

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of

CERTAIN FLASH MEMORY CHIPS
AND PRODUCTS CONTAINING THE
SAME

Investigation No.
337-TA-_____

**VERIFIED COMPLAINT UNDER SECTION 337
OF THE TARIFF ACT OF 1930, AS AMENDED**

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Taiwan, Republic of China

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Milpitas, CA 95035

Macronix Asia Limited
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Japan

Macronix (Hong Kong) Co., Ltd.
702-703, 7/F, Building 9, Hong Kong Science
Park, 5 Science Park West Avenue, Sha Tin,
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Xizhi, New Taipei City 221, Taiwan

Acer America Corporation
333 West San Carlos Street, Suite 1500
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Asus Computer International
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Fremont, CA 94539

Belkin International, Inc.
12045 E. Waterfront Drive
Playa Vista, CA 90094

D-Link Corporation
No. 289, Sinhu 3rd Road, Neihu District
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D-Link System, Inc.
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Netgear Inc.
350 East Plumeria Drive
San Jose, CA 95134

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11-1 Kamitobo-hokotate-cho, Minami-ku,
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Nintendo of America, Inc.
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I. INTRODUCTION

1. This Complaint is filed by Spansion LLC (“Spansion”) pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”). Spansion respectfully requests that the U.S. International Trade Commission (“Commission”) institute an investigation relating to the unlawful importation into the United States, the sale for importation, and/or the sale within the United States after importation of (a) certain Macronix flash memory chips (“Macronix Chips”) that (i) infringe Spansion’s valid patents, and/or (ii) are made, produced or processed under, or by means of, a process covered by the claims of Spansion’s patents, and (b) products containing the Macronix Chips.

2. The Respondents, defined herein, have violated and continue to violate Section 337 through the importation, sale for importation, and/or the sale within the United States after importation of (a) certain Macronix Chips that (i) infringe Spansion’s valid patents, and/or (ii) are made, produced or processed under, or by means of, a process covered by the claims of Spansion’s patents, and (b) products containing the Macronix Chips. The proposed “Macronix Respondents” are identified in paragraph 15 below. The proposed “Downstream Respondents” are identified in paragraphs 25-32 below.

3. Through the manufacture, sale for importation into the United States, importation, and/or sale within the United States after importation of the Macronix Chips and downstream products containing such chips, Respondents are infringing the following United States Patents (collectively “the Spansion Patents”), all of which are owned by Spansion:

Patent Number	Claims Infringed	Abbreviated Reference	Title
6,369,416	1-3	“the ’416 Patent”	Semiconductor Device with Contacts Having a Sloped Profile
6,900,124	1, 4, 5, 6, 9, and 10	“the ’124 Patent”	Patterning for Elliptical Vss Contact on Flash Memory

7,018,922	1, 4, 5, and 6	“the ’922 Patent”	Patterning for Elongated Vss Contact Flash Memory
6,459,625	1-14	“the ’625 Patent”	Three Metal Process for Optimizing Layout Density
7,151,027	1-14	“the ’027 Patent”	Method and Device for Reducing Interface Area of a Memory Device
6,731,536	1-23	“the ’536 Patent”	Password and Dynamic Protection of Flash Memory Data

4. The unlawful activities of the Respondents include the sale for importation into the United States, importation, and/or sale within the United States after importation of (a) certain Macronix Chips that (i) infringe the Spansion Patents, and/or (ii) are made, produced or processed under, or by means of, a process covered by the claims of the Spansion Patents, and (b) products containing the Macronix Chips.

5. An industry in the United States relating to articles protected by the Spansion Patents exists within the meaning of 19 U.S.C. §§ 1337(a)(2) and 1337 (a)(3). *See* Declaration of James Pak, **Exhibit 1C** to this Complaint (hereinafter “Pak Dec.”) at ¶¶ 49-79.

6. Spansion has invested huge amounts of financial resources and human efforts in developing the technologies covered by the Spansion Patents. Instead of taking a license on these patents or developing their own alternative technologies, the Macronix Respondents have engaged and continue to engage in activities aimed at diverting customers away from Spansion and hurting Spansion’s flash memory sales. These activities include offering infringing competing products at a much lower price and actively publishing and maintaining a series of Application Notes on Macronix’s website teaching customers and potential customers how to replace Spansion memory chips with Macronix ones. For example, one of Macronix’s Application Notes is titled “Replacing Spansion S25FL128S with Macronix MX25L12835F”. *See Exhibit 20*. The Application Note asserts that the Macronix chip has similar “commands, functions, and features ... [and] identical footprints and nearly identical pin out definitions If

common features are used in standard traditional modes, the replacement may need only minimal software modification” *Id.* at 9. A print out of Macronix’s website containing links to similarly titled Application Notes appears at **Exhibit 19**.

7. Spansion seeks, as permanent relief, a general exclusion order excluding from entry into the United States all Macronix Chips that infringe any claim of the Spansion Patents, or are made, produced, or processed under, or by means of the inventions claimed in the Spansion Patents, and products containing such chips. In the alternative, Spansion seeks a permanent limited exclusion order, specifically directed to each named Respondent and its subsidiaries and affiliates, excluding from entry into the United States all Macronix Chips that infringe any claim of the Spansion Patents, or are made, produced, or processed under, or by means of the inventions claimed in the Spansion Patents, and products containing such chips. Spansion also seeks a cease and desist order pursuant to 19 U.S.C. § 1337(f), prohibiting the importation, sale for importation, use, offering for sale, sale after importation, inventory for distribution, distribution, licensing, or otherwise transferring within the United States, of all Macronix Chips that infringe any claim of the Spansion Patents, or are made, produced, or processed under, or by means of the inventions claimed in the Spansion Patents, and downstream products containing those chips.

8. Based on currently available information, the accused Macronix Chips include, but are not limited to, the Macronix Chips identified below in paragraphs 20 to 24. Discovery will likely reveal additional Macronix Chips that practice the asserted claims, and Spansion reserves its rights to identify additional accused chips in the future. Based on currently available information, the accused products also include consumer electronic products that contain an accused Macronix Chip, including, but not limited to, laptops, routers, game cartridges and game

consoles. It is difficult at this time to identify all sources of accused Macronix Chips and all products or product types that contain an accused Macronix Chip and are imported into the U.S. Additional categories of accused consumer electronic products will likely be revealed during discovery, and Spansion reserves all rights to identify additional accused products during this investigation.

II. THE PARTIES

A. The Complainant

9. Complainant Spansion LLC is a wholly owned operating subsidiary company of Spansion, Inc. Spansion LLC is incorporated in Delaware and its headquarters are located at 915 DeGuigne Drive, Sunnyvale, California 94085. Spansion LLC is the owner of the Spansion Patents. *See Exhibits 3, 5, 7, 9, 11, and 13.*

10. Spansion is a leading provider of the flash memory technology at the heart of the world's electronics systems. It is one of the largest companies in the world dedicated to designing, developing, manufacturing, marketing, and selling flash memory solutions. It is also one of the last major manufacturers of flash memory remaining in the United States. Spansion had at least \$900 million in net sales each year.

11. Spansion designs, develops, manufactures, markets, licenses, and sells flash memory technology and solutions for retail, commercial, and institutional customers worldwide. Its flash memory products primarily store data and software code for microprocessors, controllers and other programmable semiconductors which run applications in a broad range of electronics systems. These electronic systems include, for example, computing and communications, automotive and industrial, consumer and gaming, wireless and machine-to-machine devices. As described more fully herein, Spansion manufactures flash memory products that use the technology claimed in the Spansion Patents.

12. Spansion devotes substantial resources to its highly sophisticated research and development program in the United States, and as a result, is a leading innovator in the flash memory technology industry. For example, Spansion has developed a revolutionary charge trapping MirrorBit® flash memory technology, which is designed to provide better manufacturability and scalability than floating-gate technology. Charge trapping technology, including Spansion's MirrorBit® technology, is widely described as the next generation of flash memory. Spansion has also developed various technologies that make flash memory manufacturing more efficient and help increase the density and capacity of flash memory devices.

13. Spansion's ability to compete and its success as a company depend on its ability to innovate and to protect these innovations. To that end, Spansion spends significant sums in the United States on research and development each year relating to products protected by the Spansion Patents. Spansion has made significant investments in the manufacture of products covered by its patents. Spansion maintains fabrication and testing facilities in Austin, Texas that manufacture such products. Spansion also expects to invest even more in research and development based on the technology covered by the Spansion Patents.

14. Spansion's ability to compete also depends on protecting its inventions through patents. Spansion's long-term financial success depends, in significant part, on its ability to establish, maintain, and protect its proprietary technology through enforcement of its patent rights. That ability has been significantly compromised by the acts complained of in this Complaint.

B. The Proposed Respondents

(a) The Macronix Respondents And The Accused Macronix Chips

15. The proposed “Macronix Respondents” include various Macronix entities that either manufacture, sell for importation into the United States, import, and/or sell within the United States after importation Macronix flash memory chips. With respect to the Macronix Respondents, Spansion alleges the following upon information and belief:

(i) Macronix International Co., Ltd. is a corporation organized under the laws of Taiwan and has its principal place of business at No. 16, Li-Hsin Road, Science Park, Hsin-chu, Taiwan, Republic of China. Macronix International Co., Ltd. manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation Macronix Chips.

(ii) Macronix America, Inc. is a wholly owned subsidiary of Macronix International Co., Ltd. It is incorporated in the State of California and has its principal place of business at 680 North McCarthy Blvd., Suite 200, Milpitas, CA 95035. Macronix America, Inc. sells for importation into the United States, imports, and/or sells within the United States after importation Macronix Chips.

(iii) Macronix Asia Limited is a wholly owned subsidiary of Macronix International Co., Ltd. It is organized under the laws of Japan and has its principal place of business at NKF Bldg. 5F, 1-2 Higashida-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa Pref. 210-0005, Japan. Macronix Asia Limited manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation Macronix Chips.

(iv) Macronix (Hong Kong) Co., Ltd. is a wholly owned subsidiary of Macronix International Co., Ltd. It is organized under the laws of Hong Kong and has its

principal place of business at 702-703, 7/F, Building 9, Hong Kong Science Park, 5 Science Park West Avenue, Sha Tin, N.T. Macronix (Hong Kong) Co., Ltd. sells for importation into the United States, imports, and/or sells within the United States after importation Macronix Chips.

16. Macronix's literature groups flash products by family and generation. *See, e.g., Exhibit 14.* Each Macronix NOR Chip is designated with the generation to which it belongs. *Id.* Further, upon information and belief, each "generation" of Macronix Chips refers to a different technology node. A "technology node" refers to the process used to fabricate the chip and each process generally results in the size of the features (individual elements such as transistors) that make up the structures on a flash memory chip being a certain size (*e.g.*, 75 nm, 110 nm, 130 nm, etc., where "nm" means nanometer). Therefore, the process used to manufacture a 110 nm chip is known as a "110 nm process technology." It can also be referred to as a "110 nm technology node" or "110 nm process node."

17. Upon information and belief, all Macronix Chips within a specific generation, or technology node, are fabricated in a substantially identical fashion. Any differences are not relevant to the Spansion Patents at issue.

18. For example, all Macronix NOR Flash Chips with the Generation E designation are in the 110 nm technology node. The NOR flash memory chips within each of Macronix's respective generations, or technology nodes, are manufactured by similar processes and have substantially similar structure.

19. The "Macronix Chips" at issue can be grouped into the following generations of flash memory chips (although this list is not intended to be exhaustive):

Generation F -- Macronix 75 nm NOR Flash Technology Node,

Generation E -- Macronix 110 nm NOR Flash Technology Node,

Generation D -- Macronix 130 nm NOR Flash Technology Node,

Generation C -- Macronix 150 nm NOR Flash Technology Node, and

Macronix XtraROM Family.

20. On information and belief, the following non-exhaustive list of Macronix Chips are in the Macronix 75 nm NOR Flash Technology Node:

Macronix Chip Family – Generation F		
MX25L12835F	MX66U51235F	MX29GA128FH/L
MX25L12873F	MX29VS128F	MX29GA129FH/L
MX25L25635F	MX29GL128FH/L	MX29GA256FH/L
MX25L25735F	MX29GL128FU/D	MX29GA257FH/L
MX66L51235F	MX29GL256FH/L	MX29GA512FH/L
MX25U1635F	MX29GL256FU/D	MX68GA1G0FH/L
MX25U3235F	MX29GL512FH/L	MX25L12855F
MX25U6435F	MX29GL512FU/D	MX25L25655F
MX25U12835F	MX29GL1G0FH/L	
MX25U25635F	MX29GL1G0FU/D	

21. On information and belief, the following non-exhaustive list of Macronix Chips are in the Macronix 110 nm NOR Flash Technology Node:

Macronix Chip Family – Generation E		
MX25L512E	MX25L3235E	MX29GL640ET/B
MX25L5121E	MX25L3273E	MX29GL128EH/L
MX25L1006E	MX25L6435E	MX29LA320EH/L
MX25L1021E	MX25L6473E	MX29LA640EH/L
MX25L2006E	MX25V512E	MX29GA320EH/L
MX25L4006E	MX25V1006E	MX29GA321EH/L
MX25L8006E	MX25V2006E	MX29GA640EH/L
MX25L1606E	MX25V4006E	MX29GA641EH/L
MX25L3206E	MX25V8006E	MX25L1608E
MX25L6406E	MX25U2033E	MX25L3208E
MX25L1026E	MX25U4033E	MX25L3255E
MX25L2026E	MX25U8033E	MX25L6408E
MX25L4026E	MX29LV320ET/B	MX25L6456E
MX25L8035E	MX29LV640ET/B	25L1001
MX25L8036E	MX29NS320E	
MX25L8073E	MX29NS640E	

MX25L1633E	MX29NS128E	
MX25L1635E	MX29GL320EH/L	
MX25L1636E	MX29GL320ET/B	
MX25L1673E	MX29GL640EH/L	

22. On information and belief, the following non-exhaustive list of Macronix Chips are in the Macronix 130 nm NOR Flash Technology Node:

Macronix Chip Family – Generation D	
MX29LV160DT/B	MX29LA321DH/L
MX29LV161DT/B	MX29LA641DH/L
MX29LV321DT/B	MX25L1655D
MX29LA320DH/L	

23. On information and belief, the following non-exhaustive list of Macronix Chips are in the Macronix 150 nm NOR Flash Technology Node:

Macronix Chip Family – Generation C	
MX29F200CT/B	MX29LV400CT/B
MX29F040C	MX29LV800CT/B
MX29F400CT/B	MX29SL402CT/B
MX29F800CT/B	MX29SL800CT/B
MX29LV040C	

24. On information and belief, the following non-exhaustive list of Macronix Chips are in the Macronix XtraROM Family:

Macronix Chip Family - XtraROM	
MX23J512	MX23J2G
MX23J1G	MX23J4G

(b) The Downstream Respondents

25. The proposed “Downstream Respondents” are engaged in the importation, the sale for importation, and/or the sale within the United States after importation of certain products containing Macronix Chips.

(1) The Acer Respondents

26. The proposed “Acer Respondents” include various Acer entities that either manufacture, sell for importation into the United States, import, and/or sell within the United States after importation various consumer electronic devices, including but not limited to laptop computers, containing infringing Macronix Chips. With respect to the Acer Respondents, Spansion alleges the following upon information and belief:

(i) Acer Inc. is a corporation organized under the laws of Taiwan and has its principal place of business at 8F, 88, Sec. 1, Xintai 5th Rd., Xizhi, New Taipei City 221, Taiwan, R.O.C. Acer Inc. manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to laptop computers, containing infringing Macronix Chips.

(ii) Acer America Corporation is a corporation organized under the laws of the State of California and has its principal place of business at 333 West San Carlos Street, Suite 1500, San Jose, CA 95110. Acer America Corporation is a wholly-owned subsidiary of Acer Inc. Acer America Corporation sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to laptop computers, containing infringing Macronix Chips.

(2) The Asus Respondents

27. The proposed “Asus Respondents” include various Asus entities that either manufacture, sell for importation into the United States, import, and/or sell within the United States after importation various consumer electronic devices, including but not limited to

wireless routers, containing infringing Macronix Chips. With respect to the Asus Respondents, Spansion alleges the following upon information and belief:

(i) ASUSTek Computer Inc. is a corporation organized under the laws of Taiwan and has its principal place of business at No. 15, Li-Te Rd., Beitou District, Taipei 112, Taiwan, R.O.C. ASUSTek Computer Inc. manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips.

(ii) Asus Computer International (America) is a corporation organized under the laws of the State of California and has its principal place of business at 800 Corporate Way, Fremont, CA 94539. Asus Computer International (America) is a wholly-owned subsidiary of ASUSTek Computer Inc. Asus Computer International (America) sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips.

(3) Belkin International, Inc.

28. Spansion alleges upon information and belief that Belkin International, Inc. is a corporation organized under the laws of the State of Delaware and has its principal place of business at 12045 E. Waterfront Drive, Playa Vista, CA 90094. Belkin International, Inc. manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips.

(4) The D-Link Respondents

29. The proposed “D-Link Respondents” include various D-Link entities that either manufacture, sell for importation into the United States, import, and/or sell within the United States after importation various consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips. With respect to the D-Link Respondents, Spansion alleges the following upon information and belief:

(i) D-Link Corporation is a corporation organized under the laws of Taiwan and has its principal place of business at No. 289, Sinhu 3rd Road, Neihsu District, Taipei City, 114 Taiwan. D-Link Corporation manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips.

30. D-Link System, Inc. is wholly owned subsidiary of D-Link Corporation. It is a corporation organized under the laws of the State of California and has its principal place of business at 17595 Mt. Herrmann Street, Fountain Valley, CA 92708. D-Link System, Inc. sells for importation into the United States, imports, and/or sells within the United States after importation various consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips.

(5) Netgear Inc.

31. Spansion alleges upon information and belief that Netgear Inc. is a corporation organized under the laws of the State of Delaware and has its principal place of business at 350 East Plumeria Drive, San Jose, CA 95134. Netgear Inc. manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation various

consumer electronic devices, including but not limited to wireless routers, containing infringing Macronix Chips.

(6) The Nintendo Respondents

32. The proposed “Nintendo Respondents” include various Nintendo entities that either manufacture, sell for importation into the United States, import, and/or sell within the United States after importation various consumer electronic devices, including but not limited to Nintendo Wii U game consoles, 3DS gaming devices, and 3DS game cartridges, containing infringing Macronix Chips. With respect to the Nintendo Respondents, Spansion alleges the following upon information and belief:

(i) Nintendo Co., Ltd. is a corporation organized under the laws of Japan and has its principal place of business at 11-1 Kamitobo-hokotate-cho, Minami-ku, Kyoto, Japan. Nintendo Co., Ltd. manufactures, sells for importation into the United States, imports, and/or sells within the United States after importation certain game consoles, handheld gaming devices, and game cartridges, including but not limited to Nintendo Wii U game consoles, 3DS gaming devices, and 3DS game cartridges, containing infringing Macronix Chips.

(ii) Nintendo of America, Inc. is a corporation organized under the laws of the State of Washington and has its principal place of business at 4600 150th Avenue NE, Redmond, WA 98052. Nintendo America, Inc. is a wholly-owned subsidiary of Nintendo Co., Ltd. Nintendo of America, Inc. sells for importation into the United States, imports, and/or sells within the United States after importation certain game consoles, handheld gaming devices, and game cartridges, including but not limited to Nintendo Wii U game consoles, 3DS gaming devices, and 3DS game cartridges, containing infringing Macronix Chips.

III. THE TECHNOLOGY AT ISSUE¹

33. In general, the Spansion Patents cover various aspects of what is known as flash memory technology. Flash memory is a type of electronic memory known as “non-volatile memory,” which retains information even in the absence of a power source. Even without power, a single flash memory “cell” can retain information for many years. For example, in cell phones, personal information such as names and telephone numbers and multimedia such as music, video, and photos can be stored in the phone’s flash memory and will remain in that memory even when the phone is turned off. In contrast, other types of memory, such as dynamic random-access memory (“DRAM”), lose data if electrical power is removed.

34. A flash memory cell stores information in the form of electrical charge(s). Thus, conventional flash memory cells are typically programmed by injecting electrons (the charge) into the cell. Conversely, a flash memory cell can be erased by removing or neutralizing the electrons. A flash memory cell can be read to determine the presence or absence of electrical charge(s).

35. Each flash memory cell includes a charge-storage element and special circuitry that allows a charge to be placed into and removed from the charge-storage element. In conventional flash memory products, the charge-storage element is a “floating gate,” which is a conducting material surrounded by an insulator. The insulator prevents the electrical charge from escaping, allowing the cell to retain information for long periods of time. In newer flash memory products, the charge-storage element may be a material such as silicon nitride that is known to “trap” a charge. One of the advantages of “charge trapping” or MirrorBit® technology

¹ The description of the technology at issue is provided for purpose of general information and understanding and is not meant to be a position with respect to claim construction and/or other technical aspects of patent law.

is that the charge-storage element is thinner and the cell is easier to shrink in physical size as newer products employ smaller and smaller memory cells.

36. When evaluating flash memory solutions, manufacturers consider cost (typically expressed in cost per bit of information), read access time, write speed, endurance (i.e., number of program/erase cycles that a product can tolerate before malfunctioning), and long-term data retention.

37. The cost-effectiveness of a flash memory product is directly related to how densely cells can be packed together. Mass-market applications require as low cost per bit as possible. Flash memory is manufactured by creating groups of memory cells and their respective control circuitry (known as a “die”) on silicon wafers. Minimizing the surface that a bit of information occupies on the wafer reduces the cost per bit. Making the flash memory cells smaller and placing them closer together (i.e., increasing their density) reduces this occupied surface.

38. However, shrinking the flash memory cells and reducing the distance between the flash memory cells creates a number of technological challenges. As cells shrink in size and are packed closer together, there is greater chance that neighboring cells will interact or interfere with one another, causing information to be stored or read incorrectly. Therefore, certain flash memory cell characteristics, such as the geometry of the cells and the isolation of the cells, must be tightly controlled even where the cell is only nanometers in size. Another problem is that the application of relatively high voltages over small distances creates the possibility of electrical leakages or interferences between adjacent cells. The on-going trend to manufacture these products smaller and more inexpensively leads to other problems as well, some of which are addressed in the Spansion Patents.

39. The technologies described in the Spansion Patents relate generally to how to structure the memory cells, how to isolate the memory cells, and how to manufacture and operate the memory cells in a way that makes the chip containing those memory cells smaller, faster, less expensive, and more reliable. The Spansion Patents also cover technology on how to provide multiple levels of security protection to sectors of a memory chip.

IV. THE PATENTS AT ISSUE AND NON-TECHNICAL DESCRIPTION OF THE PATENTS²

A. The '416 Patent

40. United States Patent No. 6,369,416 titled "Semiconductor Device with Contacts Having a Sloped Profile," issued on April 9, 2002. The '416 Patent expires on September 23, 2019, and is based on United States Patent Application No. 09/404,394 filed on September 23, 1999.

41. Spansion owns, by assignment, all right, title, and interest in and to the '416 Patent. Copies of the assignments of the '416 Patent from the inventors to Advanced Micro Devices, Inc. ("AMD") and from AMD to Spansion are attached as **Exhibit 3**.³ There is no foreign patent, foreign patent application (not already issued as a patent), or foreign patent application that has been denied, abandoned or withdrawn corresponding to this patent.

42. A certified copy of the '416 Patent has been submitted as **Exhibit 2**. A copy of the U.S. Patent and Trademark Office file history for the '416 Patent, as well as three (3) copies,

² The non-technical description of the asserted patents is provided for purpose of general information and understanding and is not meant to be a position with respect to claim construction and/or other technical aspects of patent law.

³ Complainant has ordered a certified copy of the assignment and will submit it immediately upon receipt.

are submitted with this Complaint as **Appendix A**⁴, and four (4) copies of the applicable pages of each technical reference mentioned in the file history are submitted with this Complaint as **Appendix G**.

43. The '416 Patent addresses contact holes and the need to reduce the size of the memory die layout. Generally speaking, contacts are features that create a conduction path from one layer of a semiconductor device to another. Traditionally, flash memory devices included contact holes with sidewalls that were perpendicular to the substrate. When gate stacks or other nearby features are positioned closely together to reduce the size of the memory die, the space or amount of the insulating layer between a contact (contact hole) with perpendicular sidewalls and the gate stacks or nearby feature is reduced. This reduction increases the risk of charge or current leakage between nearby features and also increases the degree of disturbance on the cell behavior during read or write operations caused by the electric field from the adjacent contacts.

44. The '416 Patent addresses this problem. Specifically, the '416 Patent is directed to a semiconductor device including a plurality of gate stacks, an insulating layer substantially surrounding the gate stacks, and at least one contact disposed within the insulating layer, the contact having a side with a sloped profile forming an angle between the side of the contact and surface of a substrate of less than 88 degrees. In one embodiment of the invention, the angle between the second side of the contact and surface of a substrate is substantially the same as the first. In one embodiment, the angle of the slope is between 82 and 88 degrees. In a preferred embodiment, the insulating layer is better able to electrically insulate the contact from the gate stack.

⁴ Complainant has ordered a certified copy of the file history and will submit it immediately upon receipt.

45. The invention of the '416 Patent facilitates higher density of devices while reducing charge gain and loss through the contact as well as the cell disturbance caused by the adjacent contact.

46. The '416 Patent has one (1) independent claim and three (3) dependent claims. An exemplary claim chart, showing how Spansion's products practice the asserted independent claim of the '416 Patent, thereby providing the basis for the domestic industry relating to the asserted claims of the '416 Patent, is attached hereto as **Exhibits 75-77**.

47. A list of licensees under the '416 Patent is included in **Exhibit 78C**.

B. The '124 Patent

48. United States Patent No. 6,900,124 titled "Patterning for Elliptical V_{ss} Contact on Flash Memory," issued on May 31, 2005. The '124 Patent expires on September 3, 2023, and is based on United States Patent Application No. 10/654,739 filed on September 3, 2003.

49. Spansion owns, by assignment, all right, title, and interest in and to the '124 Patent. Copies of the assignments of the '124 Patent from the inventors to Advanced Micro Devices ("AMD") and from AMD to Spansion are attached as **Exhibit 9**.⁵ There is no foreign patent, foreign patent application (not already issued as a patent), or foreign patent application that has been denied, abandoned or withdrawn corresponding to this patent.

50. A certified copy of the '124 Patent has been submitted as **Exhibit 8**. A certified copy of the U.S. Patent and Trademark Office file history for the '124 Patent, as well as three (3) copies, are submitted with this Complaint as **Appendix B**, and four (4) copies of the applicable

⁵ Complainant has ordered a certified copy of the assignment and will submit it immediately upon receipt.

pages of each technical reference mentioned in the file history are submitted with this Complaint as **Appendix H**.

51. The '124 Patent addresses challenges encountered as flash memory devices are made more dense and cost effective. A pervasive trend in modern integrated circuit manufacturing is to produce semiconductor devices, such as flash memory devices, that are as small as possible. The reduction in size of flash memory devices requires high resolution technology and a sufficient depth of focus ("DOF") in lithography to transfer the desired pattern onto the wafer. DOF is the range of lens-wafer distances over which line widths are maintained within specifications and resist profiles are adequate. Contacts are one of the smallest structures in integrated circuits, and DOF margin is particularly critical. As the contact is reduced in size, DOF margin becomes so small that it is a concern as to whether lithography tools are capable of maintaining the image in focus to ensure that patterns are formed with precise dimensions and repeatability in large-volume manufacturing environment.

52. Another concern in integrated circuit manufacturing is proper alignment of each layer of patterned structures relative to the patterned structures below. Large misalignment can lead to an electrical short with an unintended structure, causing degradation in yield. For example, a contact that is intended to land on a bitline in flash memory can short to the adjacent bitline if the misalignment is large.

53. The '124 Patent describes a solution to these challenges through a method of forming contact holes so that focus is maintained as contact hole sizes shrink while also improving the overlay margin. In the invention of the '124 patent, the elliptical/elongated contact only is reduced along the minor axis. The length of the major axis can be increased as the length of the minor axis is decreased, thereby maintaining the contact area above a threshold

value to minimize DOF issues. Furthermore, since the elliptical/elongated contact can overcome DOF issues by maintaining feature size above the threshold value, the minor axis can be reduced to a greater extent than can the radius of a circular contact, thereby providing greater tolerance to misalignment along the direction of the minor axis.

54. The '124 Patent has two (2) independent claims and eight (8) dependent claims. An exemplary claim chart showing how Spansion's products practice the asserted independent claims of the '124 Patent, thereby providing the basis for the domestic industry relating to the asserted claims of the '124 Patent, is attached hereto as **Exhibits 73-74**.

55. A list of licensees under the '124 Patent is included in **Exhibit 78C**.

C. The '922 Patent

56. United States Patent No. 7,018,922 titled "Patterning for Elongated V_{ss} Contact Flash Memory," issued on March 28, 2006. The '922 Patent expires on September 3, 2023, and is based on United States Patent Application No. 10/968,713 filed on October 19, 2004. The '922 Patent claims priority as a continuation of United States Patent Application No. 10/654,739, filed on September 3, 2003, which issued as the '124 Patent.

57. Spansion owns, by assignment, all right, title, and interest in and to the '922 Patent. Copies of the assignments of the '922 Patent from the inventors to Advanced Micro Devices ("AMD") and from AMD to Spansion are attached as **Exhibit 11**.⁶ There is no foreign patent, foreign patent application (not already issued as a patent), or foreign patent application that has been denied, abandoned or withdrawn corresponding to this patent.

⁶ Complainant has ordered a certified copy of the assignment and will submit it immediately upon receipt.

58. A certified copy of the '922 Patent has been submitted as **Exhibit 10**. A certified copy of the U.S. Patent and Trademark Office file history for the '922 Patent, as well as three (3) copies, are submitted with this Complaint as **Appendix C**, and four (4) copies of the applicable pages of each technical reference mentioned in the file history are submitted with this Complaint as **Appendix I**.

59. The '922 Patent addresses the same challenges as the '124 Patent, which arise as flash memory devices are made faster, more dense, and more efficient. (*See* '922 Patent at 2:12-25, 2:28-37, 2:43-56, and also the preceding discussion regarding the challenges addressed by the '124 Patent.)

60. The '922 Patent has one (1) independent claim and six (6) dependent claims. An exemplary claim chart showing how Spansion's products practice the asserted independent claim of the '922 Patent, thereby providing the basis for the domestic industry relating to the asserted claims of the '922 Patent, is attached hereto as **Exhibit 71-72**.

61. A list of licensees under the '922 Patent is included in **Exhibit 78C**.

D. The '625 Patent

62. United States Patent No. 6,459,625 titled "Three Metal Process for Optimizing Layout Density," issued on October 1, 2002. The '625 Patent expires on January 23, 2021, and is based on United States Patent Application No. 09/767,341 filed on January 23, 2001. The '625 Patent claims priority to U.S. Provisional Patent Application No. 60/185,149, filed on February 25, 2000.

63. Spansion owns, by assignment, all right, title, and interest in and to the '625 Patent. Copies of the assignments of the '625 Patent from the inventors to AMD and from AMD

to Spansion are attached as **Exhibit 5**.⁷ There is no foreign patent, foreign patent application (not already issued as a patent), or foreign patent application that has been denied, abandoned or withdrawn corresponding to this patent.

64. A certified copy of the '625 Patent has been submitted as **Exhibit 4**. A copy of the U.S. Patent and Trademark Office file history for the '625 Patent, as well as three (3) copies of the file history are submitted with this Complaint as **Appendix D**⁸ and four (4) copies of the applicable pages of each technical reference mentioned in the file history are submitted with this Complaint as **Appendix J**.

65. Prior to the invention of the '625 Patent, the ability to shrink flash memory die was limited in part by the layout of the circuitry in the periphery area. Any gains in layout density that resulted from smaller electrical components were being offset by the increased number of electrical connections between these components. The use of two metal layers in the prior art required metal lines to bend around each other and other electrical components to make the necessary interconnections, which is an inefficient use of space. Even within three layers, the lack of the plurality metal lines across an entire periphery area running in substantially one direction caused congestion within the metal layers and further limited the ability to shrink the periphery area of the flash memory die. The '625 Patent addresses these problems.

66. The '625 Patent describes optimizing electrical interconnection of electrical components in a periphery area of a memory device, thereby minimizing the periphery area.

⁷ Complainant has ordered a certified copy of the assignment and will submit it immediately upon receipt.

⁸ Complainant has ordered a certified copy of the file history and will submit it immediately upon receipt.

The '625 Patent is directed to interconnections of the circuitry of a periphery area of a flash memory device with three or more metal layers.

67. In an embodiment of the invention of the '625 Patent, the first metal layer lines are used to make partial electrical interconnections of circuit components within subcircuits, the second metal layer lines are used to complete such connections, and third metal layer lines are used to connect subcircuits.

68. In another embodiment of the invention, the first metal layer lines are substantially in one direction, the second metal layer lines are perpendicular to the first metal layer lines and the third metal layer lines are perpendicular to the second metal layer lines (and thus, parallel to the first metal layer lines). A dielectric layer is deposited between the first, second and third metal layer lines. A plurality of contact holes may be used to electrically interconnect the first, second and third metal layer lines at predetermined locations. The circuit components of the subcircuits may be arranged in rows substantially parallel to the first metal layer lines.

69. The '625 Patent has three (3) independent claims and eleven (11) dependent claims. An exemplary claim chart, showing how Spansion's products practice the asserted independent claims of the '625 Patent, thereby providing the basis for the domestic industry relating to the asserted claims of the '625 Patent, is attached hereto as **Exhibit 69-70**.

70. A list of licensees under the '625 Patent is included in **Exhibit 78C**.

E. The '027 Patent

71. United States Patent No. 7,151,027 titled "Method and Device for Reducing Interface Area of a Memory Device," issued on December 19, 2006. The '027 Patent expires on June 30, 2024, and is based on United States Patent Application No. 10/859,369 filed on June 1, 2004.

72. Spansion owns, by assignment, all right, title, and interest in and to the '027 Patent. Copies of the assignments of the '027 Patent from the inventors to FASL LLC and from FASL to Spansion are attached as **Exhibit 13**.⁹ There is no foreign patent, foreign patent application (not already issued as a patent), or foreign patent application that has been denied, abandoned or withdrawn corresponding to this patent.

73. A certified copy of the '027 Patent has been submitted as **Exhibit 12**. A certified copy of the U.S. Patent and Trademark Office file history for the '027 Patent, as well as three (3) copies, are submitted with this Complaint as **Appendix E**, and four (4) copies of the applicable pages of each technical reference mentioned in the file history are submitted with this Complaint as **Appendix K**.

74. One important goal of the semiconductor industry is to reduce the size of memory devices. In reducing the size of operational components (e.g., a memory array) and periphery components, an important consideration is the interface between the operational components and periphery components. Traditional fabrication processes for forming memory devices typically form the operational components and the periphery components using separate processes, creating a number of steps in the interface area. These steps can lead to the formation of unwanted stringer spacers which, if peeled or removed from the memory device, can short circuit the device.

75. Before the invention of the '027 Patent, to eliminate the risks caused by stringer spacers, manufacturers usually fabricated a salicide block over the interface area. The salicide

⁹ Complainant has ordered a certified copy of the assignment and will submit it immediately upon receipt.

block, however, required additional area of the interface, limiting the ability to reduce the size of the interface area.

76. The '027 Patent addresses the above problem by forming a poly-2 layer (or a combination of poly-1 and poly-2 layers) above an interface area during fabrication of a memory device to control or reduce the occurrence of steps and stringer spacers.

77. The '027 Patent has two (2) independent claim and twelve (12) dependent claims. An exemplary claim chart, showing how Spansion's products practice the asserted independent claims of the '027 Patent, thereby providing the basis for the domestic industry relating to the asserted claims of the '027 Patent, is attached hereto as **Exhibit 67-68**.

78. A list of licensees under the '027 Patent is included in **Exhibit 78C**.

F. The '536 Patent

79. United States Patent No. 6,731,536 titled "Password and Dynamic Protection of Flash Memory Data," issued on May 4, 2004. The '536 Patent expires on July 6, 2022, and is based on United States Patent Application No. 10/091,767 filed on March 7, 2002. The '536 Patent claims priority to United States Provisional Patent Application No. 60/273,615, filed on March 5, 2001.

80. Spansion owns, by assignment, all right, title, and interest in and to the '536 Patent. Copies of the assignments of the '536 Patent from the inventors to AMD and from AMD to Spansion are attached as **Exhibit 7**.¹⁰ There is no foreign patent, foreign patent application (not already issued as a patent), or foreign patent application that has been denied, abandoned or withdrawn corresponding to this patent.

¹⁰ Complainant has ordered a certified copy of the assignment and will submit it immediately upon receipt.

81. A certified copy of the '536 Patent has been submitted as **Exhibit 6**. A copy of the U.S. Patent and Trademark Office file history for the '536 Patent, as well as three (3) copies, are submitted with this Complaint as **Appendix F**, and four (4) copies of the applicable pages of each technical reference mentioned in the file history are submitted with this Complaint as **Appendix L**.

82. The '536 Patent describes a multi-level security protection system for the sectors of a flash memory device. For example, the invention of the '536 Patent provides a dynamic level of protection for each sector of a memory device by using dynamic protection bits. The invention further provides a persistent level of protection for each sector of a memory device by using persistent protection bits. The persistent protection bits cannot be changed unless a lock bit has the correct value. The patent also describes a password protection mode for protecting a memory device, where a password is required to change the value of the lock bit.

83. The '536 Patent has three (3) independent claim and twenty five (25) dependent claims. An exemplary claim chart, showing how Spansion's products practice the asserted independent claims of the '536 Patent, thereby providing the basis for the domestic industry relating to the asserted claims of the '536 Patent, is attached hereto as **Exhibit 65-66**.

84. A list of licensees under the '536 Patent is included in **Exhibit 78C**.

V. INSTANCES OF IMPORTATION AND SALE

85. Upon information and belief, the Macronix Respondents do not manufacture the Macronix Chips inside the United States. Pak Dec. at ¶ 5. Instead, the Macronix Respondents design, manufacture, test and assemble the Macronix Chips at their foreign facilities. The Macronix Respondents then sell for importation into the United States, import, and/or sell within the United States after importation Macronix Chips. *Id.* Imported Macronix Chips are available for purchase in the United States. *See* **Exhibit 15; Exhibit 16**. On Spansion's behalf, Macronix

Chips were acquired in the United States from U.S. retailer DigiKey. Pak Dec. at ¶ 8; **Exhibit 17**.

86. Additionally, upon information and belief, the Macronix Respondents sell Macronix Chips to Downstream Respondents and other third parties for assembly into downstream products, including video game consoles and cartridges, wireless routers, laptop computers, digital cameras, and many other devices. Such devices are sold for importation into the United States, imported, and/or sold within the United States after importation, and, on information and belief, the Macronix Respondents are aware of such activities.

87. For example, Spansion acquired an Acer Aspire V5 laptop computer on July 17, 2013, at Office Depot in San Carlos, California. Pak Dec. at ¶ 18; **Exhibit 25**. The box and labeling for the Acer Aspire V5 laptop computer states that the product was “Made in China.” Pak Dec. at ¶ 19; **Exhibit 25**. One Macronix Chip (MX25L6406EMZI-12G) was found inside the Acer Aspire V5 laptop computer. Pak Dec. at ¶ 19; **Exhibit 25**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within Acer Aspire V5 laptop computers.

88. Spansion acquired an Asus RT-N56U wireless router on July 13, 2013, at Fry’s Electronics in Sunnyvale, California, an Asus AC66U wireless router on July 21, 2013, at Fry’s Electronics in Palo Alto, California, an Asus RT-N12 wireless router on July 21, 2013, at Fry’s Electronics in Palo Alto, California, and an Asus RT-N16 wireless router on July 21, 2013, at Fry’s Electronics in Palo Alto, California. Pak Dec. at ¶ 21; **Exhibits 26-29**. The boxes and labeling for the Asus RT-N56U, AC66U, RT-N12, and RT-N16 wireless routers state that the products were “Made in China.” Pak Dec. at ¶ 22-25; **Exhibits 26-29**. A Macronix Chip (MX29LV640EBTI-70G) was found inside the Asus RT-N56U wireless router. Pak Dec. at

¶ 25; **Exhibit 29**. A Macronix Chip (25L1606EM2I-12G) was found inside the Asus RT-AC66U wireless router. Pak Dec. at ¶ 22; **Exhibit 26**. A Macronix Chip (MX25L6406EM2I-12G) was found inside the Asus RT-N12 wireless router. Pak Dec. at ¶ 23; **Exhibit 27**. A Macronix Chip (MX29GL256EH2I-90G) was found inside the Asus RT-N16 wireless router. Pak Dec. at ¶ 24; **Exhibit 28**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within Asus RT-N56U, RT-AC66U, RT-N12, RT-N16 wireless routers.

89. Spansion acquired a Belkin N600 DB wireless router on July 13, 2013, at Fry's Electronics in Sunnyvale, California. Pak Dec. at ¶ 27; **Exhibit 30**. The box and labeling for the Belkin N600 DB wireless router states that the product was "Made in China." Pak Dec. at ¶ 28; **Exhibit 30**. A Macronix Chip (25L6406E) was found inside the Belkin N600 DB wireless router. Pak Dec. at ¶ 28; **Exhibit 30**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within Belkin N600 DB wireless routers.

90. Spansion acquired a D-Link DIR-655 Xtreme N Gigabit wireless router on July 21, 2013, at Fry's Electronics in Palo Alto, California. Pak Dec. at ¶ 30; **Exhibit 31**. The box and labeling for the D-Link DIR-655 Xtreme N Gigabit wireless router states that the product was "Made in China." Pak Dec. at ¶ 31; **Exhibit 31**. A Macronix Chip (25L6406EMI-12G) was found inside the D-Link DIR-655 Xtreme N Gigabit wireless router. Pak Dec. at ¶ 31; **Exhibit 31**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within D-Link DIR-655 Xtreme N Gigabit wireless routers.

91. Spansion acquired a Netgear WNR1000 wireless router on July 13, 2013, at Fry's Electronics in Sunnyvale, California. Pak Dec. at ¶ 33; **Exhibit 32**. The box and labeling for the

Netgear WNR1000 wireless router states that the product was “Made in Vietnam.” Pak Dec. at ¶ 34; **Exhibit 32**. A Macronix Chip (MX25L3206E) was found inside the Netgear WNR1000 wireless router. Pak Dec. at ¶ 34; **Exhibit 32**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within Netgear WNR1000 wireless routers.

92. Spansion acquired a Nintendo Wii U on July 13, 2013, at Best Buy in Mountain View, California. Pak Dec. at ¶ 36; **Exhibit 35**. The box and labeling for the Nintendo Wii U states that the product was “Made in China.” Pak Dec. at ¶ 39; **Exhibit 35**. A Macronix Chip (MX25L4006EZNI) was found inside the console of this Wii U product. Pak Dec. at ¶ 39; **Exhibit 35**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within the Wii U product.

93. Spansion acquired a Nintendo 3DS Game Cartridge (“Legend of Zelda”) on July 16, 2013, at Fry’s Electronics in Sunnyvale, California. Pak Dec. at ¶ 36; **Exhibit 33**. The box and labeling for this Nintendo 3DS Game Cartridge states that the product was “Made in Japan.” Pak Dec. at ¶ 37; **Exhibit 33**. Two Macronix Chips (MX23J4GC0-75H and 25L1001) were found inside the game cartridge. Pak Dec. at ¶ 37; **Exhibit 33**.

94. Spansion also acquired a Nintendo 3DS Game Cartridge (“Mario Tennis Open”) on July 13, 2013, at Best Buy in Mountain View, California. Pak Dec. at ¶ 36; **Exhibit 34**. The box and labeling for this Nintendo 3DS Game Cartridge states that the product was “Made in Japan.” Pak Dec. at ¶ 38; **Exhibit 34**. Two Macronix Chips (MX23J4GC0-75H and 25L4001) were found inside the game cartridge. Pak Dec. at ¶ 38; **Exhibit 34**. Thus, Macronix Chips have been imported into the United States, and will likely continue to be imported into the U.S., within the Nintendo 3DS Game Cartridge products.

95. Spansion cannot identify all devices sold for importation into the United States, imported, and/or sold within the United States after importation that contain infringing Macronix Chips. Macronix continues to market its infringing chips worldwide via the Internet to prospective importers of infringing downstream products, and continues to provide instructions via the Internet to encourage such manufacturers to substitute infringing Macronix Chips for Spansion chips in their products. Spansion reserves its right to supplement its allegations, to amend the Complaint, and to add respondents in the future.

VI. UNLAWFUL AND UNFAIR ACTS OF PROPOSED RESPONDENTS

96. Upon information and belief, Respondents are engaged in the manufacture, importation, sale for importation, and/or sale within the United States after importation of the Macronix Chips and/or downstream products containing such chips that directly or indirectly infringe the Spansion Patents either literally or under the doctrine of equivalents, or are made, produced, or processed under, or by means of, the inventions claimed in the Spansion Patents. These activities by Respondents constitute a violation of Section 337.

97. Upon information and belief, Respondents were aware of the Spansion Patents or will have knowledge of the Spansion Patents and their infringing activity based on the public filing of this Complaint. At a minimum, the Notice of Investigation that will be published by the Commission in the Federal Register, should the Commission initiate an investigation, will serve as notice to the Respondents of the Spansion Patents and their infringing activities, should the Respondents contend that they did not previously have knowledge of the Spansion Patents or their infringing activity.

98. Upon information and belief, the Macronix Respondents are encouraging and/or inducing downstream companies worldwide to switch from Spansion chips to the infringing Macronix Chips by, for example, publicly publishing and maintaining a series of Application

Notes explaining and directing how to do so. For example, one of Macronix's Application Notes is titled "Replacing Spansion S25FL128S with Macronix MX25L12835F". See **Exhibit 20**.

99. Upon information and belief, the Macronix Respondents manufacture, sell for importation, import, and/or sell within the United States after importation the Macronix Chips that constitute a material part of the inventions claimed in the Spansion Patents, knowing the same to be especially made and/or adapted for use in an infringement of the Spansion Patents, and not staple articles of commerce suitable for substantial non-infringing use. The Macronix Respondents are contributory infringers of the Spansion Patents.

A. Infringement of the '416 Patent

100. The Macronix Chips that are sold for importation, imported, and/or sold after importation by the Macronix Respondents and/or the Downstream Respondents infringe claims 1-3 of the '416 Patent, either literally or under the doctrine of equivalents, and/or are made, produced, or processed under, or by means of, a process covered by claims 1-3 of the '416 Patent.

101. For example, claim charts applying independent claim 1 of the '416 Patent to the Macronix XtraROM family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 53**.

102. Claim charts applying independent claim 1 of the '416 Patent to the Macronix Generation F NOR Flash Memory (75 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 49**.

103. Claim charts applying independent claim 1 of the '416 Patent to the Macronix Generation E NOR Flash Memory (110 nm Technology Node) family of products illustrate how

the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 50**.

104. Claim charts applying independent claim 1 of the '416 Patent to the Macronix Generation D NOR Flash Memory (130 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 51**.

105. Claim charts applying independent claim 1 of the '416 Patent to the Macronix Generation C NOR Flash Memory (150 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 52**.

106. Claim charts applying independent claim 1 of the '416 Patent to the Macronix XtraROM family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 53**.

107. Thus, all named Respondents have violated Section 337 with respect to the '416 Patent.

B. Infringement of the '124 Patent

108. The Macronix Chips that are sold for importation, imported, and/or sold after importation by the Macronix Respondents and/or the Downstream Respondents infringe claims 1, 4, 5, 6, 9, and 10 of the '124 Patent, either literally or under the doctrine of equivalents, and/or are made, produced, or processed under, or by means of, a process covered by claims 1, 4, 5, 6, 9, and 10 of the '124 Patent.

109. For example, claim charts applying independent claims 1 and 6 of the '124 Patent to the Macronix XtraROM family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 54**.

110. At present, Complainant has identified the Macronix Respondents and the Nintendo Respondents as respondents that have violated Section 337 with respect to the '124 Patent. However, because it is difficult to identify all sources of infringing Macronix Chips, and discovery may reveal that additional Downstream Respondents also have violated Section 337 with respect to the '124 Patent, Spansion reserves all rights to supplement its allegations to identify additional respondents that have violated Section 337 with respect to this patent.

C. Infringement of the '922 Patent

111. The Macronix Chips that are sold for importation, imported, and/or sold after importation by the Macronix Respondents and/or the Downstream Respondents infringe claims 1, 4, 5, and 6 of the '922 Patent, either literally or under the doctrine of equivalents, and/or are made, produced, or processed under, or by means of, a process covered by claims 1, 4, 5, and 6 of the '922 Patent.

112. For example, claim charts applying independent claim 1 of the '922 Patent to the Macronix XtraROM family of products illustrate how the claims cover the Macronix Chips and/or the fabrication process. These charts can be found at **Exhibit 55**.

113. At present, Complainant has identified the Macronix Respondents and the Nintendo Respondents as respondents that have violated Section 337 with respect to the '922 Patent. However, because it is difficult to identify all sources of infringing Macronix Chips, and discovery may reveal that additional Downstream Respondents also have violated Section 337 with respect to the '922 Patent, Spansion reserves all rights to supplement its allegations to identify additional respondents that have violated Section 337 with respect to this patent.

D. Infringement of the '625 Patent

114. The Macronix Chips that are sold for importation, imported, and/or sold after importation by the Macronix Respondents and/or the Downstream Respondents infringe claims

1-14 of the '625 Patent, either literally or under the doctrine of equivalents, and/or are made, produced, or processed under, or by means of, a process covered by claims 1-14 of the '625 Patent.

115. For example, claim charts applying independent claims 1, 6, and 10 of the '625 Patent to the Macronix Generation F NOR Flash Memory (75 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 56**.

116. Claim charts applying independent claims 1, 6, and 10 of the '625 Patent to the Macronix Generation E NOR Flash Memory (110 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 57**.

117. Claim charts applying independent claims 1, 6, and 10 of the '625 Patent to the Macronix Generation D NOR Flash Memory (130 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 58**.

118. Claim charts applying independent claims 1, 6, and 10 of the '625 Patent to the Macronix Generation C NOR Flash Memory (150 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 59**.

119. Thus, all named Respondents have violated Section 337 with respect to the '625 Patent.

E. Infringement of the '027 Patent

120. The Macronix Chips that are sold for importation, imported, and/or sold after importation by the Macronix Respondents and/or the Downstream Respondents infringe claims

1-14 of the '027 Patent, either literally or under the doctrine of equivalents, and/or are made, produced, or processed under, or by means of, a process covered by claims 1-14 of the '027 Patent.

121. For example, claim charts applying independent claims 1 and 8 of the '027 Patent to the Macronix Generation F NOR Flash Memory (75 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 60**.

122. Claim charts applying independent claims 1 and 8 of the '027 Patent to the Macronix Generation E NOR Flash Memory (110 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 61**.

123. Claim charts applying independent claims 1 and 8 of the '027 Patent to the Macronix Generation D NOR Flash Memory (130 nm Technology Node) family of products illustrate how the claims cover the Macronix Chips and/or fabrication process. These charts can be found at **Exhibit 62**.

124. Thus, all named Respondents have violated Section 337 with respect to the '027 Patent.

F. Infringement of the '536 Patent

125. The Macronix Chips that are sold for importation, imported, and/or sold after importation by the Macronix Respondents and/or the Downstream Respondents directly or indirectly infringe claims 1-23 of the '536 Patent, either literally or under the doctrine of equivalents, and/or are made, produced, or processed under, or by means of, a process covered by claims 1-23 of the '536 Patent.

126. As noted above, upon information and belief, Respondents were aware of the Spansion Patents or will have knowledge of the Spansion Patents and their infringing activity based on the public filing of this Complaint. At a minimum, the Notice of Investigation that will be published by the Commission in the Federal Register, should the Commission initiate an investigation, will serve as notice to the Respondents of the Spansion Patents and their infringing activities, should the Respondents contend that they did not previously have knowledge of the Spansion Patents or their infringing activity.

127. Additionally, upon information and belief, the Macronix Respondents manufacture, sell for importation, import, and/or sell within the United States after importation of the Macronix Chips that constitute a material part of the inventions claimed in the Spansion Patents, knowing the same to be especially made and/or adapted for use in an infringement of the Spansion Patents, and not staple articles of commerce suitable for substantial non-infringing use.

128. The Macronix Respondents publish and provide to customers datasheets that, among other things, instruct customers to practice the claimed inventions of the '536 Patent.

129. For example, the Macronix datasheet for the MX29GL128E chip instructs the user how to implement protection features that practice the claims of the '536 Patent. *See, e.g., Exhibit 22* at 25-30. This chip was acquired on behalf of Spansion from DigiKey.

130. The datasheet for MX25L25635FZ2I-10G chip has similar language. *See Exhibit 21*. This chip was acquired on behalf of Spansion from DigiKey.

131. The datasheet for MX29GL256EH2I-90G chip has similar language. *See Exhibit 79*. This chip was found in the Asus product discussed above.

132. Taking the MX29GL128E and MX25L25635FZ2I-10G chips as a representative Macronix Chips that practice the advanced protection feature, claim charts applying independent

claims 1 and 20 of the '536 Patent to the MX29GL128E and MX25L25635FZ2I-10G chips can be found at **Exhibits 63 and 64**, respectively. Upon information and belief, a large number of additional Macronix Chips directly or indirectly infringe the claims of the '536 Patent, and/or are made, produced, or processed under, or by means of, the inventions claimed in the '536 Patent.

133. At present, Complainant has identified the Macronix Respondents and the Asus Respondents as respondents that have violated Section 337 with respect to the '536 Patent. However, because it is difficult to identify all sources of infringing Macronix Chips, and discovery may reveal that additional Downstream Respondents also have violated Section 337 with respect to the '536 Patent, Spansion reserves all rights to supplement its allegations to identify additional respondents that have violated Section 337 with respect to this patent.

VII. HARMONIZED TARIFF SCHEDULE INFORMATION

134. These Macronix Chips and products containing those chips are believed to fall within, at least, Heading Nos. 8523 (Discs, tapes, solid-state non-volatile storage devices, "smart cards" and other media for the recording of sound or of other phenomena, whether or not recorded, including matrices and masters for the production of discs, but excluding products of Chapter 37), 8471 (Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included:), 8517 (Telephone sets, including telephones for cellular networks or for other wireless networks; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network) other than transmission or reception apparatus of heading 8443, 8525, 8527 or 8528; parts thereof), 8525 (Transmission apparatus for radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; television cameras, digital cameras and video

camera recorders:), and 9504 (Video game consoles and machines, articles for arcade, table or parlor games, including pinball machines, bagatelle, billiards and special tables for casino games; automatic bowling alley equipment; parts and accessories thereof:) of the Harmonized Tariff Schedule of the United States (“HTS”). More specifically, the flash memory chips may be classified under Subheading Nos. 8523.51.00 (Semiconductor media: solid-state non-volatile storage devices); 8471.30.01 (Portable automatic data processing machines, weighing not more than 10 kg, consisting of at least a central processing unit, a keyboard and a display); 8517.62.0050 (Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus: other); 8525.80.40 (Digital still image video cameras); and 9504.50.00 (Video game consoles and machines, other than those of subheading 9504.30, and parts and accessories thereof). These HTS numbers are intended for illustration only and are not intended to be restrictive of the devices or products accused.

VIII. DOMESTIC INDUSTRY

135. In accordance with 19 U.S.C. § 1337(a)(2) and 1337(a)(3), an industry exists in the United States with respect to each of the Spansion Patents. Spansion has significant investments in plant and equipment and in labor and capital in the United States relating to products covered by the Spansion Patents.

136. Spansion has a facility in Austin, Texas that manufactures and tests wafers used to make chips that are sold commercially. The Spansion products that practice the claimed inventions of the Spansion Patents make up the overwhelming majority of the production output at those facilities. Spansion has invested and continues to invest substantial amounts of capital into those facilities. Spansion employs numerous persons at these facilities and incurs significant expenses in yearly salary and operational expenses associated with these facilities. Spansion

products that practice the claims of the Spansion Patents are manufactured and tested at those facilities.

137. Facts and information relating to the domestic industry for each Spansion Patent are set forth in the Pak Declaration at ¶¶ 65-79 and in **Exhibits 65-77**. Pursuant to Rule 210.12(a)(9)(x), visual representations of the involved domestic articles and processes are included in the Pak Declaration and in **Exhibits 25-35 and 65-77**.

IX. RELATED LITIGATION

138. This Complaint is being filed concurrently with a complaint for patent infringement in United States District Court, Northern District of California, styled *Spansion LLC v. Macronix International Co., Ltd. et al.*

139. One or more of the Spansion Patents were the subject matter of the following litigations or proceedings:

Case/Investigation No.	Patents at Issue	Summary of the Litigation
<i>In re certain Flash Memory Chips and Products Contain the Same</i> , Inv. No. 337-TA-735	the '922, '124, '625, and '416 Patents	Case was assigned to Hon. ALJ Robert K. Rogers and the Investigation was terminated upon parties' settlement before hearing.
<i>Spansion LLC v. Samsung Electronics Co., Ltd. et al</i> , Case No. 1-10-cv-00881 (VAED Alexandria)	the '027 Patent	Case was dismissed upon parties' settlement. Markman hearing was held, but no claim construction order was issued by the court.
<i>Spansion LLC v. Samsung Electronics Co. Ltd. et al</i> , Case Nos. 3-10-cv-03446 and 5-10-cv-03446 (CAND San Jose)	the '416, '625, '124, and '922 Patents	Case was stayed pursuant to 28 U.S.C. § 1659 and then dismissed pursuant to parties' settlement. No Markman hearing was held and no claim construction order was issued by the court.

There have been no other litigations involving the Spansion Patents.

X. REQUESTED REMEDIAL ORDERS

A. General Exclusion Order

140. Pursuant to 19 U.S.C. § 1337(d)(2)(A) and (B), Spansion seeks a general exclusion order to exclude all infringing Macronix Chips and downstream products containing such chips. Issuance of a general exclusion order is appropriate because (i) it is necessary to prevent circumvention of an exclusion order limited to products of the named Respondents, and (ii) there is a pattern of violation of Section 337 through the manufacture, sale for importation into the United States, importation, and/or sale within the United States after importation of a broad range of infringing products, and it is difficult to identify the source of those infringing products.

(a) Prevention of Circumvention of a Limited Exclusion Order

141. Flash memory chips have been widely used in a broad range of electronic devices, including but not limited to cell phones, wireless routers, digital cameras and camcorders, laptop and tablet computers, and GPS systems. Wherever there is a need for data storage on a non-volatile basis, there is a demand for flash memory chips.

142. Largely due to the low labor costs in certain areas of Asia (such as China, Taiwan, Korea, and Malaysia), companies often choose to manufacture their products in those areas and then import them into the United States for distribution and sale. Various marketing and distribution networks have been established in the United States for exploitation by foreign companies, including a large number of foreign manufacturers that make electronic devices for importation into the United States.

143. On information and belief, the Macronix Respondents are trying to get as many of those companies as possible to incorporate infringing Macronix Chips into such products, knowing these products will be sold for importation or imported into the United States.

144. In fact, by publishing and maintaining a series of Application Notes on their website, the Macronix Respondents actively encourage companies to migrate away from Spansion chips and use infringing Macronix Chips in their products. *See Exhibits 19-20.* As those Application Notes teach, companies are capable of replacing Spansion chips with Macronix Chips in their products at minimal effort and/or expense.

145. Also, entry into the market for downstream products containing Macronix Chips is relatively easy. Some of the downstream products require relatively simple and inexpensive manufacturing. There are a large number of downstream product manufacturers in Asia which are using non-Macronix Chips, but can easily switch to Macronix Chips.

146. Thus, in the absence of a general exclusion order, the Macronix Respondents may succeed in having many of their infringing chips imported into the United States in downstream products from companies not named, including companies that do not use Macronix Chips at present.

147. In addition, the Downstream Respondents, as well as other existing and potential manufacturers of downstream products containing Macronix Chips, can readily change importers. Similarly, importers can readily switch between foreign suppliers. As a result, foreign manufacturers and importers could easily circumvent a limited exclusion order directed against only named manufacturers and importers.

(b) There is a Pattern of Violation of Section 337 and it is Difficult to Identify the Source of Infringing Downstream Products

148. Upon information or belief, a substantial number of companies worldwide purchase infringing Macronix Chips and incorporate those chips into downstream products, or purchase such downstream products containing infringing Macronix Chips. These companies cause such goods to be sold for importation into the United States, imported, and/or sold after

importation into the United States. Spansion has identified in this Complaint companies for which it has evidence of sale for importation, importation, and/or sale after importation into the United States of infringing Macronix Chips and products containing such chips, establishing a pattern of violation. Upon information and belief, other companies are capable of shifting, at minimal effort and/or expense, a substantial amount of their production to downstream products containing Macronix Chips and then selling them for importation, importing them, or selling them after importation into the United States.

149. Upon information and belief, there is a worldwide supply of downstream products containing Macronix Chips. A substantial number of underutilized downstream product manufacturing facilities exist worldwide. As a result, downstream products can be made in numerous locations around the world.

150. Marketing and distribution networks for downstream products containing Macronix Chips are available to foreign manufacturers. Many large distributors in the United States can and already do handle downstream products containing Macronix Chips.

151. In addition, downstream products containing Macronix Chips, including those of Respondents, are regularly offered for sale and sold online through numerous Internet sources. In addition to Respondents' websites, products containing Macronix Chips are offered for sale and sold via the websites of distributors and retailers.

152. As can be seen, the sales for importation into the United States, importation, and/or importation for sales within the United States of infringing Macronix Chips and the downstream products containing infringing Macronix Chips create a pattern of violation of Section 337. It is difficult to identify all the sources of infringing Macronix Chips and downstream products containing infringing Macronix Chips due to the number and constant

turnover of the distributors and retailers of infringing Macronix Chips and manufacturers, distributors, and retailers of downstream products containing such chips.

153. At least for the foregoing reasons, the issuance of a general exclusion order excluding all infringing Macronix Chips and products containing such chips is appropriate in this matter.

B. Limited Exclusion Order

154. At a minimum, pursuant to Section 337(d), if a general exclusion order is not issued in this matter, Spansion respectfully request that a limited exclusion order be entered against each named Respondent and its subsidiaries and affiliates in order to remedy the Respondents' violation of Section 337 and to prevent such future violations by Respondents.

C. Cease and Desist Order

155. Cease and desist orders against all named Respondents are appropriate under Section 337(f), which provides that the Commission may issue a cease and desist orders against any person violating Section 337 in addition to exclusion orders issued under Section 337(d). On information and belief, the Macronix Respondents and the Downstream Respondents maintain domestic inventory of Macronix Chips and/or downstream products containing Macronix Chips. Moreover, where, as here, the infringing chips are easily concealed, and it is difficult to identify the source of infringing products, a cease and desist order is necessary to ensure compliance with the requested exclusion orders. At least for the foregoing reasons, cease and desist orders are appropriate to remedy, and prevent, the widespread violation of Spansion's patent rights.

XI. RELIEF

WHEREFORE, by reason of the foregoing, Spansion respectfully requests that the United States International Trade Commission:

A. Institute an immediate investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, to determine that Respondents have violated Section 337 based on the sale for importation into the United States, importation, and/or sale within the United States after importation of Macronix Chips and/or downstream products containing such chips that infringe the Spansion Patents or are made, produced, or processed under, or by means of, the inventions claimed in the Spansion Patents;

B. Schedule and conduct a hearing on permanent relief pursuant to 19 U.S.C. § 1337(d) and (f);

C. Issue a permanent general exclusion order, pursuant to 19 U.S.C. § 1337(d), excluding from entry into the United States all Macronix Chips and downstream products containing Macronix Chips that infringe any claim of the Spansion Patents or are made, produced, or processed under, or by means of, the inventions claimed in the Spansion Patents; or, in the alternative, issue a permanent limited exclusion order specifically directed to each named Respondent and its subsidiaries and affiliates, excluding from entry into the United States all Macronix Chips and all of Respondents' downstream products containing such Macronix Chips that infringe any claim of the Spansion Patents or are made, produced, or processed under, or by means of, the inventions claimed in the Spansion Patents;

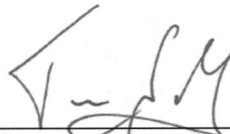
D. Issue permanent cease and desist orders against each named respondent, pursuant to 19 U.S.C. § 1337(f), prohibiting the importation, sale for importation, use, offering for sale, sale after importation, inventory for distribution, distribution, licensing, or otherwise transferring within the United States, of Macronix Chips and products containing such Macronix Chips that infringe any claim of the Spansion Patents or are made, produced, or processed under, or by means of, the inventions claimed in the Spansion Patents;

E. Impose a bond upon Respondents' importation of infringing flash memory chips and downstream products containing such chips during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j) to prevent further injury to Spansion; and

F. Issue such other and further relief as the Commission deems just and proper under the law, based upon the facts determined by the investigation and the authority of the Commission.

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Respectfully submitted,



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