC1488MELG,
MC1488MG, MC1488P, MC1488PG, MC1489AD, MC1489ADG, MC1489ADR2,
MC1489ADR2G, MC1489AMELG, MC1489AMG, MC1489AP, MC1489APG, MC1489D,
MC1489DG, MC1489DR2, MC1489DR2G, MC1489MELG, MC1489MG, MC1489P,
MC1489PG, MC26LS30D, MC26LS30DG, MC26LS30DR2, MC26LS30DR2G, MC3488AD,
MC3488ADR2, MC3488ADR2G, MC3488AP1, MC3488AP1G, MC75172BDW,
MC75172BDWG, MC75172BDWR2, MC75172BDWR2G, MC75174BDW, MC75174BDWG,
MC75174BDWR2, MC75174BDWR2G, MC75174BP, MC75174BPG, NCP1080DEG,
NCP1080DER2G, NCP1081DEG, NCP1081DER2G, NCP1082DEG, NCP1082DER2G,
NCP1083DEG, NCP1083DER2G, NCV7321D10G, NCV7321D10R2G, NCV7341D21G,
NCV7341D21R2G, NCV7356D1G, NCV7356D1R2G, NCV7356D2G, NCV7356D2R2G,
NCV7361ADG, and NCV7361ADR2G. Mr. Silverman again directed Ms. Tsirigotis to review the
'949, '212, '853, and '367 patents as exemplary.

155. On December 19, 2008, and January 7, 2009, Plaintiffs' representatives had follow-up communications with ON Semiconductor in an attempt to license the Fast Logic Portfolio.

156. On January 15, 2009, Ms. Wongso forwarded Ms. Tsirigotis an exemplary claim chart for ON Semiconductor's Low Dropout Voltage Regulator NCV85085, reading one or more claims of the '853 patent on the identified product. Ms. Wongso noted that the identified product was exemplary only and further placed ON Semiconductor on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

157. On January 21, 2009, Plaintiffs' representatives had follow-up communications with ON Semiconductor in an attempt to license the Fast Logic Portfolio.

158. Despite over eight months of communications and specific notice of its infringement of the patents-in-suit, ON Semiconductor's representatives never met to discuss the terms of an appropriate license to the Fast Logic Portfolio. And, despite having full knowledge of the patents-in-suit and its infringement, ON Semiconductor intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. ON Semiconductor did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

12. Plaintiffs' Notice to Zoran.

159. On January 12, 2009, Mr. Silverman contacted Levy Gerzberg, President and Chief Executive Officer at Zoran, to provide a background of the Fast Logic Portfolio and present Zoran with an opportunity to take an early license. Mr. Silverman enclosed an exemplary claim chart for Zoran's Processor ZR36762PQC, reading one or more claims of the '853 patent on the identified product. Mr. Silverman noted that the analysis was exemplary only and further placed Zoran on notice that its other semiconductor based-products infringed the Fast Logic Portfolio and therefore required a license.

160. Despite this specific notice of its infringement of the patents-in-suit, Zoran's representatives never met to discuss the terms of an appropriate license to the Fast Logic Portfolio. And, despite having full knowledge of the patents-in-suit and its infringement, Zoran intentionally continued to make, use, offer for sale, sell in the United States, and/or import into the United States, semiconductor devices that infringe one or more claims of the patents-in-suit. Zoran did so with an objectively high likelihood that its actions constituted infringement of the patents-in-suit, and the objectively-defined risk was either known or so obvious that it should have been known.

COUNT I

Patent Infringement of U.S. Patent No. 5,030,853

161. Plaintiffs repeat and re-allege each and every allegation of paragraphs 1-160 as though fully set forth herein.

162. The '853 patent is valid and enforceable.

163. Fujitsu, AMD, Qualcomm, Elpida, SK Hynix, Micron, ProMOS, SanDisk, Sony, STMicro, Toshiba, ON Semiconductor, and Zoran have at no time, either expressly or impliedly, been licensed under the '853 patent.

164. Upon information and belief, to the extent any marking or notice was required by 35 U.S.C. § 287, Plaintiffs have complied with the requirements of that statute by providing actual or constructive notice to Fujitsu, AMD, Qualcomm, Elpida, SK Hynix, Micron, ProMOS, SanDisk, Sony, STMicro, Toshiba, ON Semiconductor, and Zoran of their alleged infringement. Upon information and belief, prior to July 4, 2008, no commercial products embodying the '853 patent were ever made, offered for sale, or sold within the United States with permission from, or under the authority of, Thunderbird and/or Plaintiffs. Upon information and belief, Plaintiffs surmise that any express licensees of the '853 patent have complied with the marking requirements

of 35 U.S.C. § 287 by placing a notice of the '853 patent on all goods made, offered for sale, and/or sold within, and/or imported into, the United States that embody one or more claims of that patent.

A. Fujitsu's Infringement of the '853 Patent.

165. Upon information and belief, Fujitsu has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the MBM29LV400TC and other similar semiconductor devices.

166. Upon information and belief, Fujitsu knew or should have known, or acted with willful blindness, of the '853 patent and its infringing conduct at least since August 13, 2008, when Fujitsu was formally placed on notice of its infringement. Specifically, by letter dated March 10, 2008, Plaintiffs' representative, Mr. Silverman, provided Fujitsu's representative, Mr. Masanobu, with a copy of the '853 patent and, by letter dated August 13, 2008, Mr. Silverman informed Fujitsu's representative, Mr. Teraoka, that the MBM29LV400TC and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

B. AMD's Infringement of the '853 Patent.

167. Upon information and belief, AMD has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that

include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the ATI 215CDABKA15FG Graphics Processing Unit, ATI X810480-002 Graphics Processing Unit, AM29LV160DT, and other similar semiconductor devices.

168. Upon information and belief, AMD is also liable for the direct infringement of the '853 patent by Spansion Inc. (formerly Spansion LLC and FASL LLC) ("Spansion") that occurred before December 16, 2005, the date of Spansion's initial public offering. Before December 16, 2005, Spansion was a subsidiary of AMD, with AMD owning a controlling share (60 percent) of Spansion. Upon information and belief, prior to Spansion's public offering on December 16, 2005, AMD had the right and ability to control Spansion's infringing acts and received a direct financial benefit from Spansion's infringement. Upon information and belief, prior to December 16, 2005, Spansion Inc. made, used, offered to sell, and/or sold to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the AM29LV160DT and other similar semiconductor devices.

169. Upon information and belief, AMD knew or should have known, or acted with willful blindness, of the '853 patent and its infringing conduct at least since April 1, 2008, when AMD was formally placed on notice of its infringement. Specifically, by letter dated March 26, 2008, Plaintiffs' representative, Mr. Silverman, provided AMD's representative, Mr. Wolin, with a copy of the '853 patent and informed Mr. Wolin that the AM29LV160DT and other similar products infringed one or more patents in the Fast Logic Portfolio, and by e-mail dated April 1, 2008, Mr. Silverman informed Mr. Wolin that AMD's ATI Graphics Processing Unit (GPU) products infringed one or more of the patents in the Fast Logic Portfolio.

C. Qualcomm's Infringement of the '853 Patent.

170. Upon information and belief, Qualcomm has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, and/or indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the QSC6055 A/D Converter and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Qualcomm that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the MSM6000, MSM6025, MSM6050, MSM6100, MSM6125, MSM6245, MSM6250, MSM6260, MSM6275, MSM6281, MSM6290, MSM6300, MSM6500, MSM6550, MSM6800, MSM7201, QST1000, QST1100, QST1105, QSC6085, QSC6065, QSC030, QSC6020, QSC6010, QSC1100, and Snapdragon may also infringe the '853 patent.

171. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Qualcomm's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the QSC6055 A/D Converter, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or

importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

172. Upon information and belief, Qualcomm had knowledge of the '853 patent and its infringing conduct at least since August 27, 2008, when Qualcomm was formally placed on notice of its infringement. Specifically, by letter to Qualcomm's representative, Mr. Martin, dated August 27, 2008, Plaintiffs' representative, Ms. Wongso, enclosed an exemplary claim chart for Qualcomm's QSC6055 A/D converter reading one or more claims of the '853 patent on the identified product.

173. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Qualcomm on notice of its infringement, Qualcomm has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Qualcomm's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the QSC6055 A/D Converter. Upon information and belief, based on Ms. Wongso's August 27 letter and Plaintiffs' other communications detailed in Part C above, Qualcomm does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, Qualcomm intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these

purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

174. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Qualcomm on notice of its infringement, Qualcomm has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Qualcomm's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the QSC6055 A/D Converter. Upon information and belief, Qualcomm knew, based on Ms. Wongso's August 27 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Qualcomm's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Qualcomm's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Qualcomm's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Qualcomm's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Qualcomm's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Qualcomm's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.

Similarly, Qualcomm's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

175. Upon information and belief, Qualcomm's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's August 27 letter and Plaintiffs' other communications detailed in Part C above, Qualcomm acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the QSC6055 A/D Converter, and the objectively-defined risk was either known or so obvious that it should have been known.

D. Elpida's Infringement of the '853 Patent.

176. Upon information and belief, Elpida has been directly and literally infringing under 35 U.S.C. § 271(a) and/or indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to customers and/or distributors (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the E5108AB-5C-E DDR2 SDRAM and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Elpida that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the EDJ1104BASE, EDJ1108BABG, EDJ1108BASE, EDJ1108BBSE, EDJ1116BABG, EDEJ1116BASE, EBJ21UE8BASA, EBJ21UE8BAU0, EBJ11UE6BASA, EBJ11UE6BAU0, EBJ82HF4B1RA, EBJ41HE4BAFA, EBJ41RE4BAFA, EBJ42RE8BAFA, EBJ20RE4BAFA,

EBJ21RE8BAFA, EBJ10RE8BAFA, EBJ21UE8BAFA, EBJ21UE8BAW0, EBJ21EE8BAFA, EBJ10UE8BAFA, EBJ10UE8BAW0, EBJ10EE8BAFA, EBJ10EE8BAW0, EBJ10EE8BAWA, EDE2104ABSE, EDE2108ABSE, EDE2116ABSE, EDE1104ABSE, EDE1104ACSE, EDE1108ABSE, EDE1108ACBG, EDE1108ACSE, EDE1116ABSE, EDE1116ACBG, EDE116ACSE, EDE1116ACSE-6E-E, EDE5108AGBG, EDE5108AGBG-6E-E, EDE5108AJBG, EDE5108AJSE, EDE5116AHSE, EDE5116AJBG, EDE5116AJSE, EDE2508AEBG, EDE2516AEBG, EBE81AF4ABHA, EBE82AF4A1RA, EBE41AE4ABHA, EBE41AE4ACFA, EBE41RE4ABHA, EBE41RE4ACFA, EBE20AE4ABFA, EBE20AE4ACFA, EBE20RE4ABFA, EBE20RE4ACFA, EBE21AD4AJFA, EBE21RD4AJFA, EBE10AD4AJFA, EBE10AE8ACFA, EBE10RD4AJFA, EBE10RE8ACFA, EBE51AD8AJFA, EBE51RD8AJFA, EBE41UF8ABFA, EBE41EF8ABFA, EBE21UE8ABFA, EBE21UE8ACFA, EBE21UE8ACWA, EBE21EE8ABFA, EBE21EE8ACFA, EBE21EE8ACWA, EBE10UE8ACFA, EBE10UE8ACWA, EBE11UD8AHFA, EBE11UD8AHWA, EBE11UD8AJWA, EBE10EE8ACFA, EBE10EE8ACWA, EBE11ED8AJWA, EBE51UD8AJWA, EBE51ED8AJWA, EBE41UF8ABDA, EBE21UE8ABDA, EBE21UE8ACSA, EBE21UE8ACUA, EBE11UD8AJUA, EBE11UE6ACSA, EBE11UE6ACUA, EBE52UD6AJUA, EBE81FF4ABHT, EBE82FF4A1RQ, EBE41FE4ABHD, EBE41FE4ACFT, EBE21FD4AJFT, EBE21FE8ACFT, EBE10FE8ACFT, EBE11FD8AJFT, EBE51FD8AJFT may also infringe the '853 patent.

177. Upon information and belief, Elpida has been directly and equivalently infringing under the doctrine of equivalents and/or indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to customers and/or distributors

(directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the E5108AB-5C-E DDR2 SDRAM and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Elpida that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the EDJ1104BASE, EDJ1108BABG, EDJ1108BASE, EDJ1108BBSE, EDJ1116BABG, EDEJ1116BASE, EBJ21UE8BASA, EBJ21UE8BAU0, EBJ11UE6BASA, EBJ11UE6BAU0, EBJ82HF4B1RA, EBJ41HE4BAFA, EBJ41RE4BAFA, EBJ42RE8BAFA, EBJ20RE4BAFA, EBJ21RE8BAFA, EBJ10RE8BAFA, EBJ21UE8BAFA, EBJ21UE8BAW0, EBJ21EE8BAFA, EBJ10UE8BAFA, EBJ10UE8BAW0, EBJ10EE8BAFA, EBJ10EE8BAW0, EBJ10EE8BAWA, EDE2104ABSE, EDE2108ABSE, EDE2116ABSE, EDE1104ABSE, EDE1104ACSE, EDE1108ABSE, EDE1108ACBG, EDE1108ACSE, EDE1116ABSE, EDE1116ACBG, EDE116ACSE, EDE1116ACSE-6E-E, EDE5108AGBG, EDE5108AGBG-6E-E, EDE5108AJBG, EDE5108AJSE, EDE5116AHSE, EDE5116AJBG, EDE5116AJSE, EDE2508AEBG, EDE2516AEBG, EBE81AF4ABHA, EBE82AF4A1RA, EBE41AE4ABHA, EBE41AE4ACFA, EBE41RE4ABHA, EBE41RE4ACFA, EBE20AE4ABFA, EBE20AE4ACFA, EBE20RE4ABFA, EBE20RE4ACFA, EBE21AD4AJFA, EBE21RD4AJFA, EBE10AD4AJFA, EBE10AE8ACFA, EBE10RD4AJFA, EBE10RE8ACFA, EBE51AD8AJFA, EBE51RD8AJFA, EBE41UF8ABFA, EBE41EF8ABFA, EBE21UE8ABFA, EBE21UE8ACFA, EBE21UE8ACWA, EBE21EE8ABFA, EBE21EE8ACFA, EBE21EE8ACWA, EBE10UE8ACFA, EBE10UE8ACWA, EBE11UD8AHFA, EBE11UD8AHWA, EBE11UD8AJWA, EBE10EE8ACFA, EBE10EE8ACWA, EBE11ED8AJWA,

EBE51UD8AJWA, EBE51ED8AJWA, EBE41UF8ABDA, EBE21UE8ABDA,
EBE21UE8ACSA, EBE21UE8ACUA, EBE11UD8AJUA, EBE11UE6ACSA,
EBE11UE6ACUA, EBE52UD6AJUA, EBE81FF4ABHT, EBE82FF4A1RQ, EBE41FE4ABHD,
EBE41FE4ACFT, EBE21FD4AJFT, EBE21FE8ACFT, EBE10FE8ACFT, EBE11FD8AJFT,
EBE51FD8AJFT may also infringe the '853 patent. These semiconductor devices and/or products containing these semiconductor devices perform substantially the same function as the inventions embodied in one or more claims of the '853 patent in substantially the same way to achieve the same result.

178. Upon information and belief, these semiconductor devices and/or products containing these semiconductor devices have no substantial non-infringing uses, and Elpida had knowledge of the non-staple nature of these semiconductor devices and/or products containing these semiconductor devices and the '853 patent throughout the entire period of its infringing conduct or at least by June 27, 2008, when Elpida was formally placed on notice of its infringement.

E. SK Hynix's Infringement of the '853 Patent.

179. Upon information and belief, SK Hynix has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the HY5DU12822CTP DDR SDRAM, HY5PS1G831CFP-Y5 DDR2 SDRAM, and other similar semiconductor devices, and/or

other products made, used, sold, offered for sale, or imported by SK Hynix that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent.

Upon information and belief, the HY5DU28422BT, HY5DU28422DT, HY5DU28422ET,

HY5DU281622DT, HY5DU281622ET, HY5DU56422AT, HY5DU56422BF,

HY5DU56422BLF, HY5DU56422BLT, HY5DU56422BT, HY5DU56422DF,

HY5DU56422DFP, HY5DU56422DLF, HY5DU56422DLFP, HY5DU56422DT,

HY5DU56422DTP, HY5DU56822ETP, HY5DU561622DT, HY5DU561622EFP,

HY5DU12422ALT, HY5DU12422AT, HY5DU12422BFP, HY5DU12422CFP,

HY5DU121622BT, HY5DU121622BTP, HY5DU28822BT, HY5DU28822DT,

HY5DU28822ET, HY5DU56822AF, HY5DU56822AT, HY5DU56822BF, HY5DU56822BLF,

HY5DU56822BLT, HY5DU56822BT, HY5DU56822DF, HY5DU56822DFP,

HY5DU56822DLF, HY5DU56822DLFP, HY5DU56822DT, HY5DU56822DTP,

HY5DU56822EFP, HY5DU561622AF, HY5DU561622AT, HY5DU561622DF,

HY5DU561622DFP, HY5DU561622DLF, HY5DU561622DLFP, HY5DU561622DTP,

HY5DU12822ALT, HY5DU12822AT, HY5DU12822BF, HY5DU12822BFP,

HY5DU12822BLF, HY5DU12822BLFP, HY5DU12822BLT, HY5DU12822BLTP,

HY5DU12822BT, HY5DU12822BTP, HY5DU121622ALT, HY5DU121622AT,

HY5DU121622BF, HY5DU121622BFP, HY5DU121622BLF, HY5DU121622BLFP,

HY5DU121622BLT, HY5DU121622BLTP, H5PS5142FFP, HY5PS12421CFP, H5PS5182FFP,

HY5PS12821CFP, HY5PS121621CFP, H5PS1G43EFR, HY5PG1G431CFP, HY5PS1G431CFP,

H5PS1G83EFR, HY5PG1G831CFP, HY5PS1G831CFP, H5PS1G63EFR, HY5PS1G1631CFP,

H5PS2G43MFP, HY5PS2G431CMP, H5PS2G83MFP, HY5PS2G831CMP, H5PS4G43MMP,

H5PS4G83MMP, HY5PS56821F, HY5PS561621AFP, HY5PS561621F, HY5PS12821F,

HY5PS12821FP, HY5PS121621AF, HY5PS121621AFP, HY5PS121621BFP, HY5PS121621F,
HY5PS121621FP, HY5PS561621BFP, HY5DU323222Q, HY5DU323222QP,
HY5DU281622ET, HY5DV281622DT, HY5DS283222BF, HY5DU283222AF,
HY5DU283222BF, HY5DU283222F, HY5DU283222Q, HY5DW283222AF,
HY5DW283222BF, HY5DU561622CT, HY5DS573222F, HY5DU573222AFM,
HY5DU573222F, HY5DW573222F, HY5DU121622CTP, HY5DS113222FM(P),
HY5DU113222FM, HY5DW113222FM, HY5MS5B6ALF(P), HY5MS5B2LF(P),
HY5MS7B6LF(P), HY5MS7B2LF(P), HY5DV6411622AT-F, HY5DU283222,
HY5DU281622ET-H, HY5DU283222AQ, HY5DU283222Q4, HY5DU283222BFP-33DR,
HY5DU12822AT-D43, HY5PS12821CFP-Y5, HY5PS12821CFP-S5, HY5PS12821BFP-S5,
HY5PS1G431CFP-Y5, HY5PS121621B, HY5PS561621A, HY5DU383222,
HY5DU281622ETP, HY5PS1G831CFP-S5, and HY5PS12821F-C4 may also infringe the '853
patent.

180. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase SK Hynix's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

181. Upon information and belief, SK Hynix had knowledge of the '853 patent and its infringing conduct at least since September 9, 2008, when SK Hynix was formally placed on notice of its infringement. Specifically, by letter to SK Hynix's representative, Mr. Kim, dated September 9, 2008, Plaintiffs' representative, Ms. Wongso, enclosed an exemplary claim chart for SK Hynix's 512M DDR SDRAM HY5DU12822C and DDR2 SDRAM HY5PS1G831CFP-Y5, each reading one or more claims of the '853 patent on the identified products.

182. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SK Hynix on notice of its infringement, SK Hynix has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SK Hynix's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM. Upon information and belief, based on Ms. Wongso's September 9 letter and Plaintiffs' other communications detailed in Part C above, SK Hynix does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, SK Hynix intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

183. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SK Hynix on notice of its infringement, SK Hynix has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SK Hynix's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM. Upon information and belief, SK Hynix knew, based on Ms. Wongso's September 9 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, SK Hynix's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of SK Hynix's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on SK Hynix's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of SK Hynix's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. SK Hynix's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of SK Hynix's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, SK Hynix's products containing

semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

184. Upon information and belief, SK Hynix's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's September 9 letter and Plaintiffs' other communications detailed in Part C above, SK Hynix acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM, and the objectively-defined risk was either known or so obvious that it should have been known.

185.

F. Micron's Infringement of the '853 Patent.

186. Upon information and belief, Micron has been directly under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the MT46V16M16TG-75B DDR SDRAM, MT46V32M8TG DDR SDRAM, MT41J128M8HX DDR3 SDRAM, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Micron that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the MT41J128M8JP, MT46V16M16TG-75, MT46V16M16TG-75EC, MT46V32M8P-6TG, MT46V16M16TG-6TF, MT46V16M16P-5BF,

MT46V32M16P-6T, MT46V8M16P-75D, MT46V8M16P-6T, MT46V32M16TC-75C, MT46V16M16P, MT46V8M16P-5BD, MT46V32M8TG-5BG, MT46V32M8-5B, MT46V8M16TG-6T, MT46V64M8FN-6, MT46V16M16P-6TITF, MT46V16M16-5B, MT46V8M16P-6TD, and MT46V16M16P-75LF may also infringe the '853 patent.

187. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Micron's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the MT46V16M16TG-75B DDR SDRAM, MT46V32M8TG DDR SDRAM, and MT41J128M8HX DDR3 SDRAM, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

188. Upon information and belief, Micron had knowledge of the '853 patent and its infringing conduct at least since April 18, 2008, when Micron was formally placed on notice of its infringement. Specifically, by letter to Micron's representative, Mr. Appleton, dated April 18, 2008, Plaintiffs' representative, Mr. Silverman, disclosed an exemplary claim chart for Micron's DDR SDRAM MT46V32M8TG, reading one or more claims of the '853 patent on the identified product.

189. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Micron on notice of its infringement, Micron has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Micron's semiconductor devices and/or products containing

semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the MT46V16M16TG-75B DDR SDRAM, MT46V32M8TG DDR SDRAM, and MT41J128M8HX DDR3 SDRAM. Upon information and belief, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, Micron does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, Micron intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

190. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Micron on notice of its infringement, Micron has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Micron's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the MT46V16M16TG-75B DDR SDRAM, MT46V32M8TG DDR SDRAM, and MT41J128M8HX DDR3 SDRAM. Upon information and belief, Micron knew, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of

commerce suitable for substantial non-infringing uses. Upon information and belief, Micron's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Micron's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Micron's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Micron's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Micron's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Micron's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Micron's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

191. Upon information and belief, Micron's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, Micron acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the MT46V16M16TG-75B DDR SDRAM, MT46V32M8TG DDR SDRAM, and MT41J128M8HX DDR3 SDRAM, and the objectively-defined risk was either known or so obvious that it should have been known.

G. ProMOS's Infringement of the '853 Patent.

192. Upon information and belief, ProMOS has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the BBOT64M8M-37 DDR2 SDRAM, V58C2256164SBT5 DDR SDRAM, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by ProMOS that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the V58C2128164SBI5, V58C2512164SAI5, V59C1G01808QA, V59C1G01808QB, V59C1G01168QB, V59C1256164QA, V59C1512164QAL, V59C1512404QA, V59C1512804QA, V59C1512164QA, V59C1512404QB, V59C1512804QB, V59C1512164QB, V59C1512404QC, V59C1512804QC, V59C1512164QC, V916765K24QA, V916765K24QB, V916865K28QB, V916765K24QC, V916866K28QB, V916732J24QA, V916732J24QB, V916732J24QC, V916764K24QA, V916764K24QB, V916764K24QC, V917565K24QA, V917565K24QB, V917665K28QB, V917565K24QC, V917666K28QB, V917564K24QA, V917564K24QB, V917565N24QB, V917565U24QB, V917565N24QC, V917666N28QB, V917666U28QB, V917564U24QA, V917564U24QB, V58C2128804SB, V58C2128164SB, V58C2128804SC, V58C2128164SC, V58C2128804SB, V58C2128164SB, V58C2256324SA, V58C2256404SC, V58C2256804SC, V58C2256164SC, V58C2256164SG, V58C2256804SC, V58C2256164SC, V58C2512404SA, V58C2512804SA, V58C2512164SA,

V58C2512804SB, V58C2512164SB, V58C2512804SA, V58C2512164SA, V826765K24SA, V826765K24SB, V826616J24SA, V826616J24SC, V826632K24SA, V826732J24SA, V826632K24SC, V826764K24SA, V826664K24SA, V826764K24SB, V826664K24SC, V827565K24SA, V827565K24SB, V827432K24SA, V827432K24SC, V827464K24SA, V827564K24SA, V827564K24SB, V827464K24SC, V827565N24SA, V827565N24SB, V827432U24SA, V827432U24SC, V827564U24SA, V827464N24SA, V827564U24SB, V827464N24SC, V826765G24SA, V826765G24SB, V826616B24SC, V826732B24SA, V826632B24SA, V826632B24SC, V826664G24SA, V826764B24SA, V826764B24SB, V826664G24SC, V54C3128804VBL, V54C3128164VBL, V54C3128804VCL, V54C3128164VCL, V54C3128804VB, V54C3128164VB, V54C3128804VC, V54C3128164VC, V54C3128804VB, V54C3128804VC, V54C3128164VB, V54C3128164VC, V54C3256164VDL, V54C3256404VD, V54C3256804VD, V54C3256164VD, V54C3256164VG, V54C3256804VD, V54C3256164VD, V54C365164VE, V54C465164VE, V436632S24VD, V436664S24VD, V56C1128164MC, V55C1128164MC, V55C2128164VA, V55C2128164VC, V56C1256164MG, V55C1256164MG, V55C2256164VB, V55C3256164VB, V55C3256164VG, and V55C2256164VG may also infringe the '853 patent.

193. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase ProMOS's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the BBOT64M8M-37 DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District

and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

194. Upon information and belief, ProMOS had knowledge of the '853 patent and its infringing conduct at least since December 3, 2008, when ProMOS was formally placed on notice of its infringement. Specifically, by letter to ProMOS's counsel, Mr. MacPherson, dated December 3, 2008, Plaintiffs' representative, Ms. Wongso, disclosed an exemplary claim chart for ProMOS's 265M SDRAM V58C2256164SBT5, reading one or more claims of the '853 patent on the identified product.

195. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed ProMOS on notice of its infringement, ProMOS has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase ProMOS's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the BBOT64M8M-37 DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM. Upon information and belief, based on Ms. Wongso's December 3 letter and Plaintiffs' other communications detailed in Part C above, ProMOS does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, ProMOS intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or

providing technical support, replacement parts, or services for these products to these purchasers in the United States.

196. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed ProMOS on notice of its infringement, ProMOS has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase ProMOS's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the BBOT64M8M-37 DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM. Upon information and belief, ProMOS knew, based on Ms. Wongso's December 3 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, ProMOS's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of ProMOS's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on ProMOS's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of ProMOS's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. ProMOS's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of ProMOS's semiconductor devices would be unusual, far-fetched, illusory,

impractical, occasional, aberrant, or experimental. Similarly, ProMOS's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

197. Upon information and belief, ProMOS's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's December 3 letter and Plaintiffs' other communications detailed in Part C above, ProMOS acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the BBOT64M8M-37 DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM, and the objectively-defined risk was either known or so obvious that it should have been known.

H. SanDisk's Infringement of the '853 Patent.

198. Upon information and belief, SanDisk has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the TC58NVG4D1DTG00 16G NAND Flash, TC58NVG3D4CTG00 NAND Flash, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by SanDisk that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the iNAND and MLC NAND may also infringe the '853 patent.

199. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase SanDisk's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the TC58NVG4D1DTG00 16G NAND Flash and TC58NVG3D4CTG00 NAND Flash, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

200. Upon information and belief, SanDisk had knowledge of the '853 patent and its infringing conduct at least since September 17, 2008, when SanDisk was formally placed on notice of its infringement. Specifically, by letter to SanDisk's representative, Mr. Thompson, dated September 17, 2008, Plaintiffs' representative, Ms. Wongso, disclosed an exemplary claim chart for SanDisk's 16G NAND Flash TC58NVG4D1DTG00 and 8G NAND Flash TC58NVG3D3CTG00, each reading one or more claims of the '853 patent on the identified products.

201. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SanDisk on notice of its infringement, SanDisk has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SanDisk's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the TC58NVG4D1DTG00 16G NAND Flash and TC58NVG3D4CTG00 NAND Flash. Upon information and belief, based on Ms. Wongso's

September 17 letter and Plaintiffs' other communications detailed in Part C above, SanDisk does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, SanDisk intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

202. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SanDisk on notice of its infringement, SanDisk has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SanDisk's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the TC58NVG4D1DTG00 16G NAND Flash and TC58NVG3D4CTG00 NAND Flash. Upon information and belief, SanDisk knew, based on Ms. Wongso's September 17 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, SanDisk's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon

information and belief, each and every use of SanDisk's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on SanDisk's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of SanDisk's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. SanDisk's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of SanDisk's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, SanDisk's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

203. Upon information and belief, SanDisk's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's September 17 letter and Plaintiffs' other communications detailed in Part C above, SanDisk acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the TC58NVG4D1DTG00 16G NAND Flash and TC58NVG3D4CTG00 NAND Flash, and the objectively-defined risk was either known or so obvious that it should have been known.

I. Sony's Infringement of the '853 Patent.

204. Upon information and belief, Sony has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries)

in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the CXB1441R 1.65GBPS NRZ Digital Video Cable Equalizer IC, CXB2975CGG Graphics Processor, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Sony that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the LCD Projection TV KDF-60XBR950, Plasma TV KDE42XBR950, Game Console PlayStation 3, and other similar products.

205. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Sony's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the CXB1441R 1.65GBPS NRZ Digital Video Cable Equalizer IC, CXB2975CGG Graphics Processor, LCD Projection TV KDF-60XBR950, Plasma TV KDE42XBR950, and Game Console PlayStation 3, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

206. Upon information and belief, Sony had knowledge of the '853 patent and its infringing conduct at least since April 1, 2009, when Sony was formally placed on notice of its infringement. Specifically, by letter to Sony's representative, Mr. Thompson, dated April 1, 2009, Plaintiffs' representative, Ms. Nakagami-Sher, disclosed an exemplary claim chart for Sony's

1.65GBPS NRZ Digital Video Cable Equalizer IC CXB1441R and Graphics Processor CXB2975CGG, each reading one or more claims of the '853 patent on the identified products.

207. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Sony on notice of its infringement, Sony has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Sony's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the CXB1441R 1.65GBPS NRZ Digital Video Cable Equalizer IC, CXB2975CGG Graphics Processor, LCD Projection TV KDF-60XBR950, Plasma TV KDE42XBR950, and Game Console PlayStation 3. Upon information and belief, based on Ms. Nakagami-Sher's April 1 letter and Plaintiffs' other communications detailed in Part C above, Sony does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, Sony intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

208. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Sony on notice of its infringement, Sony has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers

that purchase Sony's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the CXB1441R 1.65GBPS NRZ Digital Video Cable Equalizer IC, CXB2975CGG Graphics Processor, LCD Projection TV KDF-60XBR950, Plasma TV KDE42XBR950, and Game Console PlayStation 3. Upon information and belief, Sony knew, based on Ms. Nakagami-Sher's April 1 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Sony's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Sony's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Sony's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Sony's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Sony's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Sony's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Sony's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

209. Upon information and belief, Sony's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Ms. Nakagami-Sher's April 1 letter and Plaintiffs' other communications detailed in Part C above, Sony acted with an objectively high likelihood that its actions constituted infringement of the '853 patent, including, but not limited to, the CXB1441R 1.65GBPS NRZ Digital Video Cable Equalizer IC, CXB2975CGG Graphics Processor, LCD Projection TV KDF-60XBR950, Plasma TV KDE42XBR950, and Game Console PlayStation 3, by refusing to take a license and continuing to sell its semiconductor-based products, and the objectively-defined risk was either known or so obvious that it should have been known.

J. STMicro's Infringement of the '853 Patent.

210. Upon information and belief, STMicro has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the S550B1A CMOS Image Sensor, M59DR032A 32M Dual Block Flash, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by STMicro that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the STM8S, ST6, ST7, μ PSD, ST10, STM32, STR7, STR9, ST19, ST21, ST23, ST32, M48T02, M48T08, M48T08Y, M48T12, M48T128Y, M48T129V, M48T129Y, M48T18, M48T35, M48T35AV, M48T35Y, M48T37V, M48T37Y, M48T512Y, M48T58, M48T58Y, M48T86,

M440T1MV, M48T201V, M48T201Y, M48T212V, M48Z02, M48Z08, M48Z12, M48Z128, M48Z128Y, M48Z129V, M48Z18, M48Z2M1V, M48Z2M1Y, M48Z32V, M48Z35, M48Z35AV, M48Z35Y, M48Z512A, M48Z512AY, M48Z58, M48Z58Y, STA013, STA016A, STA015, STA016T, STA310, STA027, STA330, TDA7590, and STA331 may also infringe the '853 patent.

211. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase STMicro's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the S550B1A CMOS Image Sensor and M59DR032A 32M Dual Block Flash, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

212. Upon information and belief, STMicro had knowledge of the '853 patent and its infringing conduct at least since August 15, 2008, when STMicro was formally placed on notice of its infringement. Specifically, by letters to STMicro's representative, Mr. Ollivier, dated July 24 and August 15, 2008, Plaintiffs' representative, Mr. Silverman, identified the '853 patent and disclosed an exemplary list of products that required a license.

213. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed STMicro on notice of its infringement, STMicro has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase STMicro's semiconductor devices and/or products containing

semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the S550B1A CMOS Image Sensor and M59DR032A 32M Dual Block Flash. Upon information and belief, based on Mr. Silverman's August 15 letter and Plaintiffs' other communications detailed in Part C above, STMicro does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, STMicro intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

214. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed STMicro on notice of its infringement, STMicro has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase STMicro's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the S550B1A CMOS Image Sensor and M59DR032A 32M Dual Block Flash. Upon information and belief, STMicro knew, based on Mr. Silverman's August 15 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial

non-infringing uses. Upon information and belief, STMicro's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of STMicro's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on STMicro's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of STMicro's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. STMicro's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of STMicro's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, STMicro's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

215. Upon information and belief, STMicro's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's August 15 letter and Plaintiffs' other communications detailed in Part C above, STMicro acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the S550B1A CMOS Image Sensor and M59DR032A 32M Dual Block Flash, and the objectively-defined risk was either known or so obvious that it should have been known.

K. Toshiba's Infringement of the '853 Patent.

216. Upon information and belief, Toshiba has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of

inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the TC58NVG4D1DTG00 NAND Flash, TC58NVG3D4CTG00 NAND Flash, TMP19A43FDXBG 32-Bit RISC MCU, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Toshiba that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the Hard Drive MK4032GAX, Hard Drive MK3008GAL, Printer E-Studio 3511, Notebook Satellite L300D-245, and other similar products. Upon information and belief, the TC58NVG3S0ETA00, TH58NVG4D4CTGI0, TC58NYG1S3EBA15, TH58NVG5D1DTG20, and TH58NVG2S3BTG00 may also infringe the '853 patent. Upon information and belief, the Satellite Notebook Family and e-STUDIO Printer Family may also contain semiconductor devices that infringe the '853 patent.

217. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Toshiba's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the TC58NVG4D1DTG00 NAND Flash, TC58NVG3D4CTG00 NAND Flash, TMP19A43FDXBG 32-Bit RISC MCU, Hard Drive MK4032GAX, Hard Drive MK3008GAL, Printer E-Studio 3511, and Notebook Satellite L300D-245, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or

through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

218. Upon information and belief, Toshiba had knowledge of the '853 patent and its infringing conduct at least since September 17, 2008, when Toshiba was formally placed on notice of its infringement. Specifically, by letter to Toshiba's representative, Mr. Mashimo, dated September 17, 2008, Plaintiffs' representative, Ms. King, disclosed exemplary claim charts for Toshiba's 16G NAND Flash TC58NVG4D1DTG00 and 8G NAND Flash TC58NVG3D3CTG00, each reading one or more claims of the '853 patent on the identified products.

219. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the TC58NVG4D1DTG00 NAND Flash, TC58NVG3D4CTG00 NAND Flash, TMP19A43FDXBG 32-Bit RISC MCU, Hard Drive MK4032GAX, Hard Drive MK3008GAL, Printer E-Studio 3511, and Notebook Satellite L300D-245. Upon information and belief, based on Ms. King's September 17 letter and Plaintiffs' other communications detailed in Part C above, Toshiba does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, Toshiba intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products

into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

220. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the TC58NVG4D1DTG00 NAND Flash, TC58NVG3D4CTG00 NAND Flash, TMP19A43FDXBG 32-Bit RISC MCU, Hard Drive MK4032GAX, Hard Drive MK3008GAL, Printer E-Studio 3511, and Notebook Satellite L300D-245. Upon information and belief, Toshiba knew, based on Ms. King's September 17 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Toshiba's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Toshiba's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Toshiba's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Toshiba's semiconductor devices

and/or products containing semiconductor devices cannot disable the infringing features of these products. Toshiba's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Toshiba's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Toshiba's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

221. Upon information and belief, Toshiba's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Ms. King's September 17 letter and Plaintiffs' other communications detailed in Part C above, Toshiba acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the TC58NVG4D1DTG00 NAND Flash, TC58NVG3D4CTG00 NAND Flash, TMP19A43FDXBG 32-Bit RISC MCU, Hard Drive MK4032GAX, Hard Drive MK3008GAL, Printer E-Studio 3511, and Notebook Satellite L300D-245, and the objectively-defined risk was either known or so obvious that it should have been known.

L. ON Semiconductor's Infringement of the '853 Patent.

222. Upon information and belief, ON Semiconductor has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one

or more claims of the '853 patent, including, but not limited to, the NCV85085 Low Dropout Voltage Regulator and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by ON Semiconductor that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the 0W344-004-XTP, 0W344-005-XTP, 0W588-002-XUA, 0W633-001-XTP, 0W888-002-XTP, CAT28F001, CAT28F512, CAT28F010, CAT28F020, CAT22C10, CAT24C44, EIA-232D, EIA-422-A, EIA-423, EIA-423-A, A5191HRTLГ-XTD, A5191HRTLГ-XTP, A5191HRTPG-XTD, A5191HRTPG-XTP, AMIS30600LINI1G, AMIS30600LINI1RG, AMIS30660CANH2RG, AMIS30660CANH6G, AMIS30660CANH6RG, AMIS30663CANG2G, AMIS30663CANG2RG, AMIS41682CANM1G, AMIS41682CANM1RG, AMIS41683CANN1G, AMIS41683CANN1RG, AMIS42665TJAA1G, AMIS42665TJAA1RG, AMIS42665TJAA3L, AMIS42665TJAA3RL, AMIS42665TJAA6G, AMIS42665TJAA6RG, AMIS42671ICAB1G, AMIS42671ICAB1RG, AMIS42673ICAG1G, AMIS42673ICAG1RG, AMIS42675ICAA1G, AMIS42675ICAA1RG, AMIS42700WCGA4H, AMIS42700WCGA4RH, AMIS42770ICAW1G, AMIS42770ICAW1RG, AMIS-49200-XTD, AMIS-49200-XTP, AMIS-49250-XTD, AMIS-49250-XTP, JLC1562BFELG, JLC1562BFG, JLC1562BNG, MC1488D, MC1488DG, MC1488DR2, MC1488DR2G, MC1488MELG, MC1488MG, MC1488P, MC1488PG, MC1489AD, MC1489ADG, MC1489ADR2, MC1489ADR2G, MC1489AMELG, MC1489AMG, MC1489AP, MC1489APG, MC1489D, MC1489DG, MC1489DR2, MC1489DR2G, MC1489MELG, MC1489MG, MC1489P, MC1489PG, MC26LS30D, MC26LS30DG, MC26LS30DR2, MC26LS30DR2G, MC3488AD, MC3488ADR2, MC3488ADR2G, MC3488AP1, MC3488AP1G, MC75172BDW, MC75172BDWG, MC75172BDWR2, MC75172BDWR2G, MC75174BDW, MC75174BDWG, MC75174BDWR2,

MC75174BDWR2G, MC75174BP, MC75174BPG, NCP1080DEG, NCP1080DER2G, NCP1081DEG, NCP1081DER2G, NCP1082DEG, NCP1082DER2G, NCP1083DEG, NCP1083DER2G, NCV7321D10G, NCV7321D10R2G, NCV7341D21G, NCV7341D21R2G, NCV7356D1G, NCV7356D1R2G, NCV7356D2G, NCV7356D2R2G, NCV7361ADG, NCV7361ADR2G may also infringe the '853 patent.

223. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase ON Semiconductor's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the NCV85085 Low Dropout Voltage Regulator, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

224. Upon information and belief, ON Semiconductor had knowledge of the '853 patent and its infringing conduct at least since December 18, 2008, when ON Semiconductor was formally placed on notice of its infringement. Specifically, by letter to ON Semiconductor's representative, Ms. Tsirigotis, dated December 18, 2008, Plaintiffs' representative, Mr. Silverman, identified the '853 patent and provided an exemplary list of products that required a license.

225. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed ON Semiconductor on notice of its infringement, ON Semiconductor has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase ON Semiconductor's semiconductor

devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the NCV85085 Low Dropout Voltage Regulator. Upon information and belief, based on Mr. Silverman's December 18 letter and Plaintiffs' other communications detailed in Part C above, ON Semiconductor does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, ON Semiconductor intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

226. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed ON Semiconductor on notice of its infringement, ON Semiconductor has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase ON Semiconductor's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent and that constitute a material part of the claimed invention, including, but not limited to, the NCV85085 Low Dropout Voltage Regulator. Upon information and belief, ON Semiconductor knew, based on Mr. Silverman's December 18 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial

non-infringing uses. Upon information and belief, ON Semiconductor's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of ON Semiconductor's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on ON Semiconductor's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of ON Semiconductor's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. ON Semiconductor's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of ON Semiconductor's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, ON Semiconductor's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

227. Upon information and belief, ON Semiconductor's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's December 18 letter and Plaintiffs' other communications detailed in Part C above, ON Semiconductor acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the NCV85085 Low Dropout Voltage Regulator, and the objectively-defined risk was either known or so obvious that it should have been known.

M. Zoran's Infringement of the '853 Patent.

228. Upon information and belief, Zoran has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '853 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the ZR36762PQC Processor and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Zoran that contain semiconductor devices that include all of the limitations of one or more claims of the '853 patent. Upon information and belief, the ZR36778HQCG may also infringe the '853 patent.

229. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Zoran's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the ZR36762PQC Processor, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '853 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

230. Upon information and belief, Zoran had knowledge of the '853 patent and its infringing conduct at least since January 12, 2009, when Zoran was formally placed on notice of

its infringement. Specifically, by letter to Zoran's representative, Mr. Gerzberg, dated January 12, 2009, Plaintiffs' representative, Mr. Silverman, provided an exemplary claim chart for Zoran's Processor ZR36762PQC, reading one or more claims of the '853 patent on the identified product.

231. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Zoran on notice of its infringement, Zoran has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Zoran's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent, including, but not limited to, the ZR36762PQC Processor. Upon information and belief, based on Mr. Silverman's January 12 letter, Zoran does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '853 patent. Upon information and belief, Zoran intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

232. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Zoran on notice of its infringement, Zoran has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Zoran's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '853 patent

and that constitute a material part of the claimed invention, including, but not limited to, the ZR36762PQC Processor. Upon information and belief, Zoran knew, based on Mr. Silverman's January 12 letter, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Zoran's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '853 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Zoran's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Zoran's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Zoran's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Zoran's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Zoran's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Zoran's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

233. Upon information and belief, Zoran's acts of infringement of the '853 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's January 12 letter, Zoran acted with an objectively high likelihood that its actions constituted infringement of the '853 patent by refusing to take a license and continuing to sell its semiconductor-based

products, including, but not limited to, the ZR36762PQC Processor, and the objectively-defined risk was either known or so obvious that it should have been known.

234. Upon information and belief, Qualcomm, Elpida, SK Hynix, Micron, ProMOS, SanDisk, Sony, STMicro, Toshiba, ON Semiconductor, and Zoran's acts of infringement of the '853 patent have been willful and intentional.

235. As a direct and proximate result of these acts of patent infringement, Fujitsu, AMD, Qualcomm, Elpida, SK Hynix, Micron, ProMOS, SanDisk, Sony, STMicro, Toshiba, ON Semiconductor, and Zoran have encroached on the exclusive rights of Plaintiffs and their licensees to practice the '853 patent, for which Plaintiffs are entitled to at least a reasonable royalty.

COUNT II

Patent Infringement of U.S. Patent No. 5,391,949

236. Plaintiffs repeat and re-allege each and every allegation of paragraphs 1-235 as though fully set forth herein.

237. The '949 patent is valid and enforceable.

238. Fujitsu, AMD, Qualcomm, SK Hynix, Micron, ProMOS, SanDisk, Sony, Toshiba, and ON Semiconductor have at no time, either expressly or impliedly, been licensed under the '949 patent.

239. Upon information and belief, to the extent any marking or notice was required by 35 U.S.C. § 287, Plaintiffs have complied with the requirements of that statute by providing actual or constructive notice to Fujitsu, AMD, Qualcomm, SK Hynix, Micron, ProMOS, SanDisk, Sony, Toshiba, and ON Semiconductor of their alleged infringement. Upon information and belief, prior to July 4, 2008, no commercial products embodying the '949 patent were ever made, offered for sale, or sold within the United States with permission from, or under the authority of, Thunderbird and/or Plaintiffs. Upon information and belief, Plaintiffs surmise that any express licensees of the

'949 patent have complied with the marking requirements of 35 U.S.C. § 287 by placing a notice of the '949 patent on all goods made, offered for sale, and/or sold within, and/or imported into, the United States that embody one or more claims of that patent.

A. Fujitsu's Infringement of the '949 Patent.

240. Upon information and belief, Fujitsu has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the 71PL193H808AW10 and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Fujitsu that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the Notebook LifeBook A3210, Notebook Lifebook Q2010, Notebook S2210, Notebook LifeBook T4215 Convertible, Server Primergy Econel 230R, Server Primergy RX220, Server Primergy RX330, and other similar products.

241. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Fujitsu's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the 71PL193H808AW10, Notebook LifeBook A3210, Notebook Lifebook Q2010, Notebook S2210, Notebook LifeBook T4215 Convertible, Server Primergy Econel 230R, Server Primergy RX220, and Server Primergy RX330, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '949 patent by making,

using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

242. Upon information and belief, Fujitsu had knowledge of the '949 patent and its infringing conduct at least since March 10, 2008, when Fujitsu was formally placed on notice of its infringement. Specifically, by letter to Fujitsu's representative, Mr. Masanobu, dated March 10, 2008, Plaintiffs' representative, Mr. Silverman, provided exemplary claim charts for Fujitsu's Notebook Lifebook Q2010 and Lifebook T4215 Convertible Notebook, reading one or more claims of the '949 patent on the identified products.

243. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Fujitsu on notice of its infringement, Fujitsu has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Fujitsu's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the 71PL193H808AW10, Notebook LifeBook A3210, Notebook Lifebook Q2010, Notebook S2210, Notebook LifeBook T4215 Convertible, Server Primergy Econel 230R, Server Primergy RX220, and Server Primergy RX330. Upon information and belief, based on Mr. Silverman's March 10 letter and Plaintiffs' other communications detailed in Part C above, Fujitsu does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, Fujitsu intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing

use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

244. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Fujitsu on notice of its infringement, Fujitsu has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Fujitsu's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent and that constitute a material part of the claimed invention, including, but not limited to, the 71PL193H808AW10, Notebook LifeBook A3210, Notebook Lifebook Q2010, Notebook S2210, Notebook LifeBook T4215 Convertible, Server Primergy Econel 230R, Server Primergy RX220, and Server Primergy RX330. Upon information and belief, Fujitsu knew, based on Mr. Silverman's March 10 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Fujitsu's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Fujitsu's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Fujitsu's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are

activated and operate. Upon information and belief, users of Fujitsu's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Fujitsu's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Fujitsu's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Fujitsu's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

245. Upon information and belief, Fujitsu's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's March 10 letter and Plaintiffs' other communications detailed in Part C above, Fujitsu acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the 71PL193H808AW10, Notebook LifeBook A3210, Notebook Lifebook Q2010, Notebook S2210, Notebook LifeBook T4215 Convertible, Server Primergy Econel 230R, Server Primergy RX220, and Server Primergy RX330, and the objectively-defined risk was either known or so obvious that it should have been known.

B. AMD's Infringement of the '949 Patent.

246. Upon information and belief, AMD has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States,

without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the ADA5600IAA6CZ and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by AMD that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent. Upon information and belief, the 7-Series, 64 Embedded Processors, 64 Processors for Telecommunications 690 Series, 480X Crossfire, 580X Crossfire, AM186ER, AM188ER, MB Chipsets for AMD Processors, MB Chipsets for Intel Processors, Server Graphics, Embedded Display Graphics, Handheld Processors, Athlon, Athlon 654FX, Athlon X2, Athlon 64 X2, Athlon 64 X2 5600, ADO4400IAA5DD, Geode Processor Family, M690 Series, Opteron (Second Generation), Opteron (Third Generation), Opteron for Servers, Opteron for Storage Systems, Opteron for Workstations, Phenom, Phenom X3, Phenom X4, Sempron, Sempron (Mobile), Turion 64 X2, and Xilleon may also infringe the '949 patent.

247. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase AMD's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the ADA5600IAA6CZ, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '949 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

248. Upon information and belief, AMD had knowledge of the '949 patent and its infringing conduct at least since April 22, 2008, when AMD was formally placed on notice of its infringement. Specifically, by letter to AMD's representative, Mr. Wolin, dated April 22, 2008,

Plaintiffs' representative, Ms. Wongso, provided an exemplary claim chart for AMD's Athlon 64 X2 5600, reading one or more claims of the '949 patent on the identified product.

249. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed AMD on notice of its infringement, AMD has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase AMD's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the ADA5600IAA6CZ. Upon information and belief, based on Ms. Wongso's April 22 letter and Plaintiffs' other communications detailed in Part C above, AMD does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, AMD intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

250. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed AMD on notice of its infringement, AMD has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase AMD's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent

and that constitute a material part of the claimed invention, including, but not limited to, the ADA5600IAA6CZ. Upon information and belief, AMD knew, based on Ms. Wongso's April 22 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, AMD's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of AMD's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on AMD's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of AMD's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. AMD's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of AMD's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, AMD's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

251. Upon information and belief, AMD's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's April 22 letter and Plaintiffs' other communications detailed in Part C above, AMD acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the

ADA5600IAA6CZ, and the objectively-defined risk was either known or so obvious that it should have been known.

C. Qualcomm's Infringement of the '949 Patent.

252. Upon information and belief, Qualcomm has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the MSM6280 Baseband Processor, MSM6300 Baseband Processor, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Qualcomm that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent. Upon information and belief, the MSM6000, MSM6025, MSM6050, MSM6100, MSM6125, MSM6245, MSM6250, MSM6260, MSM6275, MSM6281, MSM6290, MSM6500, MSM6550, MSM6800, MSM7200, MSM7200A, MSM7201, MSM7201A, MSM7500, MSM7600, QSC6065, QSC6055, QSC6030, QSC6020, QSC6010, QSC1100, QSD8250, QSD8650, QST1000, QST1100, QST1105, and Snapdragon may also infringe the '949 patent.

253. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Qualcomm's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the MSM6280 Baseband Processor and MSM6300 Baseband Processor, also directly infringe, either literally or under the doctrine of equivalents, under 35

U.S.C. § 271(a), the '949 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

254. Upon information and belief, Qualcomm had knowledge of the '949 patent and its infringing conduct at least since March 26, 2008, when Qualcomm was formally placed on notice of its infringement. Specifically, by letter to Qualcomm's representative, Mr. Rosenberg, dated March 26, 2008, Plaintiffs' representative, Mr. Silverman, provided exemplary claim charts for Qualcomm's MSM6300 and MSM6500, reading one or more claims of the '949 patent on the identified products.

255. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Qualcomm on notice of its infringement, Qualcomm has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Qualcomm's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the MSM6280 Baseband Processor and MSM6300 Baseband Processor. Upon information and belief, based on Mr. Silverman's March 26 letter and Plaintiffs' other communications detailed in Part C above, Qualcomm does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, Qualcomm intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in

conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

256. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Qualcomm on notice of its infringement, Qualcomm has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Qualcomm's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent and that constitute a material part of the claimed invention, including, but not limited to, the MSM6280 Baseband Processor and MSM6300 Baseband Processor. Upon information and belief, Qualcomm knew, based on Mr. Silverman's March 26 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Qualcomm's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Qualcomm's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Qualcomm's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Qualcomm's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Qualcomm's semiconductor devices do

not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Qualcomm's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Qualcomm's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

257. Upon information and belief, Qualcomm's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's March 26 letter and Plaintiffs' other communications detailed in Part C above, Qualcomm acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the MSM6280 Baseband Processor and MSM6300 Baseband Processor, and the objectively-defined risk was either known or so obvious that it should have been known.

D. SK Hynix's Infringement of the '949 Patent.

258. Upon information and belief, SK Hynix has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the HY5DU12822CTP DDR SDRAM, HY5PS1G831CFP-Y5 DDR2 SDRAM, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by SK Hynix that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent.

Upon information and belief, the HY5DU28422BT, HY5DU28422DT, HY5DU28422ET, HY5DU281622DT, HY5DU281622ET, HY5DU56422AT, HY5DU56422BF, HY5DU56422BLF, HY5DU56422BLT, HY5DU56422BT, HY5DU56422DF, HY5DU56422DFP, HY5DU56422DLF, HY5DU56422DLFP, HY5DU56422DT, HY5DU56422DTP, HY5DU56822ETP, HY5DU561622DT, HY5DU561622EFP, HY5DU12422ALT, HY5DU12422AT, HY5DU12422BFP, HY5DU12422CFP, HY5DU121622BT, HY5DU121622BTP, HY5DU28822BT, HY5DU28822DT, HY5DU28822ET, HY5DU56822AF, HY5DU56822AT, HY5DU56822BF, HY5DU56822BLF, HY5DU56822BLT, HY5DU56822BT, HY5DU56822DF, HY5DU56822DFP, HY5DU56822DLF, HY5DU56822DLFP, HY5DU56822DT, HY5DU56822DTP, HY5DU56822EFP, HY5DU561622AF, HY5DU561622AT, HY5DU561622DF, HY5DU561622DFP, HY5DU561622DLF, HY5DU561622DLFP, HY5DU561622DTP, HY5DU12822ALT, HY5DU12822AT, HY5DU12822BF, HY5DU12822BFP, HY5DU12822BLF, HY5DU12822BLFP, HY5DU12822BLT, HY5DU12822BLTP, HY5DU12822BT, HY5DU12822BTP, HY5DU121622ALT, HY5DU121622AT, HY5DU121622BF, HY5DU121622BFP, HY5DU121622BLF, HY5DU121622BLFP, HY5DU121622BLT, HY5DU121622BLTP, H5PS5142FFP, HY5PS12421CFP, H5PS5182FFP, HY5PS12821CFP, HY5PS121621CFP, H5PS1G43EFR, HY5PG1G431CFP, HY5PS1G431CFP, H5PS1G83EFR, HY5PG1G831CFP, HY5PS1G831CFP, H5PS1G63EFR, HY5PS1G1631CFP, H5PS2G43MFP, HY5PS2G431CMP, H5PS2G83MFP, HY5PS2G831CMP, H5PS4G43MMP, H5PS4G83MMP, HY5PS56821F, HY5PS561621AFP, HY5PS561621F, HY5PS12821F, HY5PS12821FP, HY5PS121621AF, HY5PS121621AFP, HY5PS121621BFP, HY5PS121621F, HY5PS121621FP, HY5PS561621BFP, HY5DU323222Q, HY5DU323222QP,

HY5DU281622ET, HY5DV281622DT, HY5DS283222BF, HY5DU283222AF,
HY5DU283222BF, HY5DU283222F, HY5DU283222Q, HY5DW283222AF,
HY5DW283222BF, HY5DU561622CT, HY5DS573222F, HY5DU573222AFM,
HY5DU573222F, HY5DW573222F, HY5DU121622CTP, HY5DS113222FM(P),
HY5DU113222FM, HY5DW113222FM, HY5MS5B6ALF(P), HY5MS5B2LF(P),
HY5MS7B6LF(P), HY5MS7B2LF(P), HY5DU56822CT-D43, HY5DV6411622AT-4,
HY5DU283222, HY5DU281622ET-H, HY5DU12822CTP-D43, HY5DU283222Q4,
HY5DU283222AQ, HY5DU283222BFP-33DR, HY5DU12822AT-D43, HY5PS56821,
HY5PS12821, HY5PS12821A, HY5PS1242CFP-Y5, HY5PS12821CFP-Y5, HY5PS1G431CFP-
S6, HY5PS12821CFP-S5, HY5PS1G831CFP-S5, HY5PS12821BFP-S5, HY5PS12821F-CF,
HY5PS561621A, HY5PS121621B, HY5DU383222, HY5DU281622ETP, and HY5PS12821F-
C4 may also infringe the '949 patent.

259. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase SK Hynix's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '949 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

260. Upon information and belief, SK Hynix had knowledge of the '949 patent and its infringing conduct at least since September 9, 2008, when SK Hynix was formally placed on notice

of its infringement. Specifically, by letter to SK Hynix's representative, Mr. Kim, dated September 9, 2008, Plaintiffs' representative, Ms. Wongso, provided exemplary claim charts for SK Hynix's 512M DDR SDRAM HY5DU12822CTP and DDR2 SDRAM HY5PS1G831CFP-Y5, each reading one or more claims of the '949 patent on the identified products.

261. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SK Hynix on notice of its infringement, SK Hynix has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SK Hynix's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM. Upon information and belief, based on Ms. Wongso's September 9 letter and Plaintiffs' other communications detailed in Part C above, SK Hynix does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, SK Hynix intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

262. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SK Hynix on notice of its infringement, SK Hynix has contributed under

35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SK Hynix's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent and that constitute a material part of the claimed invention, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM. Upon information and belief, SK Hynix knew, based on Ms. Wongso's September 9 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, SK Hynix's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of SK Hynix's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on SK Hynix's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of SK Hynix's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. SK Hynix's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of SK Hynix's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, SK Hynix's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

263. Upon information and belief, SK Hynix's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's September 9 letter and Plaintiffs' other communications detailed in Part C above, SK Hynix acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the HY5DU12822CTP DDR SDRAM and HY5PS1G831CFP-Y5 DDR2 SDRAM, and the objectively-defined risk was either known or so obvious that it should have been known.

E. Micron's Infringement of the '949 Patent.

264. Upon information and belief, Micron has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the MT9T012 Image Sensor and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Micron that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent. Upon information and belief, the MT9D111 may also infringe the '949 patent.

265. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Micron's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the MT9T012 Image Sensor, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '949 patent by making, using,

offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

266. Upon information and belief, Micron had knowledge of the '949 patent and its infringing conduct at least since April 18, 2008, when Micron was formally placed on notice of its infringement. Specifically, by letter to Micron's representative, Mr. Appleton, dated April 18, 2008, Plaintiffs' representative, Mr. Silverman, provided an exemplary claim chart for Micron's MT9T012, reading one or more claims of the '949 patent on the identified product.

267. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Micron on notice of its infringement, Micron has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Micron's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the MT9T012 Image Sensor. Upon information and belief, Micron does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, Micron intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and

prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

268. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Micron on notice of its infringement, Micron has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Micron's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent and that constitute a material part of the claimed invention, including, but not limited to, the MT9T012 Image Sensor. Upon information and belief, Micron knew, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Micron's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Micron's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Micron's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Micron's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Micron's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Micron's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly,

Micron's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

269. Upon information and belief, Micron's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, Micron acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the MT9T012 Image Sensor, and the objectively-defined risk was either known or so obvious that it should have been known.

F. ProMOS's Infringement of the '949 Patent.

270. Upon information and belief, ProMOS has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the V58C2256164SC, V59C1256164QA, and other similar semiconductor devices.

271. Upon information and belief, ProMOS knew or should have known, or acted with willful blindness, of the '949 patent and its infringing conduct at least since January 22, 2009, when ProMOS was formally placed on notice of its infringement. Specifically, by letter dated April 11, 2008, Plaintiffs' representative, Mr. Silverman, provided a copy of the '949 patent to ProMOS's representative, Mr. Chen, and by letter dated January 22, 2009, Mr. Silverman informed ProMOS's counsel, Mr. Kwok, that the V58C2256164SBT5 and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

G. SanDisk's Infringement of the '949 Patent.

272. Upon information and belief, SanDisk has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the SDCE DLI Controller and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by SanDisk that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the Memory Card 128 MB Secure Digital SD Card – SDSDB-128-A10 and other similar products. Upon information and belief, the Extreme III SD and SDHC Cards, Ultra II SD and SDHC Cards, Ultra II SD and SDHC Plus Cards, and SD Memory Card Family may also contain semiconductor devices that infringe the '949 patent.

273. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase SanDisk's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the SDCE DLI Controller and Memory Card 128 MB Secure Digital SD Card – SDSDB-128-A10, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '949 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

274. Upon information and belief, SanDisk had knowledge of the '949 patent and its infringing conduct at least since August 20, 2008, when SanDisk was formally placed on notice of its infringement. Specifically, by letter to SanDisk's representative, Mr. Thompson, dated August 20, 2008, Plaintiffs' representative, Ms. Wongso, provided exemplary claim charts for SanDisk's Controller SDCE and Memory Card 128MB Secure Digital SD Card, each reading one or more claims of the '949 patent on the identified products.

275. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SanDisk on notice of its infringement, SanDisk has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SanDisk's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the SDCE DLI Controller and Memory Card 128 MB Secure Digital SD Card – SDSDB-128-A10. Upon information and belief, based on Ms. Wongso's August 20 letter and Plaintiffs' other communications detailed in Part C above, SanDisk does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, SanDisk intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

276. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed SanDisk on notice of its infringement, SanDisk has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase SanDisk's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent and that constitute a material part of the claimed invention, including, but not limited to, the SDCE DLI Controller and Memory Card 128 MB Secure Digital SD Card – SDSDB-128-A10. Upon information and belief, SanDisk knew, based on Ms. Wongso's August 20 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, SanDisk's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of SanDisk's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on SanDisk's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of SanDisk's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. SanDisk's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of SanDisk's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, SanDisk's products containing

semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

277. Upon information and belief, SanDisk's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Ms. Wongso's August 20 letter and Plaintiffs' other communications detailed in Part C above, SanDisk acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the SDCE DLI Controller and Memory Card 128 MB Secure Digital SD Card – SDSDB-128-A10, and the objectively-defined risk was either known or so obvious that it should have been known.

H. Sony's Infringement of the '949 Patent.

278. Upon information and belief, Sony has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the CXB2975CGG and other similar semiconductor devices.

279. Upon information and belief, Sony knew or should have known, or acted with willful blindness, of the '949 patent and its infringing conduct at least since April 1, 2009, when Sony was formally placed on notice of its infringement. Specifically, by letter dated March 7, 2008, Plaintiffs' representative, Mr. Silverman, provided a copy of the '949 patent to Sony's representative, Mr. Moriya, and by letter dated April 1, 2009, Plaintiffs' representative,

Ms. Nakagami-Sher, informed Sony's representative, Mr. Sekiguchi, that the CXB2975CGG and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

I. Toshiba's Infringement of the '949 Patent.

280. Upon information and belief, Toshiba has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the TMP19A43FDXBG 32-Bit RISC MCU and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Toshiba that contain semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the Mobile Phone 904T, Mobile Phone A5501T, Mobile Phone Protégé 910, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite P300, and other similar products. Upon information and belief, the Satellite Notebook Family may also contain semiconductor devices that infringe the '949 patent.

281. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Toshiba's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the TMP19A43FDXBG 32-Bit RISC MCU, Mobile Phone 904T, Mobile Phone A5501T, Mobile Phone Protégé 910, Notebook Satellite A200, Notebook Satellite

A210, Notebook Satellite A300, and Notebook Satellite P300, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '949 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

282. Upon information and belief, Toshiba had knowledge of the '949 patent and its infringing conduct at least since December 7, 2009, when Toshiba was formally placed on notice of its infringement. Specifically, by letter to Toshiba's representative, Mr. Mashimo, dated December 7, 2009, Plaintiffs' representative, Ms. Nakagami-Sher, provided an exemplary claim chart for Toshiba's 32-bit RISC MCU TMP19A43FDXBG, reading one or more claims of the '949 patent on the identified product.

283. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the TMP19A43FDXBG 32-Bit RISC MCU, Mobile Phone 904T, Mobile Phone A5501T, Mobile Phone Protégé 910, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, and Notebook Satellite P300. Upon information and belief, based on Ms. Nakagami-Sher's December 7 letter and Plaintiffs' other communications detailed in Part C above, Toshiba does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '949 patent. Upon information and belief, Toshiba intends to

cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

284. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '949 patent and that constitute a material part of the claimed invention, including, but not limited to, the TMP19A43FDXBG 32-Bit RISC MCU, Mobile Phone 904T, Mobile Phone A5501T, Mobile Phone Protégé 910, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, and Notebook Satellite P300. Upon information and belief, Toshiba knew, based on Ms. Nakagami-Sher's December 7 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Toshiba's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '949 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Toshiba's semiconductor devices necessarily involves the infringing features of the

patents-in-suit. Upon information and belief, when users power on Toshiba's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Toshiba's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Toshiba's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Toshiba's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Toshiba's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

285. Upon information and belief, Toshiba's acts of infringement of the '949 patent have been willful and intentional. Upon information and belief, based on Ms. Nakagami-Sher's December 7 letter and Plaintiffs' other communications detailed in Part C above, Toshiba acted with an objectively high likelihood that its actions constituted infringement of the '949 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the TMP19A43FDXBG 32-Bit RISC MCU, Mobile Phone 904T, Mobile Phone A5501T, Mobile Phone Protégé 910, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, and Notebook Satellite P300, and the objectively-defined risk was either known or so obvious that it should have been known.

J. ON Semiconductor's Infringement of the '949 Patent.

286. Upon information and belief, ON Semiconductor has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '949 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the

United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '949 patent, including, but not limited to, the AMIS41682CANM1G, AMIS42675ICAA1RG, MC33560DTBR2G, NCV7420D23G, OW344-004-XTP, and other similar semiconductor devices.

287. Upon information and belief, ON Semiconductor knew or should have known, or acted with willful blindness, of the '949 patent and its infringing conduct at least since December 18, 2008, when ON Semiconductor was formally placed on notice of its infringement. Specifically, by letter dated May 15, 2008, Plaintiffs' representative, Mr. Silverman, provided ON Semiconductor's representative, Mr. Jackson, with a copy of the '949 patent, and by letter dated December 18, 2008, Mr. Silverman informed ON Semiconductor's representative, Ms. Tsirigotis, that the AMIS41682CANM1G, AMIS42675ICAA1RG, OW344-004-XTP, and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

288. As a direct and proximate result of these acts of patent infringement, Fujitsu, AMD, Qualcomm, SK Hynix, Micron, ProMOS, SanDisk, Sony, Toshiba, and ON Semiconductor have encroached on the exclusive rights of Plaintiffs and their licensees to practice the '949 patent, for which Plaintiffs are entitled to at least a reasonable royalty.

COUNT III

Patent Infringement of U.S. Patent No. 5,247,212

289. Plaintiffs repeat and re-allege each and every allegation of paragraphs 1-288 as though fully set forth herein.

290. The '212 patent is valid and enforceable.

291. Fujitsu, AMD, Micron, Sony, and Toshiba have at no time, either expressly or impliedly, been licensed under the '212 patent.

292. Upon information and belief, to the extent any marking or notice was required by 35 U.S.C. § 287, Plaintiffs have complied with the requirements of that statute by providing actual or constructive notice to Fujitsu, AMD, Micron, Sony, and Toshiba of their alleged infringement. Upon information and belief, prior to July 4, 2008, no commercial products embodying the '212 patent were ever made, offered for sale, or sold within the United States with permission from, or under the authority of, Thunderbird and/or Plaintiffs. Upon information and belief, Plaintiffs surmise that any express licensees of the '212 patent have complied with the marking requirements of 35 U.S.C. § 287 by placing a notice of the '212 patent on all goods made, offered for sale, and/or sold within, and/or imported into, the United States that embody one or more claims of that patent.

A. Fujitsu's Infringement of the '212 Patent.

293. Upon information and belief, Fujitsu has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '212 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the AM29LV160DT and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Fujitsu that contain semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the Notebook Lifebook P1620, Notebook Hard Drive MAV2036RC, and other similar products. Upon information and belief, the MBM29LV160BE, MBM29LV160T, MBM29LV160TE, MBM29LV400BC, MBM29PL160BD, MBM29F033C, MBM29LV004TC, MBM29LV651UE, MBM29F040,

MBM29F040C, MBM29F040C-70BD, MBM29F040C-70PD, MBM29F080A, MBM29F160BE, MBM29F160TE, MBM29F016, MBM29F200BC, MBM29F400BC, MBM29F400TC, MBM29LV800BC, MBM29F800BA, MBM29F800TA, MBM29LV160B, MBM29F016A, MBM29F400BC-70PFTN, MBM29LV800TA, MBM29LV800BA, MBM29LV800BE, MBM29LV002TC, MBM29F002TC, MBM29F080A-90PFTN, MBM29SL800BE, MBM29F040C-90PD, MBM29LV200BC, MBM29F040C-70PFTN, and MBM29LV400TC may infringe the '212 patent. Upon information and belief, the Notebook Lifebook A3210, Notebook S2210, Server Primergy Econel 230R, Server Primergy RX330 may contain semiconductor devices that infringe the '212 patent.

294. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Fujitsu's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the AM29LV160DT, Notebook Lifebook P1620, and Notebook Hard Drive MAV2036RC, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '212 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

295. Upon information and belief, Fujitsu had knowledge of the '212 patent and its infringing conduct at least since August 13, 2008, when Fujitsu was formally placed on notice of its infringement. Specifically, by letter to Fujitsu's representative, Mr. Teraoka, dated August 13, 2008, Plaintiffs' representative, Mr. Silverman, provided an exemplary claim chart for Fujitsu's

Laptop Hard Drive MAV2036RC, reading one or more claims of the '212 patent on the identified product.

296. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Fujitsu on notice of its infringement, Fujitsu has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Fujitsu's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the AM29LV160DT, Notebook Lifebook P1620, and Notebook Hard Drive MAV2036RC. Upon information and belief, based on Mr. Silverman's August 13 letter and Plaintiffs' other communications detailed in Part C above, Fujitsu does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '212 patent. Upon information and belief, Fujitsu intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

297. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Fujitsu on notice of its infringement, Fujitsu has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Fujitsu's semiconductor devices and/or products containing

semiconductor devices that include all of the limitations of one or more claims of the '212 patent and that constitute a material part of the claimed invention, including, but not limited to, the AM29LV160DT, Notebook Lifebook P1620, and Notebook Hard Drive MAV2036RC. Upon information and belief, Fujitsu knew, based on Mr. Silverman's August 13 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Fujitsu's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '212 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Fujitsu's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Fujitsu's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Fujitsu's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Fujitsu's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Fujitsu's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Fujitsu's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

298. Upon information and belief, Fujitsu's acts of infringement of the '212 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's August 13 letter and Plaintiffs' other communications detailed in Part C above, Fujitsu acted with an

objectively high likelihood that its actions constituted infringement of the '212 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the AM29LV160DT, Notebook Lifebook P1620, and Notebook Hard Drive MAV2036RC, and the objectively-defined risk was either known or so obvious that it should have been known.

B. AMD's Infringement of the '212 Patent.

299. Upon information and belief, AMD has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '212 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the AM29LV160DT Flash Memory, ADO4400IAA5DD Dual-Core Processor, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by AMD that contain semiconductor devices that include all of the limitations of one or more claims of the '212 patent. Upon information and belief, the AM29LV040B, AM29LV641D, AM29LV641DH, AM29LV641DL, AM29LV160DB, AM29LV320DB, AM29LV033C, AM29SL800, AM29F080B, AM29F016D, AM29DL32xD, AM29F040B, AM29LV320MT, AM29F010, AM29F010A, AM29F010B, AM29DL640D, AM29F032B, AM29LV800, AM29LV800B, AM29LV800BB, AM29LV800BT, AM29F002, AM29F002T, AM29F002BT, AM29F002NBB, AM29BL802CB, AM29F800B, AM29F800BB, AM29F800BT, AM29F800B-70EC, AM29F800B-90EC, AM29F400BB, AM29LV116DB, AM29LV128ML, AM29LV081B, AM29LV002BB, AM29BDD160GB64C, AM29LV400BB, AM29F200BB, AM29LV200, AM29LV200BB, AM29F016B, AM29F016BB,

AM29N323D, AM29F002NBB-90EC, AM29BDS640G, AM29LV640DU, AM29LV160D, AM29LV400BT, AM29F400BT, AM29LV160B, AM29LV160BT, AM29DL16xD, AM29F400B-70EC, AM29F002NBT, AM29LV002BT, AM186ER, AM188ER, MB Chipsets for AMD Processors, MB Chipsets for Intel Processors, Server Graphics, Embedded Display Graphics, Handheld Processors, Athlon, Athlon 654FX, Athlon X2, Athlon 64 X2 Dual Core, Geode Processor Family, Opteron, Opteron (Second Generation), Opteron (Third Generation), Phenom, Phenom X3, Phenom X4, Sempron, Sempron (Mobile), Turion 64 X2, and Xilleon may also infringe the '212 patent.

300. Upon information and belief, AMD is also liable for the direct infringement of the '212 patent by Spansion that occurred before December 16, 2005, the date of Spansion's initial public offering. Before December 16, 2005, Spansion was a subsidiary of AMD, with AMD owning a controlling share (60 percent) of Spansion. Upon information and belief, prior to Spansion's public offering on December 16, 2005, AMD had the right and ability to control Spansion's infringing acts and received a direct financial benefit from Spansion's infringement. Upon information and belief, prior to December 16, 2005, Spansion Inc. made, used, offered to sell, and/or sold to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the AM29LV160DT and other similar semiconductor devices.

301. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase AMD's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent,

including, but not limited to, the AM29LV160DT Flash Memory and ADO4400IAA5DD Dual-Core Processor, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '212 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

302. Upon information and belief, AMD had knowledge of the '212 patent and its infringing conduct at least since March 26, 2008, when AMD was formally placed on notice of its infringement. Specifically, by letter to AMD's representative, Mr. Wolin, dated March 26, 2008, Plaintiffs' representative, Mr. Silverman, provided an exemplary claim chart for AMD's A29LV160DT, reading one or more claims of the '212 patent on the identified product.

303. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed AMD on notice of its infringement, AMD has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase AMD's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the AM29LV160DT Flash Memory and ADO4400IAA5DD Dual-Core Processor. Upon information and belief, based on Mr. Silverman's March 26 letter and Plaintiffs' other communications detailed in Part C above, AMD does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '212 patent. Upon information and belief, AMD intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established

distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

304. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed AMD on notice of its infringement, AMD has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase AMD's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent and that constitute a material part of the claimed invention, including, but not limited to, the AM29LV160DT Flash Memory and ADO4400IAA5DD Dual-Core Processor. Upon information and belief, AMD knew, based on Mr. Silverman's March 26 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, AMD's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '212 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of AMD's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on AMD's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of AMD's semiconductor devices and/or products containing semiconductor devices cannot disable

the infringing features of these products. AMD's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of AMD's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, AMD's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

305. Upon information and belief, AMD's acts of infringement of the '212 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's March 26 letter and Plaintiffs' other communications detailed in Part C above, AMD acted with an objectively high likelihood that its actions constituted infringement of the '212 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the AM29LV160DT Flash Memory and ADO4400IAA5DD Dual-Core Processor, and the objectively-defined risk was either known or so obvious that it should have been known.

C. Micron's Infringement of the '212 Patent.

306. Upon information and belief, Micron has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '212 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the MT49H16M18CFM-33, MT42L128M32D2KL-3 IT, MT45W4MW16PCGA-70 IT, MT5VDDT1672AY-40BK1, MT47H32M16HW-25E AAT:G, MT4VDDT3264HIY-335J1, MT72HTS1G72FZ-80EH1D6, MT36HTF25672PZ-667, MT18HTF51272PDZ-80EC1, MT16KTF51264AZ-1G6M1, MT48H4M16LFB4-75, and other similar semiconductor devices.

307. Upon information and belief, Micron knew or should have known, or acted with willful blindness, of the '212 patent and its infringing conduct at least since April 18, 2008, when Micron was formally placed on notice of its infringement. Specifically, by letter dated April 11, 2008, Plaintiffs' representative, Mr. Silverman, provided Micron's representative, Mr. Appleton, with a copy of the '212 patent and, by letter dated April 18, 2008, Mr. Silverman informed Mr. Appleton, that the MT46V32M8TG and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

D. Sony's Infringement of the '212 Patent.

308. Upon information and belief, Sony has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '212 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the CXD2964GB Cell Broadband Engine and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Sony that contain semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the Color Video Printer UP-50, Digital Audio Mixer DMX-R100, Digital Printing System UPX-2000, Vaio Laptop PCG-N505ES, Digital Color Printer UP-D70A, Multiscan Projector VPH-G90U, Camera Control Unit CCU-900, Color Video Camera BVP-570, Color Video Camera BVP-900, Color Video Camera BVP-950, Color Video Camera BVP-9500WS, Digital Betacam Camcorder DVW-707, Digital Film Imager UP-

D71XR, Digital Master Switcher DVS-M1000C, Digital Multi Effects DME-3000/7000, Digital Videocassette Player DNW-65/65P, Digital Videocassette Player DNW-A30, Digital Videocassette Player DNW-A65/A65P, Digital Videocassette Recorder DNW-75/75P, Digital Videocassette Recorder DNW-A220, Digital Videocassette Recorder DNW-A28/A28P, Digital Videocassette Recorder DNW-A75, Digital Videocassette Recorder MSW-A2000, DME Switcher DFS-700A, Film Scanner UY-S90, HD Digital Multi Effects HDME-7000, HD Digital Video Switcher HDS-7000, Digital Video Switcher HDS-7150, HD Digital Videocassette Recorder HDW-250, HD Digital Videocassette Recorder HDW-F500, HD-SD Down Converter Board with Audio HKPF-525AV, Master Setup Unit MSU-700A, Master Setup Unit MSU-750, Multi Access Video and Audio Server MAV-70, Multi Access Video Disk Recorder MAV-555, Multi Bit Rate Routing Switcher HDS-X3400, Multimedia Terminal PCS-6000, Remote Control Unit RM-B150, Sampling Digital Reverb DRE-S777, SDTV Non-Linear Production System DMW-S01NL, Telecine Film Sound Processor BKFV-500, Telecine Log Data Processor BKFV-300, Videocassette Recorder BVW-55, XPRI Jog and Shuttle Control Panel DMWC2, HD Camcorder HDW-700A, Digital Color Printer UP-D23MD, Digital Color Printer UP-D70XR, Digital Color Video Printer UP-D21MD, Digital Color Printer UP-D50, Game Console PlayStation 3, and other similar products.

309. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Sony's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the CXD2964GB Cell Broadband Engine, Color Video Printer UP-50, Digital Audio Mixer DMX-R100, Digital Printing System UPX-2000, Vaio Laptop PCG-N505ES, Digital Color Printer UP-D70A, Multiscan Projector VPH-G90U, Camera Control Unit CCU-900, Color

Video Camera BVP-570, Color Video Camera BVP-900, Color Video Camera BVP-950, Color Video Camera BVP-9500WS, Digital Betacam Camcorder DVW-707, Digital Film Imager UP-D71XR, Digital Master Switcher DVS-M1000C, Digital Multi Effects DME-3000/7000, Digital Videocassette Player DNW-65/65P, Digital Videocassette Player DNW-A30, Digital Videocassette Player DNW-A65/A65P, Digital Videocassette Recorder DNW-75/75P, Digital Videocassette Recorder DNW-A220, Digital Videocassette Recorder DNW-A28/A28P, Digital Videocassette Recorder DNW-A75, Digital Videocassette Recorder MSW-A2000, DME Switcher DFS-700A, Film Scanner UY-S90, HD Digital Multi Effects HDME-7000, HD Digital Video Switcher HDS-7000, Digital Video Switcher HDS-7150, HD Digital Videocassette Recorder HDW-250, HD Digital Videocassette Recorder HDW-F500, HD-SD Down Converter Board with Audio HKPF-525AV, Master Setup Unit MSU-700A, Master Setup Unit MSU-750, Multi Access Video and Audio Server MAV-70, Multi Access Video Disk Recorder MAV-555, Multi Bit Rate Routing Switcher HDS-X3400, Multimedia Terminal PCS-6000, Remote Control Unit RM-B150, Sampling Digital Reverb DRE-S777, SDTV Non-Linear Production System DMW-S01NL, Telecine Film Sound Processor BKFV-500, Telecine Log Data Processor BKFV-300, Videocassette Recorder BVW-55, XPRI Jog and Shuttle Control Panel DMWC2, HD Camcorder HDW-700A, Digital Color Printer UP-D23MD, Digital Color Printer UP-D70XR, Digital Color Video Printer UP-D21MD, Digital Color Printer UP-D50, and Game Console PlayStation 3, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '212 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

310. Upon information and belief, Sony had knowledge of the '212 patent and its infringing conduct at least since April 1, 2009, when Sony was formally placed on notice of its infringement. Specifically, by letter to Sony's representative, Mr. Sekiguchi, dated April 1, 2009, Plaintiffs' representative, Ms. Nakagami-Sher, provided an exemplary claim chart for Sony's Cell Broadband Engine CXD2964GB, reading one or more claims of the '212 patent on the identified product.

311. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Sony on notice of its infringement, Sony has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Sony's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the CXD2964GB Cell Broadband Engine, Color Video Printer UP-50, Digital Audio Mixer DMX-R100, Digital Printing System UPX-2000, Vaio Laptop PCG-N505ES, Digital Color Printer UP-D70A, Multiscan Projector VPH-G90U, Camera Control Unit CCU-900, Color Video Camera BVP-570, Color Video Camera BVP-900, Color Video Camera BVP-950, Color Video Camera BVP-9500WS, Digital Betacam Camcorder DVW-707, Digital Film Imager UP-D71XR, Digital Master Switcher DVS-M1000C, Digital Multi Effects DME-3000/7000, Digital Videocassette Player DNW-65/65P, Digital Videocassette Player DNW-A30, Digital Videocassette Player DNW-A65/A65P, Digital Videocassette Recorder DNW-75/75P, Digital Videocassette Recorder DNW-A220, Digital Videocassette Recorder DNW-A28/A28P, Digital Videocassette Recorder DNW-A75, Digital Videocassette Recorder MSW-A2000, DME Switcher DFS-700A, Film Scanner UY-S90, HD Digital Multi Effects HDME-7000, HD Digital Video Switcher HDS-7000, Digital Video Switcher HDS-7150, HD Digital Videocassette Recorder

HDW-250, HD Digital Videocassette Recorder HDW-F500, HD-SD Down Converter Board with Audio HKPF-525AV, Master Setup Unit MSU-700A, Master Setup Unit MSU-750, Multi Access Video and Audio Server MAV-70, Multi Access Video Disk Recorder MAV-555, Multi Bit Rate Routing Switcher HDS-X3400, Multimedia Terminal PCS-6000, Remote Control Unit RM-B150, Sampling Digital Reverb DRE-S777, SDTV Non-Linear Production System DMW-S01NL, Telecine Film Sound Processor BKFV-500, Telecine Log Data Processor BKFV-300, Videocassette Recorder BVW-55, XPRI Jog and Shuttle Control Panel DMWC2, HD Camcorder HDW-700A, Digital Color Printer UP-D23MD, Digital Color Printer UP-D70XR, Digital Color Video Printer UP-D21MD, Digital Color Printer UP-D50, and Game Console PlayStation 3. Upon information and belief, based on Ms. Nakagami-Sher's April 1 letter and Plaintiffs' other communications detailed in Part C above, Sony does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '212 patent. Upon information and belief, Sony intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

312. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Sony on notice of its infringement, Sony has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Sony's semiconductor devices and/or products containing semiconductor devices

that include all of the limitations of one or more claims of the '212 patent and that constitute a material part of the claimed invention, including, but not limited to, the CXD2964GB Cell Broadband Engine, Color Video Printer UP-50, Digital Audio Mixer DMX-R100, Digital Printing System UPX-2000, Vaio Laptop PCG-N505ES, Digital Color Printer UP-D70A, Multiscan Projector VPH-G90U, Camera Control Unit CCU-900, Color Video Camera BVP-570, Color Video Camera BVP-900, Color Video Camera BVP-950, Color Video Camera BVP-9500WS, Digital Betacam Camcorder DVW-707, Digital Film Imager UP-D71XR, Digital Master Switcher DVS-M1000C, Digital Multi Effects DME-3000/7000, Digital Videocassette Player DNW-65/65P, Digital Videocassette Player DNW-A30, Digital Videocassette Player DNW-A65/A65P, Digital Videocassette Recorder DNW-75/75P, Digital Videocassette Recorder DNW-A220, Digital Videocassette Recorder DNW-A28/A28P, Digital Videocassette Recorder DNW-A75, Digital Videocassette Recorder MSW-A2000, DME Switcher DFS-700A, Film Scanner UY-S90, HD Digital Multi Effects HDME-7000, HD Digital Video Switcher HDS-7000, Digital Video Switcher HDS-7150, HD Digital Videocassette Recorder HDW-250, HD Digital Videocassette Recorder HDW-F500, HD-SD Down Converter Board with Audio HKPF-525AV, Master Setup Unit MSU-700A, Master Setup Unit MSU-750, Multi Access Video and Audio Server MAV-70, Multi Access Video Disk Recorder MAV-555, Multi Bit Rate Routing Switcher HDS-X3400, Multimedia Terminal PCS-6000, Remote Control Unit RM-B150, Sampling Digital Reverb DRE-S777, SDTV Non-Linear Production System DMW-S01NL, Telecine Film Sound Processor BKFV-500, Telecine Log Data Processor BKFV-300, Videocassette Recorder BVW-55, XPRI Jog and Shuttle Control Panel DMWC2, HD Camcorder HDW-700A, Digital Color Printer UP-D23MD, Digital Color Printer UP-D70XR, Digital Color Video Printer UP-D21MD, Digital Color Printer UP-D50, and Game Console PlayStation 3. Upon information and belief, Sony knew, based

on Ms. Nakagami-Sher's April 1 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Sony's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '212 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Sony's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Sony's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Sony's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. Sony's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Sony's semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental. Similarly, Sony's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

313. Upon information and belief, Sony's acts of infringement of the '212 patent have been willful and intentional. Upon information and belief, based on Ms. Nakagami-Sher's April 1 letter and Plaintiffs' other communications detailed in Part C above, Sony acted with an objectively high likelihood that its actions constituted infringement of the '212 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the CXD2964GB Cell Broadband Engine, Color Video Printer UP-50, Digital Audio Mixer DMX-

R100, Digital Printing System UPX-2000, Vaio Laptop PCG-N505ES, Digital Color Printer UP-D70A, Multiscan Projector VPH-G90U, Camera Control Unit CCU-900, Color Video Camera BVP-570, Color Video Camera BVP-900, Color Video Camera BVP-950, Color Video Camera BVP-9500WS, Digital Betacam Camcorder DVW-707, Digital Film Imager UP-D71XR, Digital Master Switcher DVS-M1000C, Digital Multi Effects DME-3000/7000, Digital Videocassette Player DNW-65/65P, Digital Videocassette Player DNW-A30, Digital Videocassette Player DNW-A65/A65P, Digital Videocassette Recorder DNW-75/75P, Digital Videocassette Recorder DNW-A220, Digital Videocassette Recorder DNW-A28/A28P, Digital Videocassette Recorder DNW-A75, Digital Videocassette Recorder MSW-A2000, DME Switcher DFS-700A, Film Scanner UY-S90, HD Digital Multi Effects HDME-7000, HD Digital Video Switcher HDS-7000, Digital Video Switcher HDS-7150, HD Digital Videocassette Recorder HDW-250, HD Digital Videocassette Recorder HDW-F500, HD-SD Down Converter Board with Audio HKPF-525AV, Master Setup Unit MSU-700A, Master Setup Unit MSU-750, Multi Access Video and Audio Server MAV-70, Multi Access Video Disk Recorder MAV-555, Multi Bit Rate Routing Switcher HDS-X3400, Multimedia Terminal PCS-6000, Remote Control Unit RM-B150, Sampling Digital Reverb DRE-S777, SDTV Non-Linear Production System DMW-S01NL, Telecine Film Sound Processor BKFV-500, Telecine Log Data Processor BKFV-300, Videocassette Recorder BVW-55, XPRI Jog and Shuttle Control Panel DMWC2, HD Camcorder HDW-700A, Digital Color Printer UP-D23MD, Digital Color Printer UP-D70XR, Digital Color Video Printer UP-D21MD, Digital Color Printer UP-D50, and Game Console PlayStation 3, and the objectively-defined risk was either known or so obvious that it should have been known.

E. Toshiba's Infringement of the '212 Patent.

314. Upon information and belief, Toshiba has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of

inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '212 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the Color TV 40WH08G, Color TV 40WH08B, Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, HD LCD TV 32HL95, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite P300, Notebook Tecra A6-EZ6411, Digital Photocopier e-STUDIO 163/203, and other similar products.

315. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Toshiba's products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the Color TV 40WH08G, Color TV 40WH08B, Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, HD LCD TV 32HL95, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite P300, Notebook Tecra A6-EZ6411, and Digital Photocopier e-STUDIO 163/203, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C.

§ 271(a), the '212 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, those products containing semiconductor devices.

316. Upon information and belief, Toshiba had knowledge of the '212 patent and its infringing conduct at least since June 16, 2008, when Toshiba was formally placed on notice of its infringement. Specifically, by letter to Toshiba's representative, Mr. Mashimo, dated June 16, 2008, Plaintiffs' representative, Mr. Silverman, provided an exemplary claim chart for Toshiba's Color Television 40WH08G, 40WH08B, Laptop Tecra A6-EZ6411, and e-STUDIO 163/203, each reading one or more claims of the '212 patent on the identified products.

317. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent, including, but not limited to, the Color TV 40WH08G, Color TV 40WH08B, Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, HD LCD TV 32HL95, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite P300, Notebook Tecra A6-EZ6411, and Digital Photocopier e-STUDIO 163/203. Upon information and belief, based on Mr. Silverman's June 16 letter and Plaintiffs' other communications detailed in Part C above, Toshiba does so with knowledge, or with willful

blindness of the fact, that the induced acts constitute infringement of the '212 patent. Upon information and belief, Toshiba intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

318. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's products containing semiconductor devices that include all of the limitations of one or more claims of the '212 patent and that constitute a material part of the claimed invention, including, but not limited to, the Color TV 40WH08G, Color TV 40WH08B, Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, HD LCD TV 32HL95, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite A300, Notebook Satellite P300, Notebook Tecra A6-EZ6411, and Digital Photocopier e-STUDIO 163/203. Upon information and belief, Toshiba knew, based on Mr. Silverman's June 16 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in

an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Toshiba's products contain semiconductor devices that have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '212 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Toshiba's products containing semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Toshiba's products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Toshiba's products containing semiconductor devices cannot disable the infringing features of these products. Toshiba's products containing semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Toshiba's products containing semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.

319. Upon information and belief, Toshiba's acts of infringement of the '212 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's June 16 letter and Plaintiffs' other communications detailed in Part C above, Toshiba acted with an objectively high likelihood that its actions constituted infringement of the '212 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the Color TV 40WH08G, Color TV 40WH08B, Color TV MW20FM1, Color TV MW20FM3, Color TV MW24FM1, Color TV MW24FM1C, Color TV MW24FM3, Color TV MW24FM5, DVD Video Player SD-400V/SD-K600, DVD Video Audio Player SD-4700/SD-5700, DVD Video Player SD-5109, DVD Video Player and Cassette Recorder SD-V280, HD LCD TV 32HL95, Printer E-Studio 3511, Notebook Satellite A200, Notebook Satellite A210, Notebook Satellite

A300, Notebook Satellite P300, Notebook Tecra A6-EZ6411, and Digital Photocopier e-STUDIO 163/203, and the objectively-defined risk was either known or so obvious that it should have been known.

320. As a direct and proximate result of these acts of patent infringement, Fujitsu, AMD, Sony, and Toshiba have encroached on the exclusive rights of Plaintiffs and their licensees to practice the '212 patent, for which Plaintiffs are entitled to at least a reasonable royalty.

COUNT IV

Patent Infringement of U.S. Patent No. 5,001,367

321. Plaintiffs repeat and re-allege each and every allegation of paragraphs 1-320 as though fully set forth herein.

322. The '367 patent is valid and enforceable.

323. Fujitsu, AMD, Elpida, SK Hynix, Micron, ProMOS, Sony and Toshiba have at no time, either expressly or impliedly, been licensed under the '367 patent.

324. Upon information and belief, to the extent any marking or notice was required by 35 U.S.C. § 287, Plaintiffs have complied with the requirements of that statute by providing actual or constructive notice to Fujitsu, AMD, Elpida, SK Hynix, Micron, ProMOS, Sony, and Toshiba of their alleged infringement. Upon information and belief, prior to July 4, 2008, no commercial products embodying the '367 patent were ever made, offered for sale, or sold within the United States with permission from, or under the authority of, Thunderbird and/or Plaintiffs. Upon information and belief, Plaintiffs surmise that any express licensees of the '367 patent have complied with the marking requirements of 35 U.S.C. § 287 by placing a notice of the '367 patent on all goods made, offered for sale, and/or sold within, and/or imported into, the United States that embody one or more claims of that patent.

A. Fujitsu's Infringement of the '367 Patent.

325. Upon information and belief, Fujitsu has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the MBM29LV400TC and other similar semiconductor devices.

326. Upon information and belief, Fujitsu knew or should have known, or acted with willful blindness, of the '367 patent and its infringing conduct at least since August 13, 2008, when Fujitsu was formally placed on notice of its infringement. Specifically, by letter dated March 10, 2008, Plaintiffs' representative, Mr. Silverman, provided Fujitsu's representative, Mr. Masanobu, with a copy of the '367 patent and, by letter dated August 13, 2008, Mr. Silverman informed Fujitsu's representative, Mr. Teraoka, that the MBM29LV400TC and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

B. AMD's Infringement of the '367 Patent.

327. Upon information and belief, AMD has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the AM29LV160DT and other similar semiconductor devices.

328. Upon information and belief, AMD is also liable for the direct infringement of the '367 patent by Spansion that occurred before December 16, 2005, the date of Spansion's initial public offering. Before December 16, 2005, Spansion was a subsidiary of AMD, with AMD owning a controlling share (60 percent) of Spansion. Upon information and belief, prior to Spansion's public offering on December 16, 2005, AMD had the right and ability to control Spansion's infringing acts and received a direct financial benefit from Spansion's infringement. Upon information and belief, prior to December 16, 2005, Spansion Inc. made, used, offered to sell, and/or sold to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the AM29LV160DT and other similar semiconductor devices.

329. Upon information and belief, AMD knew or should have known, or acted with willful blindness, of the '367 patent and its infringing conduct at least since March 26, 2008, when AMD was formally placed on notice of its infringement. Specifically, by letter dated March 26, 2008, Plaintiffs' representative, Mr. Silverman, provided AMD's representative, Mr. Wolin, with a copy of the '367 patent and informed Mr. Wolin that the AM29LV160DT and other similar products infringed one or more patents in the Fast Logic Portfolio.

C. Elpida's Infringement of the '367 Patent.

330. Upon information and belief, Elpida has been directly and literally infringing under 35 U.S.C. § 271(a) and/or indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '367 patent by making, using, offering to sell, and/or selling to customers and/or distributors (directly or through

intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the EDD5108ABTA-6B DDR SDRAM and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Elpida that contain semiconductor devices that include all of the limitations of one or more claims of the '367 patent. Upon information and belief, the EDD5116AFTA-6B-E, EDD2516AKTA-6B, EDD2516AKTA-6BTI, EDD45128163G5, EDD1232AFA-7A-E, EDD45128841G5, EDD2516AKTA-6BTI-E, EDD5108ADTA, EDD2508AKTA-5C, EDD2508AKTA-5B, EDD2508AMTA, EDD1218AATA, EDD5108AFTA-5B, EDD2516AKTA-6B-E, EDD45128163G5-A75-9JF, EDJ1104BASE, EDJ1108BABG, EDJ1108BASE, EDJ1116BABG, EDEJ1116BASE, EBJ21UE8BASA, EBJ21UE8BAU0, EBJ11UE6BASA, EBJ11UE6BAU0, EBJ82HF4B1RA, EBJ41HE4BAFA, EBJ41RE4BAFA, EBJ42RE8BAFA, EBJ20RE4BAFA, EBJ21RE8BAFA, EBJ10RE8BAFA, EBJ21UE8BAFA, EBJ21UE8BAW0, EBJ21EE8BAFA, EBJ10UE8BAFA, EBJ10UE8BAW0, EBJ10EE8BAFA, EBJ10EE8BAW0, EBJ10EE8BAWA, EDE2104ABSE, EDE2108ABSE, EDE2116ABSE, EDE1104ABSE, EDE1104ACSE, EDE1108ABSE, EDE1108ACBG, EDE1108ACSE, EDE1116ABSE, EDE1116ACBG, EDE116ACSE, EDE1116ACSE-6E-E, EDE5108AGBG, EDE5108AGBG-6E-E, EDE5108AJBG, EDE5108AJSE, EDE5116AHSE, EDE5116AJBG, EDE5116AJSE, EDE2508AEBG, EDE2516AEBG, EBE81AF4ABHA, EBE82AF4A1RA, EBE41AE4ABHA, EBE41AE4ACFA, EBE41RE4ABHA, EBE41RE4ACFA, EBE20AE4ABFA, EBE20AE4ACFA, EBE20RE4ABFA, EBE20RE4ACFA, EBE21AD4AJFA, EBE21RD4AJFA, EBE10AD4AJFA, EBE10AE8ACFA, EBE10RD4AJFA, EBE10RE8ACFA, EBE51AD8AJFA, EBE51RD8AJFA, EBE41UF8ABFA,

EBE41EF8ABFA, EBE21UE8ABFA, EBE21UE8ACFA, EBE21UE8ACWA,
EBE21EE8ABFA, EBE21EE8ACFA, EBE21EE8ACWA, EBE10UE8ACFA,
EBE10UE8ACWA, EBE11UD8AHFA, EBE11UD8AHWA, EBE11UD8AJWA,
EBE10EE8ACFA, EBE10EE8ACWA, EBE11ED8AJWA, EBE51UD8AJWA,
EBE51ED8AJWA, EBE41UF8ABDA, EBE21UE8ABDA, EBE21UE8ACSA,
EBE21UE8ACUA, EBE11UD8AJUA, EBE11UE6ACSA, EBE11UE6ACUA,
EBE52UD6AJUA, EBE81FF4ABHT, EBE82FF4A1RQ, EBE41FE4ABHD, EBE41FE4ACFT,
EBE21FD4AJFT, EBE21FE8ACFT, EBE10FE8ACFT, EBE11FD8AJFT, EBE51FD8AJFT,
EDS6416AHTA-75-E, EDS2532JE-75-E, EDS1216AATA-75-E, EDS1232EC-75,
EDS2532EE75E, EDS6416AHTA-6BEH, EDS6416GHTA-10-E, EDS641GHTA-10-E,
EDS2516ADTA-75-E, and EDS2518ADTA-75-E may also infringe the '367 patent.

331. Upon information and belief, Elpida has been directly and equivalently infringing under 35 U.S.C. § 271(a) and/or indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '367 patent by making, using, offering to sell, and/or selling to customers and/or distributors (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the EDD5108ABTA-6B DDR SDRAM and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by Elpida that contain semiconductor devices that include all of the limitations of one or more claims of the '367 patent. Upon information and belief, the EDD5116AFTA-6B-E, EDD2516AKTA-6B, EDD2516AKTA-6BTI, EDD45128163G5, EDD1232AAFA-7A-E, EDD45128841G5, EDD2516AKTA-6BTI-E,

EDD5108ADTA, EDD2508AKTA-5C, EDD2508AKTA-5B, EDD2508AMTA,
EDD1218AATA, EDD5108AFTA-5B, EDD2516AKTA-6B-E, EDD45128163G5-A75-9JF,
EDJ1104BASE, EDJ1108BABG, EDJ1108BASE, EDJ1116BABG, EDEJ1116BASE,
EBJ21UE8BASA, EBJ21UE8BAU0, EBJ11UE6BASA, EBJ11UE6BAU0, EBJ82HF4B1RA,
EBJ41HE4BAFA, EBJ41RE4BAFA, EBJ42RE8BAFA, EBJ20RE4BAFA, EBJ21RE8BAFA,
EBJ10RE8BAFA, EBJ21UE8BAFA, EBJ21UE8BAW0, EBJ21EE8BAFA, EBJ10UE8BAFA,
EBJ10UE8BAW0, EBJ10EE8BAFA, EBJ10EE8BAW0, EBJ10EE8BAWA, EDE2104ABSE,
EDE2108ABSE, EDE2116ABSE, EDE1104ABSE, EDE1104ACSE, EDE1108ABSE,
EDE1108ACBG, EDE1108ACSE, EDE1116ABSE, EDE1116ACBG, EDE116ACSE,
EDE1116ACSE-6E-E, EDE5108AGBG, EDE5108AGBG-6E-E, EDE5108AJBG,
EDE5108AJSE, EDE5116AHSE, EDE5116AJBG, EDE5116AJSE, EDE2508AEBG,
EDE2516AEBG, EBE81AF4ABHA, EBE82AF4A1RA, EBE41AE4ABHA, EBE41AE4ACFA,
EBE41RE4ABHA, EBE41RE4ACFA, EBE20AE4ABFA, EBE20AE4ACFA, EBE20RE4ABFA,
EBE20RE4ACFA, EBE21AD4AJFA, EBE21RD4AJFA, EBE10AD4AJFA, EBE10AE8ACFA,
EBE10RD4AJFA, EBE10RE8ACFA, EBE51AD8AJFA, EBE51RD8AJFA, EBE41UF8ABFA,
EBE41EF8ABFA, EBE21UE8ABFA, EBE21UE8ACFA, EBE21UE8ACWA,
EBE21EE8ABFA, EBE21EE8ACFA, EBE21EE8ACWA, EBE10UE8ACFA,
EBE10UE8ACWA, EBE11UD8AHFA, EBE11UD8AHWA, EBE11UD8AJWA,
EBE10EE8ACFA, EBE10EE8ACWA, EBE11ED8AJWA, EBE51UD8AJWA,
EBE51ED8AJWA, EBE41UF8ABDA, EBE21UE8ABDA, EBE21UE8ACSA,
EBE21UE8ACUA, EBE11UD8AJUA, EBE11UE6ACSA, EBE11UE6ACUA,
EBE52UD6AJUA, EBE81FF4ABHT, EBE82FF4A1RQ, EBE41FE4ABHD, EBE41FE4ACFT,
EBE21FD4AJFT, EBE21FE8ACFT, EBE10FE8ACFT, EBE11FD8AJFT, EBE51FD8AJFT,

EDS6416AHTA-75-E, EDS2532JE-75-E, EDS1216AATA-75-E, EDS1232EC-75, EDS2532EE75E, EDS6416AHTA-6BEH, EDS6416GHATA-10-E, EDS641GHATA-10-E, EDS2516ADTA-75-E, and EDS2518ADTA-75-E may also infringe the '367 patent. These semiconductor devices and/or products containing these semiconductor devices perform substantially the same function as the inventions embodied in one or more claims of the '367 patent in substantially the same way to achieve the same result.

332. Upon information and belief, these semiconductor devices and/or products containing these semiconductor devices have no substantial non-infringing uses, and Elpida had knowledge of the non-staple nature of these semiconductor devices and/or products containing these semiconductor devices and the '367 patent throughout the entire period of its infringing conduct or at least by April 18, 2008, when Elpida was formally placed on notice of its infringement.

D. SK Hynix's Infringement of the '367 Patent.

333. Upon information and belief, SK Hynix has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the HY57V561620LT-8 and other similar semiconductor devices.

334. Upon information and belief, SK Hynix knew or should have known, or acted with willful blindness, of the '367 patent and its infringing conduct at least since September 9, 2008, when SK Hynix was formally placed on notice of its infringement. Specifically, by letter dated May 15, 2008, Plaintiffs' representative, Mr. Silverman, provided SK Hynix's representative,

Mr. Kim, with a copy of the '367 patent and, by letter dated September 9, 2008, Plaintiffs' representative, Ms. Wongso, informed Mr. Kim that the HY5DU12822C, HY5DU12822CTP, HY5PS1G831CFP-Y5, and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

E. Micron's Infringement of the '367 Patent.

335. Upon information and belief, Micron has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the MT47H32M16HW-25E AAT:G, MT4VDDT3264HIY-335J1, and other similar semiconductor devices.

336. Upon information and belief, Micron knew or should have known, or acted with willful blindness, of the '367 patent and its infringing conduct at least since April 18, 2008, when Micron was formally placed on notice of its infringement. Specifically, by letter dated April 11, 2008, Plaintiffs' representative, Mr. Silverman, provided Micron's representative, Mr. Appleton, with a copy of the '367 patent and, by letter dated April 18, 2008, Mr. Silverman informed Mr. Appleton, that the MT46V32M8TG and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

F. ProMOS's Infringement of the '367 Patent.

337. Upon information and belief, ProMOS has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of

inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the BBOT64M8M DDR2 SDRAM, V58C2256164SBT5 DDR SDRAM, and other similar semiconductor devices, and/or other products made, used, sold, offered for sale, or imported by ProMOS that contain semiconductor devices that include all of the limitations of one or more claims of the '367 patent. Upon information and belief, the V58C2512164SBI5, V58C2256804SAT6, V58C2128164SB15, V58C2256804SCI5, V58C2128164SBI5, V58C2512164SAI5, V59C1G01808QA, V59C1G01808QB, V59C1G01168QB, V59C1256164QA, V59C1512164QAL, V59C1512404QA, V59C1512804QA, V59C1512164QA, V59C1512404QB, V59C1512804QB, V59C1512164QB, V59C1512404QC, V59C1512804QC, V59C1512164QC, V916765K24QA, V916765K24QB, V916865K28QB, V916765K24QC, V916866K28QB, V916732J24QA, V916732J24QB, V916732J24QC, V916764K24QA, V916764K24QB, V916764K24QC, V917565K24QA, V917565K24QB, V917665K28QB, V917565K24QC, V917666K28QB, V917564K24QA, V917564K24QB, V917565N24QB, V917565U24QB, V917565N24QC, V917666N28QB, V917666U28QB, V917564U24QA, V917564U24QB, V58C2128804SB, V58C2128164SB, V58C2128804SC, V58C2128164SC, V58C2128804SB, V58C2128164SB, V58C2256324SA, V58C2256404SC, V58C2256804SC, V58C2256164SC, V58C2256164SG, V58C2256804SC, V58C2256164SC, V58C2512404SA, V58C2512804SA, V58C2512164SA, V58C2512804SB, V58C2512164SB, V58C2512804SA, V58C2512164SA, V826765K24SA,

V826765K24SB, V826616J24SA, V826616J24SC, V826632K24SA, V826732J24SA,
V826632K24SC, V826764K24SA, V826664K24SA, V826764K24SB, V826664K24SC,
V827565K24SA, V827565K24SB, V827432K24SA, V827432K24SC, V827464K24SA,
V827564K24SA, V827564K24SB, V827464K24SC, V827565N24SA, V827565N24SB,
V827432U24SA, V827432U24SC, V827564U24SA, V827464N24SA, V827564U24SB,
V827464N24SC, V826765G24SA, V826765G24SB, V826616B24SC, V826732B24SA,
V826632B24SA, V826632B24SC, V826664G24SA, V826764B24SA, V826764B24SB,
V826664G24SC, V54C3128804VBL, V54C3128164VBL, V54C3128804VCL,
V54C3128164VCL, V54C3128804VB, V54C3128164VB, V54C3128804VC,
V54C3128164VC, V54C3128804VB, V54C3128804VC, V54C3128164VB, V54C3128164VC,
V54C3256164VDL, V54C3256404VD, V54C3256804VD, V54C3256164VD,
V54C3256164VG, V54C3256804VD, V54C3256164VD, V54C365164VE, V54C465164VE,
V436632S24VD, V436664S24VD, V56C1128164MC, V55C1128164MC, V55C2128164VA,
V55C2128164VC, V56C1256164MG, V55C1256164MG, V55C2256164VB, V55C3256164VB,
V55C3256164VG, and V55C2256164VG may also infringe the '367 patent.

338. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase ProMOS's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the BBOT64M8M DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '367 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District

and elsewhere within the United States and/or importing into the United States, those semiconductor devices and/or products containing semiconductor devices.

339. Upon information and belief, ProMOS had knowledge of the '367 patent and its infringing conduct at least since April 18, 2008, when ProMOS was formally placed on notice of its infringement. Specifically, by letter to ProMOS's representative, Mr. Chen, dated April 18, 2008, Plaintiffs' representative, Mr. Silverman, provided an exemplary claim chart for ProMOS's DDR2 SDRAM BBOT64M8M, reading one or more claims of the '367 patent on the identified product.

340. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed ProMOS on notice of its infringement, ProMOS has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase ProMOS's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the BBOT64M8M DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM. Upon information and belief, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, ProMOS does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '367 patent. Upon information and belief, ProMOS intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or

providing technical support, replacement parts, or services for these products to these purchasers in the United States.

341. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed ProMOS on notice of its infringement, ProMOS has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase ProMOS's semiconductor devices and/or products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent and that constitute a material part of the claimed invention, including, but not limited to, the BBOT64M8M DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM. Upon information and belief, ProMOS knew, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, ProMOS's semiconductor devices have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '367 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of ProMOS's semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on ProMOS's semiconductor devices and/or products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of ProMOS's semiconductor devices and/or products containing semiconductor devices cannot disable the infringing features of these products. ProMOS's semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of ProMOS's semiconductor devices would be unusual, far-fetched, illusory,

impractical, occasional, aberrant, or experimental. Similarly, ProMOS's products containing semiconductor devices also have no substantial non-infringing use, since they incorporate semiconductor devices with no substantial non-infringing use.

342. Upon information and belief, ProMOS's acts of infringement of the '367 patent have been willful and intentional. Upon information and belief, based on Mr. Silverman's April 18 letter and Plaintiffs' other communications detailed in Part C above, ProMOS acted with an objectively high likelihood that its actions constituted infringement of the '367 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the BBOT64M8M DDR2 SDRAM and V58C2256164SBT5 DDR SDRAM, and the objectively-defined risk was either known or so obvious that it should have been known.

G. Sony's Infringement of the '367 Patent.

343. Upon information and belief, Sony has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the CXD2964GB and other similar semiconductor devices.

344. Upon information and belief, Sony knew or should have known, or acted with willful blindness, of the '367 patent and its infringing conduct at least since April 1, 2009, when Sony was formally placed on notice of its infringement. Specifically, by letter dated March 7, 2008, Plaintiffs' representative, Mr. Silverman, provided a copy of the '367 patent to Sony's representative, Mr. Moriya, and by letter dated April 1, 2009, Plaintiffs' representative,

Ms. Nakagami-Sher, informed Sony's representative, Mr. Sekiguchi, that the CXD2964GB and other similar products infringed one or more of the patents in the Fast Logic Portfolio.

H. Toshiba's Infringement of the '367 Patent.

345. Upon information and belief, Toshiba has been directly infringing under 35 U.S.C. § 271(a), either literally or under the doctrine of equivalents, indirectly infringing, by way of inducement with specific intent under 35 U.S.C. § 271(b) and/or contributory infringement under 35 U.S.C. § 271(c), the '367 patent by making, using, offering to sell, and/or selling to third-party manufacturers, distributors, and consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere within the United States and/or importing into the United States, without authority, products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the Notebook Tecra A6-EZ6411, Projection Television 46HM94, Projection Television 52HM94, Projection Television 62HM94, Projection Television 52HMX94, Projection Television 62HMX94, and other similar products.

346. Upon information and belief, the third-party manufacturers, distributors, and consumers that purchase Toshiba's products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the Notebook Tecra A6-EZ6411, Projection Television 46HM94, Projection Television 52HM94, Projection Television 62HM94, Projection Television 52HMX94, Projection Television 62HMX94, also directly infringe, either literally or under the doctrine of equivalents, under 35 U.S.C. § 271(a), the '367 patent by making, using, offering to sell, and/or selling to third-party distributors or consumers (directly or through intermediaries and/or subsidiaries) in this District and elsewhere

within the United States and/or importing into the United States, those products containing semiconductor devices.

347. Upon information and belief, Toshiba had knowledge of the '367 patent and its infringing conduct at least since December 19, 2008, when Toshiba was formally placed on notice of its infringement. Specifically, by letter to Toshiba's representative, Mr. Mashimo, dated December 19, 2008, Plaintiffs' representative, Ms. Murakami, provided exemplary claim charts for Toshiba's Projection Television 46HM94/52HM94/62HM94 and Projection TV 52HMX94/62HMX94, each reading one or more claims of the '367 patent on the identified products.

348. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has actively induced under 35 U.S.C. § 271(b) direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent, including, but not limited to, the Notebook Tecra A6-EZ6411, Projection Television 46HM94, Projection Television 52HM94, Projection Television 62HM94, Projection Television 52HMX94, Projection Television 62HMX94. Upon information and belief, based on Ms. Murakami's December 19 letter and Plaintiffs' other communications detailed in Part C above, Toshiba does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '367 patent. Upon information and belief, Toshiba intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of these products, creating established distribution channels for these products into the United States, manufacturing these products in

conformity with U.S. laws and regulations, distributing or making available datasheets, instructions, or manuals for these products to these purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

349. Upon information and belief, since at least the above-mentioned date when Plaintiffs formally placed Toshiba on notice of its infringement, Toshiba has contributed under 35 U.S.C. § 271(c) to direct infringement by the third-party manufacturers, distributors, and/or consumers that purchase Toshiba's products containing semiconductor devices that include all of the limitations of one or more claims of the '367 patent and that constitute a material part of the claimed invention, including, but not limited to, the Notebook Tecra A6-EZ6411, Projection Television 46HM94, Projection Television 52HM94, Projection Television 62HM94, Projection Television 52HMX94, Projection Television 62HMX94. Upon information and belief, Toshiba knew, based on Ms. Murakami's December 19 letter and Plaintiffs' other communications detailed in Part C above, that these products were especially made or especially adapted for use in an infringing manner and not staple articles of commerce suitable for substantial non-infringing uses. Upon information and belief, Toshiba's products contain semiconductor devices that have no substantial non-infringing use, since they incorporate the fundamental inventions covered by the '367 patent to perform their functions faster, more efficiently, and/or with less noise. Upon information and belief, each and every use of Toshiba's products containing semiconductor devices necessarily involves the infringing features of the patents-in-suit. Upon information and belief, when users power on Toshiba's products containing semiconductor devices, the infringing features of the patents-in-suit are activated and operate. Upon information and belief, users of Toshiba's products containing semiconductor devices cannot disable the infringing features of

these products. Toshiba's products containing semiconductor devices do not have any substantial non-infringing uses. Alternatively, upon information and belief, any non-infringing use of Toshiba's products containing semiconductor devices would be unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental.

350. Upon information and belief, Toshiba's acts of infringement of the '367 patent have been willful and intentional. Upon information and belief, based on Ms. Murakami's December 19 letter and Plaintiffs' other communications detailed in Part C above, Toshiba acted with an objectively high likelihood that its actions constituted infringement of the '367 patent by refusing to take a license and continuing to sell its semiconductor-based products, including, but not limited to, the Notebook Tecra A6-EZ6411, Projection Television 46HM94, Projection Television 52HM94, Projection Television 62HM94, Projection Television 52HMX94, Projection Television 62HMX94, and the objectively-defined risk was either known or so obvious that it should have been known.

351. Upon information and belief, Elpida, ProMOS, and Toshiba's acts of infringement of the '367 patent have been willful and intentional.

352. As a direct and proximate result of these acts of patent infringement, Fujitsu, AMD, Elpida, SK Hynix, Micron, ProMOS, Sony, and Toshiba have encroached on the exclusive rights of Plaintiffs and their licensees to practice the '367 patent, for which Plaintiffs are entitled to at least a reasonable royalty.

CONCLUSION

353. Plaintiffs are entitled to recover from Defendants the damages sustained by Plaintiffs as a result of Defendants' wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

354. Plaintiffs have incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute create an exceptional case within the meaning of 35 U.S.C. § 285, and Plaintiffs are entitled to recover their reasonable and necessary attorneys' fees, costs, and expenses.

JURY DEMAND

355. Plaintiffs hereby request a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

356. Plaintiffs respectfully request that the Court find in their favor and against Defendants, and that the Court grant Plaintiffs the following relief:

- A. A judgment that each Defendant has infringed the patents-in-suit as alleged herein, directly and/or indirectly by way of inducing or contributing to infringement of such patents;
- B. A judgment for an accounting of all damages sustained by Plaintiffs as a result of the acts of infringement by each Defendant;
- C. A judgment and order requiring each Defendant to pay Plaintiffs damages under 35 U.S.C. § 284, including up to treble damages for willful infringement as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
- D. A judgment and order requiring each Defendant to pay Plaintiffs pre-judgment and post-judgment interest on the damages awarded;
- E. A judgment and order finding this to be an exceptional case and requiring each Defendant to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and

F. Such other and further relief as the Court deems just and equitable.

Dated: June 28, 2013

Respectfully submitted,

Of Counsel:

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