

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

In the Matter of

CERTAIN ELECTRONIC DEVICES,
SEMICONDUCTOR DEVICES, AND
COMPONENTS THEREOF

Inv. No. 337-TA-_____

**COMPLAINT OF BELL SEMICONDUCTOR, LLC
UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED**

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Exhibit No.	Designation	Description
1A	Public	Certified Copy of United States Patent No. 7,231,626
1B	Public	Certified Copy of United States Patent No. 7,260,803
2A	Public	Certified Copy of Assignment of United States Patent No. 7,231,626
2B	Public	Certified Copy of Assignment of United States Patent No. 7,260,803
3	Public	NXP Semiconductors NV Company Info
4	Public	NXP Proof of Foreign Manufacture
5	Public	NXP Proof of Domestic Purchase
6	Public	SMC Networks, Inc., d/b/a IgniteNet Company Info
7	Public	SMC Networks Proof of Foreign Manufacture
8	Public	SMC Networks Proof of Domestic Purchase
9	Public	Micron Technology, Inc. Company Info
10	Public	Micron Technology Proof of Foreign Manufacture
11	Public	Micron Technology Proof of Domestic Purchase
12	Public	NVIDIA Corporation Company Info
13	Public	NVIDIA Proof of Foreign Manufacture
14	Public	NVIDIA Proof of Purchase and Domestic Shipment
15	Public	Advanced Micro Devices, Inc., Company Info
16	Public	Advanced Micro Devices Proof of Foreign Manufacture
17	Public	Advanced Micro Devices Proof of Domestic Purchase
18	Public	Acer, Inc., Company Info
19	Public	Acer America Corp. Company Info
20	Public	Acer Proof of Foreign Manufacture
21	Public	Acer Proof of Domestic Purchase
22A	Public	Infineon Technologies AG Company Information
22	Public	Infineon Technologies America Corp. Company Information
23	Public	Infineon Proof of Purchase
24	Public	2014 Infineon AG Annual Report
25	Public	2019 Infineon PowerPoint Presentation
26	Public	Qualcomm Technologies, Inc. Company Info
27	Public	Motorola Mobility LLC Company Information
28	Public	Motorola Proof of Foreign Manufacture
29	Public	Motorola Proof of Domestic Purchase
30	Public	Western Digital Company Info
31	Public	Western Digital Proof of Foreign Manufacture

32	Public	Western Digital Proof of Domestic Purchase
33	Public	Declaration of Lloyd Linder, Ph.D.
34A	Public	NXP and SMC Networks Respondents' Chart Showing Infringement of U.S. Patent No. 7,149,626
34B	Public	NXP and SMC Networks Respondents' Chart Showing Infringement of U.S. Patent No. 7,260,803
35A	Public	Micron Respondents' Chart Showing Infringement of U.S. Patent No. 7,149,626
35B	Public	Micron Respondents' Chart Showing Infringement of U.S. Patent No. 7,260,803
36A	Public	NVIDIA Respondents' Chart Showing Infringement of U.S. Patent No. 7,149,626
36B	Public	NVIDIA Respondents' Chart Showing Infringement of U.S. Patent No. 7,260,803
37A	Public	AMD and Acer Respondents' Chart Showing Infringement of U.S. Patent No. 7,149,626
37B	Public	AMD and Acer Respondents' Chart Showing Infringement of U.S. Patent No. 7,260,803
38A	Public	Infineon Respondents' Chart Showing Infringement of U.S. Patent No. 7,149,626
38B	Public	Infineon Respondents' Chart Showing Infringement of U.S. Patent No. 7,260,803
39A	Public	Qualcomm and Motorola Respondents' Chart Showing Infringement of U.S. Patent No. 7,149,626
39B	Public	Qualcomm and Motorola Respondents' Chart Showing Infringement of U.S. Patent No. 7,260,803
40A	Public	Western Digital Chart Showing Infringement of U.S. Patent No. 7,149,626
40B	Public	Western Digital Chart Showing Infringement of U.S. Patent No. 7,260,803
41		[Intentionally Omitted]
42	Public	Security Interest Release
43	Confidential	Licensees to the Asserted Patents
44	Confidential	Broadcom License Agreement
45	Public	Broadcom Public Comments
46	Public	Property record for the Broadcom, Inc. Corporate Headquarters in San Jose, CA
47	Public	Property record for Broadcom, Inc. location in Chandler, AZ
48	Public	Property record for Broadcom, Inc. location in Irvine, CA
49	Public	Select job postings for open engineering positions, and currently held engineering positions at Broadcom Headquarters in San Jose, CA

50	Public	Select job postings for open engineering positions, and currently held engineering positions at Broadcom's location in Chandler, AZ
51	Public	Select job postings for open engineering positions, and currently held engineering positions at Broadcom's location in Irvine, CA
52A	Public	Licensee Broadcom's Practice of U.S. Patent 7,231,626 Satisfying Technical Prong of Domestic Industry Requirement
52B	Public	Licensee Broadcom's Practice of U.S. Patent 7,260,803 Satisfying Technical Prong of Domestic Industry Requirement
53	Public	"Cadence Expands Collaboration with Broadcom for 5nm and 7nm Designs"
54	Public	List of Broadcom's U.S. Locations
55	Public	2021 Broadcom Annual Report – Form 10K
56	Public	Select Broadcom job postings for engineering positions related to production of the Domestic Industry Product

Appendix	Designation	Description
A	Public	Prosecution history of U.S. Patent 7,231,626
B	Public	Technical references for U.S. Patent 7,231,626
C	Public	Prosecution history of U.S. Patent 7,260,803
D	Public	Technical references for U.S. Patent 7,260,803

I. INTRODUCTION

1. Complainant Bell Semiconductor, LLC (“Bell Semiconductor”) requests that the United States International Trade Commission (“the Commission”) institute an investigation into violations of Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, against Respondents NXP Semiconductors, N.V., NXP, B.V., and NXP USA, Inc.;¹ SMC Networks, Inc.;² Micron Technology, Inc.;³ Nvidia Corporation;⁴ Advanced Micro Devices, Inc.;⁵ Acer, Inc. and Acer America Corp.;⁶ Infineon Technologies AG and Infineon Technologies America Corp.;⁷ Qualcomm Technologies, Inc.;⁸ Motorola Mobility LLC,⁹ and Western Digital Technologies, Inc.¹⁰ (collectively, “Respondents”).

2. This Complaint is based on Respondents’ unlawful and unauthorized importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of articles and components thereof that infringe, either literally or under the doctrine of equivalents, at least one or more claims of Bell Semiconductor’s United States Patent Nos. and 7,231,626 (“the ’626 Patent”) and 7,260,803 (“the ’803 Patent”) (collectively the Asserted Patents”), attached as Exhibits 1A and 1B respectively.

3. There are two classes of Respondents identified in the Complaint: (1) Circuit

¹ Collectively, “NXP”.

² “SMC”.

³ “Micron”.

⁴ “Nvidia”.

⁵ “AMD”.

⁶ Collectively, “Acer”.

⁷ Collectively, “Infineon”.

⁸ “Qualcomm”.

⁹ “Motorola”.

¹⁰ “Western Digital”.

Design Respondents that sell for or after importation, or import, accused infringing semiconductor articles in violation of Sec. 337(a)(1)(B)(i)–(ii), and (2) Importer Respondents that at least import the accused infringing semiconductor articles as components of electronic devices in violation of Sec. 337(a)(1)(B)(ii).

4. The Circuit Design Respondents and corresponding Importer Respondents, if present, are shown in the chart below:

<u>Circuit Design Respondent</u>	<u>Corresponding Importer Respondent</u>
NXP	SMC
Micron	
Nvidia	
AMD	Acer
Infineon	
Qualcomm	Motorola
Western Digital	

5. The Circuit Respondents directly infringe one or more Asserted Claims of each Asserted Patent listed below with the independent claims in bold:

<u>U.S. Patent No.</u>	<u>Asserted Claims</u>
7,260,803	1-6, and 9-11
7,231,626	1-4

II. Bell Semiconductor’s Long Pedigree of Historical Innovation

6. Bell Semiconductor stems from a long pedigree that began at Bell Labs. Bell Labs sprung out of the Bell System as a research and development laboratory, and eventually became known as one of America’s greatest technology incubators. Bell Labs employees invented the transistor in 1947 in Murray Hill, NJ. It was widely considered one of the most important technological breakthroughs of the time, earning the inventors the Nobel Prize in Physics. Bell Labs made the first commercial transistors at a plant in Allentown, PA. For decades, Bell Labs

licensed its transistor patents to companies throughout the world, creating a technological boom that has led to the use of transistors in the semiconductor devices prevalent in most electronic devices today.

7. Bell Semiconductor, a successor to Bell Labs's pioneering efforts, owns over 1,900 semiconductor-related patents (1,500 of which are United States patents), including the Asserted Patents. This patent portfolio of semiconductor-related inventions was developed over many years by some of the world's leading semiconductor companies, including Bell Labs, Lucent Technologies, Agere Systems, and LSI Logic and LSI Corporation ("LSI"), and Broadcom Corp. This portfolio reflects technology that underlies many important innovations in the development of semiconductors and integrated circuits for high-tech products, including smartphones, computers, wearables, digital signal processors, IoT devices, automobiles, broadband carrier access, switches, network processors and wireless connectors.

8. Principals of Bell Semiconductor all worked at Bell Labs' Allentown facility, and have continued the rich tradition of innovating, licensing, and helping the industry at large since those early days at Bell Labs. For example, Bell Semiconductor's CTO was a LSI Fellow and Broadcom Fellow. He is known throughout the world as an innovator with more than 300 patents to his name, and he has a sterling reputation for helping semiconductor fabs improve their efficiency. Bell Semiconductor's CEO took a brief hiatus from the semiconductor world to work with Nortel Networks in the telecom industry during its bankruptcy. His efforts saved the pensions of tens of thousands of Nortel retirees and employees. In addition, several Bell Semiconductor executives previously served as engineers at many of these companies and were personally involved in creating the ideas claimed throughout Bell Semiconductor's extensive patent portfolio.

III. Relief Sought By Bell Semiconductor

9. Respondents sell for importation, import, and sell after importation semiconductor devices and electronic devices that contain semiconductor devices (collectively, the “Accused Products”) that use technology owned by Bell Semiconductor. Respondents’ activities with respect to the importation into the United States, the sale for importation into the United States, and/or the sale within the United States after importation of the Accused Products, as described more fully below with respect to each individual Respondent, are unlawful under 19 U.S.C. § 1337(a)(1)(B)(i) and/or (ii), in that they constitute the infringement of one or more valid and enforceable claims of each Asserted Patent, and importation of an article which is made, produced, or processed, or by means of, and/or made by a process covered by the claims in each Asserted Patent. Additionally, a domestic industry as required by 19 U.S.C. §§ 1337(a)(2) and (3) exists in the United States relating to the articles protected by the Asserted Patents.

10. Bell Semiconductor seeks relief from the Commission in the form of a limited exclusion order against the individual Respondents excluding from entry into the United States the Accused Products that infringe the Asserted Patents.

11. Bell Semiconductor further seeks as relief cease-and-desist orders, pursuant to 19 U.S.C. § 1337(d), that prohibit each Respondent from, inter alia, importing, selling, offering for sale (including via the internet or electronic mail), advertising (including via the internet or electronic mail), or transferring Accused Products.

12. Bell Semiconductor further seeks to impose a bond pursuant to 19 U.S.C. § 1337(e) and (j) upon Respondents’ importation of the Accused Products that are made using any Asserted Claim of either Asserted Patent during the 60-day Presidential review period.

IV. THE PARTIES

A. Complainant Bell Semiconductor

11. Complainant Bell Semiconductor, LLC is a Delaware limited liability company having its headquarters at One West Broad Street, Suite 901, Bethlehem, PA 18018. Bell Semiconductor owns and licenses patent portfolios comprised of inventions originating mainly from legacy Bell companies, including Broadcom, Lucent, LSI, and Agere Systems.

B. Respondents

1. The NXP and SMC Networks Respondents

12. Bell Semiconductor is informed and believes Respondent NXP N.V. has its principal place of business and headquarters at 60 High Tech Campus, Eindhoven, Netherlands, 5656 AG. Exhibit 3. Bell Semiconductor is informed and believes that Respondent NXP N.V. imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the NXP LS1043A Quad-Core Networking Processor devices (“NXP Accused Product”), either directly or by directing the co-respondent NXP entities to do so.

13. Bell Semiconductor is informed and believes Respondent NXP B.V. has its principal place of business and headquarters at 60 High Tech Campus, Eindhoven, Netherlands, 5656 AG. Exhibit 3. Respondent NXP B.V. is a subsidiary of or otherwise controlled by Respondent NXP N.V. Bell Semiconductor is informed and believes that Respondent NXP N.V. imports, sells for importation, and/or sells after importation the NXP Accused Product in the United States.

14. Bell Semiconductor is informed and believes Respondent NXP USA, Inc. (“NXP USA”) has its principal place of business and headquarters at 6501 William Cannon Drive West,

Austin, TX 78735. Exhibit 3. Bell Semiconductor is informed and believes Respondent NXP USA is a subsidiary of or otherwise controlled by Respondent NXP N.V. and/or NXP B.V as to the sale for importation, importation, and/or sale after importation into the United States of the NXP Accused Product. Bell Semiconductor is informed and believes that Respondent NXP USA imports, sells for importation, and/or sells after importation into the United States the NXP Accused Product.

15. Bell Semiconductor is informed and believes SMC Networks has its principal place of business located at 20 Mason, Irvine, CA 92618. Exhibit 6. Respondent SMC Networks imports, sells for importation, and/or sells after importation into the United States products that are manufactured outside of the United States and incorporate the NXP Accused Product, including, without limitation the SMC Networks MetroLinq 2.5G Outdoor 60 GHzPTP + 5GHz radio (“SMC Networks Accused Product”).

2. Micron

16. Bell Semiconductor is informed and believes that Respondent Micron has its principal place of business at 8000 South Federal Way, Post Office Box 6, Boise, ID 83707. Exhibit 9. Bell Semiconductor is informed and believes that Respondent Micron imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the Micron 2200 MTFDHBA256TCK-1AS1AABYY 256GB NVMe PCIe3.0x4 TLC M.2 22x80mm SSD (“Micron Accused Product”).

3. NVIDIA

17. Bell Semiconductor is informed and believes that Respondent Nvidia has its principal place of business at 2788 San Tomas Expressway, Santa Clara, CA 95051. Exhibit 12. Complainant is informed and believes that Respondent NVIDIA imports, sells for importation,

and/or sells after importation into the United States products that are made using the patented method, including at least the NVIDIA GV100-400-A1 device (“NVIDIA Accused Product”).

4. The Advanced Micro Devices and Acer Respondents

18. Bell Semiconductor is informed and believes that Respondent AMD has its principal place of business at 2485 Augustine Drive, Santa Clara, CA 05054 83707. Exhibit 15. Bell Semiconductor is informed and believes that Respondent AMD imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the AMD Ryzen 7 1700 processor and Ryzen 5 processor devices (each of which is an “AMD Accused Product”).

19. Acer, Inc. is a foreign corporation organized and existing under the laws of Taiwan, with its principal place of business at 1F, Sec. 1, Xintai 5th Road, Xizhi, New Taipei City 221, Taiwan. Exhibit 18. Acer Inc. imports, sells for importation, and/or sells after importation into the United States products that are manufactured outside of the United States that include the Acer Aspire 5 (A515) device that incorporates the infringing AMD Ryzen 5 device supplied by Respondent AMD (“Acer Accused Product”) States. Bell Semiconductor is informed and believes that Acer Inc. does so either directly or by directing co-respondent Acer America Corporation to do so.

20. Acer America Corporation is a corporation organized and existing under the laws of the state of California, with its principal place of business located at 333 West San Carlos Street, San Jose, California 95110. Exhibit 19. Bell Semiconductor is informed and believes that Respondent Acer America Corporation is a subsidiary of or otherwise controlled by Respondent Acer Inc. as to the sale for importation, importation, and/or sale after importation into the United States of the Acer Accused Product. Acer America Corporation imports, sells for importation,

and/or sells after importation into the United States the Acer Accused Product that incorporates the AMD Accused Product. Bell Semiconductor is informed and believes Acer America Corporation manages the North American operations, which includes operations within the United States, of Respondent Acer, Inc.

5. Infineon

21. Bell Semiconductor is informed and believes that Respondent Infineon Technologies AG (“Infineon AG”) has its principal place of business at Biberger Strasse 93, 82008 Neubiberg, Germany. Exhibit 22A. Bell Semiconductor is informed and believes that Respondent Infineon AG imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the Infineon AURIX TC277T64F200SCA Microcontroller (“Infineon Accused Product”).

22. Bell Semiconductor is informed and believes that Respondent Infineon Technologies American Corp. (“Infineon America”) has its principal place of business at 640 N McCarthy Blvd, Milpitas, CA 95035. Exhibit 22. Bell Semiconductor is informed and believes that Respondent Infineon imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the Infineon Accused Product. Bell Semiconductor is informed and believes that Respondent Infineon America is a subsidiary of or otherwise controlled by Respondent Infineon AG as to the sale for importation, importation, and/or sale after importation into the United States of the Infineon Accused Product.

6. The Qualcomm and Motorola Respondents

23. Bell Semiconductor is informed and believes that Respondent Qualcomm has its principal place of business at 5775 Morehouse Drive, San Diego, CA 92121. Exhibit 26. Bell

Semiconductor is informed and believes that Respondent Qualcomm imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the 5G RF Transceiver SDR865 device and Snapdragon 665 device (each of which is a “Qualcomm Accused Product”).

24. Bell Semiconductor is informed and believes Respondent Motorola has its principal place of business and headquarters at 222 W. Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654. Exhibit 27. Bell Semiconductor is informed and believes that Respondent Motorola imports, sells for importation, and/or sells after importation the Moto G Stylus device in the United States that includes a Snapdragon 665 Qualcomm Accused Product (“Motorola Accused Product”).

7. Western Digital

25. Bell Semiconductor is informed and believes Respondent Western Digital has its principal place of business and headquarters at 5601 Great Oaks Parkway, San Jose, California 95119. Exhibit 30. Bell Semiconductor is informed and believes that Respondent Western Digital imports, sells for importation, and/or sells after importation into the United States products that are made using the patented method, including at least the WD Black SN 850 NVMe SSD (“Western Digital Accused Product”).

V. THE ASSERTED PATENTS, TECHNOLOGY, AND PRODUCTS AT ISSUE

A. Non-Technical Description of the Asserted Patents

1. Non-Technical Description of the '626 Patent

26. Traditionally, the process flow for IC design is highly linear, with each phase of the design process depending on the previous steps. Accordingly, when revisions to portions of the physical design are made, as typically happens numerous times during the design process, all

the subsequent steps typically need to be redone in their entirety for at least the present layer, if not all the layers of the entire device. This is because regardless of the size or extent of the revision to the physical design, the changes must be merged into a much larger integrated circuit design and then the remaining steps of the design process flow re-run.

27. Before the inventions claimed in the '626 patent, the typical turnaround time for implementing a change to the physical design for cutting edge devices was approximately one week regardless of the size of the change. This is extremely inefficient in most instances where the change relates to only a small fraction of the overall design. *See* Exhibit 1A at 3:16–18 & Fig. 1.

28. The '626 patent's inventors solved this problem by defining a window that encloses a change specified by the revision to physical design. The window defines an area that is less than the area of the entire circuit design. Only the nets within that window are routed pursuant to the revision, leaving the remaining nets in the design unaffected. Then, the results of that incremental routing are inserted into a copy of the original IC design to produce a revised IC design that effects the physical design change without needing to redo the entire process flow.

29. The inventions disclosed in the '626 patent provide many advantages over the prior art. In particular, they provide a simple and efficient method for ensuring that revisions to the physical design of the IC do not unduly delay the completion of the design process. *See* Exhibit 1A at 3:19–24. As mentioned above, this is very beneficial because it substantially reduces the run time of the routing tools and related follow-on steps of the layout portion of the design process flow (such as calculation of net delay, design rule check, and parasitic extraction). Thus, it shortens the overall design timeline, and avoids cost overruns and delays, making it less costly to make changes later in the design process or more often. *See id.* Given the

aforementioned increased complexity of circuit designs and the corresponding delays from design changes, these efficiency gains have become more and more important in completing the design process without affecting time-to-market. These significant advantages are achieved through the use of the patented inventions and thus the '626 patent presents significant commercial value for chip designers.

2. Non-Technical Description of the '803 Patent

30. Semiconductor devices include different kinds of materials to function as intended. For example, these devices typically include both metal (i.e., conductor) and insulator materials, which are deposited or otherwise processed sequentially in layers to form the final device. These layers—and the interconnects and components formed within them—have gotten much smaller over time, increasing the performance of these devices dramatically. These devices have also become exceedingly more complex with increasing numbers of layers and increasingly smaller device features, all to enable increasingly faster devices operating at higher clock speeds. As a result, it has become more important to reduce the chance of short circuits and to keep the layers planar as the device is being built because defects and warpage can cause fabrication issues and malfunctioning of the device. Manufacturers use a process called Chemical Mechanical Planarization/Polishing (“CMP”) to smooth out the surface of the device periodically between deposition and/or etching of each layer. This allows subsequent layers to be built and connected more easily with fewer opportunities for short circuits or other errors that render the device defective. CMP functions best when there is a certain density and variance of the same material on the surface of the chip. This is because different materials will be “polished” away at different rates, leading to erosion or dishing on the surface. To reduce this problem “dummy” interconnect material, also known as “dummy fill,” is typically inserted

into low-density regions of the device to increase the overall uniformity of the structures on the surface of the layer and reduce the density variability across the surface of the device. Dummy fill is typically inserted by a dummy fill tool, which checks the metal density of the device and places dummy metal into regions that do not meet the metal density needed to minimize the likelihood that CMP processes cause the device to malfunction.

31. Prior to development of the methodology described in the '803 patent, if a designer requested even a small change to a semiconductor device, the dummy fill pattern must be thrown out. This is problematic because it can take up to 30 hours to run the dummy fill tool to create the dummy fill pattern. By starting over, the entire device design layout could be delayed by 30 hours or more. This issue is exacerbated with every subsequent change that again causes the dummy fill process to begin again from scratch. Such an iterative, time-consuming process negatively impacts the fabrication schedule and causes costs to go up.

32. The inventors of the '803 patent, understood the drawbacks of this process and set out to develop a more efficient method for inserting dummy metal into a circuit design after portion(s) of it have changed. They ultimately conceived of a dummy fill insertion procedure that did not require having to rerun the dummy fill tool whenever any change was made to the layout. The claimed invention, after a portion of the design data has changed, first performs a check to determine whether any dummy metal objects intersect with any other objects in the design data. Then any intersecting dummy metal objects are deleted from the design data, thereby avoiding having to rerun the dummy fill tool.

33. The inventions disclosed in the '803 patent provide many advantages over the prior art. In particular, they provide a simple and efficient method for ensuring dummy metal does not intersect other components such that the dummy fill tool does not have to be rerun. *See*

Exhibit 1B at 2:6–22. As mentioned above, this is very beneficial as it substantially reduces the run time of the dummy fill tool, shortens the overall design timeline, and avoids cost overruns and delays, making it less costly to make changes later in the design process. *See* Exhibit 1B at 1:51–65. Given the aforementioned increased complexity of circuit designs and the corresponding delays from design changes, these efficiency gains have become more and more important in completing the design process without affecting time-to-market. These significant advantages are achieved through the use of the patented inventions and thus the '803 patent presents significant commercial value for chip designers.

B. Identification of the Patent and Ownership of the Asserted Patents

34. Bell Semiconductor owns by assignment the entire right, title, and interest in the '626 patent, entitled “Method Of Implementing An Engineering Change Order In An Integrated Circuit Design By Windows,” which issued on June 12, 2007. The '626 patent issued to inventors Jason K. Hoff, Viswanathan Lakshmanan, Michael Josephides, Daniel W. Prevedel, Richard D. Blinne, and Johathan P. Kuppinger from United States Patent Application No. 11/015,123, filed December 17, 2004. It expires on July 26, 2025.

35. Pursuant to Commission Rule 210.12(a)(9)(ii), certified copies of the assignments of the '626 patent are attached as Exhibit 2A.¹¹ Pursuant to Commission Rule 210.12(c), a certified copy of the prosecution history of the '626 patent,¹² as well as each technical reference mentioned in the prosecution file history, are provided in Appendices A and B respectively.

36. Bell Semiconductor owns by assignment the entire right, title, and interest in the '803 patent, entitled “Incremental Dummy Metal Insertions,” which issued on August 21, 2007.

¹¹ The assignment record is available on Reel 044887, Frame 0109.

¹² A certified copy of the file history for the '626 patent was not available at the time of filing, and will be submitted once it becomes available.

The '803 patent issued to inventors Viswanathan Lakshmanan, Richard Blinne, Vikram Shrowty, and Lena Montecillo from United States Patent Application No. 10/683,369, filed October 10, 2003. It expires on October 18, 2025.

37. Pursuant to Commission Rule 210.12(a)(9)(ii), certified copies of the assignments of the '803 patent are attached as Exhibit 2B.¹³ Pursuant to Commission Rule 210.12(c), a certified copy of the prosecution history of the '803 patent,¹⁴ as well each technical reference mentioned in the prosecution file history, are provided in Appendices C and D respectively.

38. Bell Semiconductor avers that as of the filing date of this Complaint, all security interests present in the assignment records have been removed, and no security interests presently encumber the Asserted Patents. Exhibit 42.

C. Foreign Counterparts to the Asserted Patents

39. Pursuant to Commission Rule 210.12(a)(9)(v), no foreign patents or patent applications related to the Asserted Patents have been filed, granted, denied, abandoned, or withdrawn.

D. Licensees Under the Asserted Patents

40. Pursuant to Commission Rule 210.12(a)(9)(iii), a list of licensees to the Asserted Patents is attached at Exhibit 43C.

¹³ The assignment record is available on Reel 044887, Frame 0109.

¹⁴ A certified copy of the file history for the '803 patent was not available at the time of filing, and will be submitted once it becomes available.

VI. SPECIFIC INSTANCES OF IMPORTATION AND SALE

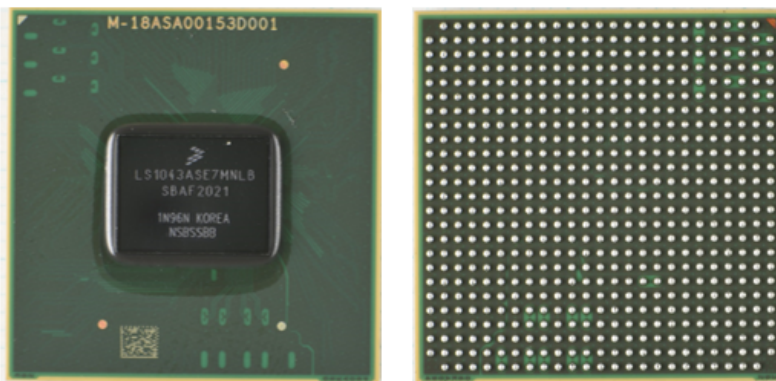
A. The NXP and SMC Networks Respondents

- The NXP Respondents**

41. The NXP Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.¹⁵

42. Exhibit 5 is a receipt dated May 3, 2021 reflecting the sale of the NXP Accused Product, which is NXP's LS1043A Quad-Core Networking Processor, in the United States.

43. As shown below, the packaging is labeled "KOREA," which on information and belief confirms that the device was made in Korea prior to its importation and sale after importation into the United States. Exhibit 4.



- SMC Networks**

44. The SMC Networks Accused Product has been imported, sold for importation,

¹⁵ Bell Semiconductor seeks relief on any other product of any Respondent that may be revealed to infringe during discovery regardless of whether those products were or were not identified herein.

and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(ii). The specific instances of importation of such products set forth below are illustrative and non-exhaustive examples of the unlawful importation of products that violate Section 337(a)(1)(B)(ii).

45. On information and belief, NXP Respondents knows, when they sell the Accused NXP Product to Respondent SMC Networks, that the Accused NXP Product will be incorporated into the SMC Networks Accused Product that is destined to be imported into the United States by Respondent SMC Networks.

46. Exhibit 8 is a receipt dated February 20, 2019 reflecting the sale of the SMC Networks MetroLinq 2.5G Outdoor 60 GHzPTP + 5GHz radio (the SMC Networks Accused Product) in the United States. As shown below, the packaging states “MADE IN CHINA,” confirming that the device was made in China prior to its importation and sale after importation into the United States. Exhibit 7.



B. Micron

47. The Micron Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.

48. Exhibit 11 is a receipt dated May 21, 2021 reflecting the sale of the Micron 2200

MTFDHBA256TCK-1AS1AABYY 256GB NVMe PCIe3.0x4 TLC M.2 22x80mm SSD in the United States. That device contained within it a Micron T15SB1 Solid State Drive Controller device (the Micron Accused Product) in the United States. See Exhibits 10 & 35A-B.

49. As shown below, the Micron Accused Product device states “TAIWAN,” confirming that the Micron Accused Product device was made in Taiwan prior to its importation and sale after importation into the United States. Exhibit 10.

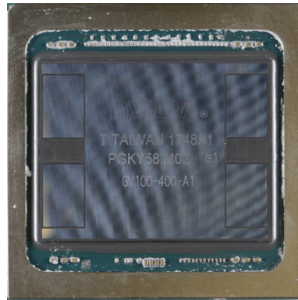


C. NVIDIA

50. The NVIDIA Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.

51. Exhibit 14 is a receipt dated November 16, 2018 reflecting the sale of NVIDIA’s GV100-400-A1 device (the NVIDIA Accused Product) in the United States. As shown in Exhibit 14, the device was shipped from an address in the United States.

52. As shown below, the device states “TAIWAN,” confirming that the device was made in Taiwan prior to its importation and sale after importation into the United States. Exhibit 13.



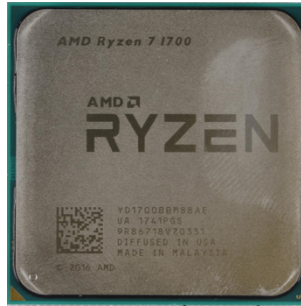
D. The AMD and Acer Respondents

- **AMD**

53. The AMD Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.

54. Exhibit 17 is a receipt dated March 3, 2020 reflecting the sale of AMD’s Ryzen 7 1700 processor device (the AMD Accused Product) in the United States.

55. As shown below, the device states “MADE IN MALAYSIA,” confirming that the device was made in Malaysia prior to its importation and sale after importation into the United States. Exhibit 16.



- **The Acer Respondents**

56. As explained in the Linder Declaration, Exhibit 33, at ¶ 86, the AMD Ryzen 5 processor infringes the Asserted Patents in the same way as does the accused Ryzen 7 1700 processor (an AMD Accused Product).

57. The Acer Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(ii). The specific instances of importation of such products set forth below are illustrative and non-exhaustive examples of the unlawful importation of products that violate Section 337(a)(1)(B)(ii).

58. On information and belief, Respondent AMD knows, when it sells the infringing AMD Ryzen 5 Product to the Acer Respondents, that the Accused Ryzen 5 Product will be incorporated into the Accused Acer Product that is destined to be imported into the United States by the Acer Respondents.

59. Exhibit 21 is a receipt dated November 19, 2021 reflecting the sale of an Acer Aspire 5 (A515) device in the United States.

60. As shown below, the packaging states “MADE IN CHINA,” confirming that the device was made in China prior to its importation and sale after importation into the United States. Exhibit 20.



E. Infineon

61. The Infineon Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.

62. Exhibit 23 is a receipt dated January 19, 2018 reflecting the sale of Infineon's AURIX TC277T64F200SCA Microcontroller device (the Infineon Accused Product) in the United States.

63. Exhibit 24 is an Annual Report submitted to the U.S. Securities and Exchange Commission by Infineon's parent, Infineon Technologies, AG, available at <https://sec.report/lux/doc/2345189/>. On page 76 of that report, Infineon states that "Volume production of the 32-bit multi-core automotive microcontrollers of our AURIX™ family was commenced with TSMC at the end of the 2014 fiscal year." Exhibit 25 are PowerPoint slides, which bear a 2019 copyright date, available at https://www.infineon.com/dgdl/Infineon-AURIX_%20CAV_%20and_Transportation-PP-v01_00-EN.pdf?fileId=5546d46269e1c019016a78d9a04b5307 showing, on pages 8-9, that Infineon's

Aurix products were still manufactured in Taiwan by TSMC in 2019. The Infineon Accused Product—an AURIX TC277T64F200SCA Microcontroller device—was purchased in 2018. See Exhibit 23.

F. The Qualcomm and Motorola Respondents

• **Qualcomm**

64. The Qualcomm Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.

65. Proof of importation of the Qualcomm Accused Product is via importation of the Accused Motorola Product discussed in Paragraphs 66–70. On information and belief, Respondent Qualcomm knows, when it sells the Snapdragon 665 Accused Qualcomm Product to Respondent Motorola, that the Snapdragon 665 Accused Qualcomm Product will be incorporated into the Accused Motorola Product that is destined to be imported into the United States by the Respondent Motorola.

• **Motorola**

66. The Motorola Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(ii). The specific instances of importation of such products set forth below are illustrative and non-exhaustive examples of the unlawful importation of products that violate Section 337(a)(1)(B)(ii).

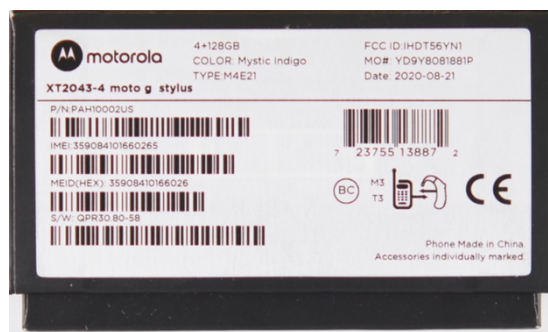
67. The Motorola Moto G5 Stylus device (Motorola Accused Product) contains a Snapdragon 665 chip supplied by Respondent Qualcomm. As explained in the Linder

Declaration, Exhibit 33, at ¶ 86, the Qualcomm Snapdragon Qualcomm SDM665 chip infringes the Asserted Patents in the same way as does the accused Qualcomm 5G RF Transceiver SDR865 device (a Qualcomm Accused Product).

68. On information and belief, Respondent Qualcomm knows, when it sells the Snapdragon 665 chip to Respondent Motorola, that that Accused Qualcomm Product will be incorporated into the Accused Motorola Product that is destined to be imported into the United States by Respondent Motorola.

69. Exhibit 29 is a receipt dated September 30, 2020 reflecting the sale of Motorola's Moto G Stylus (the Motorola Accused Product) in the United States.

70. As shown below, the packaging states "MADE IN CHINA," confirming that the device was made in China prior to its importation and sale after importation into the United States. Exhibit 28.



G. Western Digital

71. The Western Digital Accused Product has been imported, sold for importation, and/or sold within the United States after importation in violation of, inter alia, Section 337(a)(1)(B)(i)-(ii). The specific instances of importation of infringing products set forth below are illustrative and non-exhaustive examples of the unlawful importation of infringing products.

72. Exhibit 32 is a receipt dated August 4, 2021 reflecting the sale of Western

Digital's WD Black SN 850 NVMe SSD device (the Western Digital Accused Product) in the United States. As shown in Exhibit 32, the device was shipped to an address in the United States.

73. As shown below, a semiconductor device within the Western Digital Accused Product states "CHINA," confirming that the device was made in China prior to its importation and sale after importation into the United States. Exhibit 31.



VII. UNLAWFUL AND UNFAIR ACTS COMMITTED BY THE RESPONDENTS

A. The NXP Respondents

74. As shown in the claim chart at Exhibit 34A, the NXP Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

75. As shown in the claim chart at Exhibit 34A, NXP directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

76. As shown in the claim chart at Exhibit 34B, the NXP Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

77. As shown in the claim chart at Exhibit 34B, NXP directly infringes, literally

and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

B. SMC Networks

78. As shown in the claim chart at Exhibit 34A, the SMC Networks Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

79. As shown in the claim chart at Exhibit 34B, the SMC Networks Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

C. Micron

80. As shown in the claim chart at Exhibit 35A, the Micron Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

81. As shown in the claim chart at Exhibit 35A, Micron directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

82. As shown in the claim chart at Exhibit 35B, the Micron Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

83. As shown in the claim chart at Exhibit 35B, Micron directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

D. NVIDIA

84. As shown in the claim chart at Exhibit 36A, the NVIDIA Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

85. As shown in the claim chart at Exhibit 36A, NVIDIA directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

86. As shown in the claim chart at Exhibit 36B, the NVIDIA Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

87. As shown in the claim chart at Exhibit 36B, NVIDIA directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

E. AMD

88. As shown in the claim chart at Exhibit 37A, the AMD Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

89. As shown in the claim chart at Exhibit 37A, AMD directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

90. As shown in the claim chart at Exhibit 37B, the AMD Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

91. As shown in the claim chart at Exhibit 37B, AMD directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

F. The Acer Respondents

92. As shown in the claim chart at Exhibit 37A, the Acer Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

93. As shown in the claim chart at Exhibit 37B, the Acer Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

G. Infineon

94. As shown in the claim chart at Exhibit 38A, the Infineon Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

95. As shown in the claim chart at Exhibit 38A, Infineon directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

96. As shown in the claim chart at Exhibit 38B, the Infineon Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

97. As shown in the claim chart at Exhibit 38B, Infineon directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

H. Qualcomm

98. As shown in the claim chart at Exhibit 39A, the Qualcomm Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

99. As shown in the claim chart at Exhibit 39A, Qualcomm directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

100. As shown in the claim chart at Exhibit 39B, the Qualcomm Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

101. As shown in the claim chart at Exhibit 39B, Qualcomm directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

I. Motorola

102. As shown in the claim chart at Exhibit 39A, the Motorola Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

103. As shown in the claim chart at Exhibit 39B, the Motorola Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

J. Western Digital

104. As shown in the claim chart at Exhibit 40A, the Western Digital Accused Product

is made, produced, or processed, or by means of a process covered by at least claims 1-4 of the '626 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

105. As shown in the claim chart at Exhibit 40A, Western Digital directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-4 of the '626 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

106. As shown in the claim chart at Exhibit 40B, the Western Digital Accused Product is made, produced, or processed, or by means of a process covered by at least claims 1-6 and 9-11 of the '803 Patent in violation of 19 U.S.C. § 1337(a)(1)(B)(ii).

107. As shown in the claim chart at Exhibit 40B, Western Digital directly infringes, literally and/or under the doctrine of equivalents, at least claims 1-6 and 9-11 of the '803 Patent under 35 U.S.C. § 271(g) in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

VIII. THE DOMESTIC INDUSTRY

108. A domestic industry for the purposes of 19 U.S.C. § 1337(a)(2), as defined in U.S.C. § 1337(a)(3)(A), (B), and/or (C), exists with respect to the significant and continuous investment in plant and equipment, significant and continuous employment of labor and capital, and/or substantial and ongoing investment in engineering, research, and development of semiconductor devices developed, researched, designed, engineered, and produced in the United States by Bell Semiconductor's domestic licensee, Broadcom Inc. ("Broadcom"). The Broadcom License is attached at Exhibit 44.¹⁶ These investments are both significant and substantial.

¹⁶ Complainant has requested to delay submission of the Broadcom license pending expiration of the notice period to Broadcom. The Broadcom license will be supplied after the notice period runs.

A. Broadcom's Domestic Activities Related to the Asserted Patents

109. In public comments, Broadcom described its business in the United States as “a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Broadcom’s category-leading product portfolio serves critical markets including data center, networking, software, broadband, wireless, storage and industrial. Our solutions include data center networking and storage, enterprise and mainframe software focused on automation, monitoring and security, smartphone components, telecoms and factory automation.” Exhibit 45.

110. Broadcom also explains that it designs and produces a “[t]he broadest portfolio of highly reliable server storage products in the industry offers the connectivity, performance, and protection to support critical applications. Our SATA and SAS RAID controllers and host bus adapters are in the majority of the world’s storage server platforms. Our product portfolio also includes SAS I/O controllers, ROC ICs, and SAS expander ICs delivering high performance, scalability, and high reliability.” Exhibit 45. Such products include the Broadcom SAS3908A0-2 Mass Storage Controller (the “Domestic Industry Product”).

111. As shown and described in the Domestic Industry Claim Charts, Exhibit 52A and 53B, the Domestic Industry Product is made using the methods and computer readable media of the Asserted Patents, and more specifically, through use of design tools, including use of the Cadence Virtuoso and Innovus layout tools produced by Cadence Design Systems, Inc. (“Cadence”) or an equivalent layout tool. More specifically, Broadcom uses the Cadence layout tools to design and produce the Domestic Industry Product in the United States through the creation of GDS files that comprise a step of the production process for the Domestic Industry Product. This is a necessary step in production of the Domestic Industry Product, which could

not be produced without a detailed layout of the sort contained in the GDS files.

112. On information and belief, the Domestic Industry Product is representative of broad classes of Broadcom semiconductor devices that are produced using layouts created according to the Asserted Patents. Thus, although the Complaint references and discusses a single Domestic Industry Product, it should be understood that the descriptions apply equally to all or virtually all Broadcom semiconductor devices designed and produced according to the Asserted Patents.

113. Evidence of Broadcom's use of the Cadence Virtuoso and Innovus design tools to produce the Domestic Industry Product is corroborated by, for example, Exhibit 53, entitled "Cadence Expands Collaboration with Broadcom for 5nm and 7nm Designs." Exhibit 53 explains that Broadcom and Cadence have had and continue to have a close working relationship in connection with the design of semiconductor devices using Cadence products.

114. Further evidence of Broadcom's use of Cadence design tools to lay out semiconductor designs for the Domestic Industry Product according to the Asserted Patents is found in Broadcom job listings for its San Jose and Irvine, California facilities, and its Chandler, Arizona facility. For example:

- Attached at Exhibit 49 are select job posting for engineering positions at Broadcom's Headquarters in San Jose, CA. These listings seek persons with background in semiconductor layout designs, and specifically require experience with Cadence design tools, including the Cadence Virtuoso and Innovus design tools.
- Attached at Exhibit 50 Broadcom's Chandler, AZ facility. These listings seek persons with background in semiconductor layout designs, and specifically require

experience with Cadence design tools, including the Cadence Virtuoso design tool.

- Attached at Exhibit 51 are select job posting for engineering positions at Broadcom's Irvine, CA facility. These listings seek persons with background in semiconductor layout designs, and specifically require experience with Cadence design tools, including the Cadence Virtuoso design tool.

115. On information and belief, the above-described job listings evidence significant numbers of and investments in personnel employed at those locations having the same or similar job descriptions, or other related endeavors, employed in the production, research, development, design, and engineering of the Domestic Industry Product, including production steps such as production of GDS files having layouts performed according to the Asserted Patents.

116. On information and belief, the below-listed facilities correspond to the locations where the above-described personnel work and, on information and belief, carry out technical operations relating to the Domestic Industry Product:

- Exhibit 46 is a property record for the Broadcom, Inc., Corporate Headquarters, located at 1310 Ridder Park Drive, San Jose, CA 95131, showing that the building has 215,225 square feet.
- Exhibit 47 is a property record for a Broadcom, Inc. facility located at 500 North Juniper Drive, Chandler Corporate Center, Chandler, AZ 85226, showing that the building has 70,573 square feet.
- Exhibit 48 is a property record for a Broadcom, Inc. facility located at 15101 Alton Parkway, Irvine, CA 92618, showing that the building has 287,726 square feet.

117. It is further believed that the investments in at least personnel and facilities in the

United States that are used to produce the Domestic Industry Product are significant and substantial relative to Broadcom's overall investments in personnel and facilities. See Exhibit 54 (Broadcom domestic locations).

118. More particularly, Broadcom owns or leases facilities totaling 3,378,363 square feet in the United States as of October 31, 2021. Exhibit 55 at p. 32. The square footage of the facilities identified in ¶ 116 comprise approximately 17% of Broadcom's total domestic square footage. On information and belief, a significant portion of this square footage is devoted to the production and research and development of semiconductor layouts that practice the Asserted Patents and are used to produce Domestic Industry Products, and thus a significant portion of this square footage is allocable to both the Asserted Patents and the Domestic Industry Product.

119. On information and belief, the above-described personnel and facilities are connected to the production of the products that practice at least one valid claim of the Asserted Patents through use of semiconductor design tools to perform layouts of the semiconductor devices to create GDS files that are used to produce the physical devices.

120. It is further believed that other Broadcom personnel at these facilities are engaged in other aspects of the production, research, development, engineering, and design of the Domestic Industry Product.

121. As previously mentioned, all or virtually all semiconductor devices produced by Broadcom use the methods and computer readable media according to the Asserted Patents. Also as previously mentioned, creation of the layout of a semiconductor device is a part of the manufacturing process, with the output of that process being a GDS file that is used to fabricate the device according to the layout. Thus, a significant percentage of Broadcom's engineering and design personnel (and by extension, investments) are allocable to production steps of Domestic

Industry Products at Broadcom locations in the United States. Still other Broadcom personnel are engaged in research, development, design, and engineering of the devices that practice the Asserted Patents.

122. According to Broadcom, “[i]n order to remain competitive, we have made, and expect to continue to make, significant investments in research and development.” Exhibit 55 at p. 26. To that end, Broadcom reports investments of over \$4.85 billion in research and development worldwide in the year ending October 31, 2021. Exhibit 55 at p. 42.

123. Broadcom further explains that its “[r]esearch and development expense consists primarily of personnel costs for our engineers engaged in the design and development of our products and technologies, including stock-based compensation expense. These expenses also include project material costs, third- party fees paid to consultants, prototype development expense, allocated facilities costs and other corporate expenses and computer services costs related to supporting computer tools used in the engineering and design process.” Exhibit 55 at p. 37. In other words, Broadcom’s reported investments in research and development in the United States includes investments in personnel, plant, and equipment related to research and development.

124. Broadcom also reports that it “track[s] the portion of [its] workforce in research and development roles,” and that “[a]s of October 31, 2021, [Broadcom] had approximately 20,000 employees worldwide, with approximately 63% in research and development roles. By geography, approximately 54% of [Broadcom’s] employees are located in North America, 35% in Asia, and 11% in Europe, the Middle East and Africa.” Exhibit 55 at p. 11. As shown in Exhibit 55, moreover, the domestic workforce further includes a significant number of employees working on technical aspects of the Domestic Industry Products as evidenced by

Broadcom job postings in the United States wherein 64 of about 240 job postings relate to semiconductor design and manufacture.

125. Based on Broadcom's reported percentages, 54% of the workforce attributable to research and development is in the United States, and assuming that plant and equipment investments are proportional to the number of employees engaged in research and development, Broadcom likely invested \$2.62 billion in personnel, plant, and equipment for research and development in the United States in the year ending October 31, 2021. On information and belief, a significant and substantial amount of that sum is allocable to domestic production and research and development of Domestic Industry Products and the Asserted Patents. Indeed, semiconductor revenues were nearly triple those of Broadcom's other business segment, infrastructure software, and it is reasonable to assume that Broadcom's investments in the two business units are generally proportional. Exhibit 55 at 43. Based on that assumption, Broadcom likely invested \$1.94 billion in research and development allocable to its semiconductor solutions business segment, and a significant and substantial percentage of that sum to Domestic Industry Products and Asserted Patent.

126. The significance and substantiality of Broadcom's investments in research and development, as well as production, is evident in Broadcom's revenues. Based on at least a portion of the estimated \$1.94 billion investment in research and development in the United States in the year ending October 31, 2021, Broadcom earned revenues of \$20.4 billion and operating income of \$11 billion. Exhibit 55 at pp. 43-44. On information and belief, this also evidences the significance and substantiality of the investments both within Broadcom and compared to its competitors.

127. On information and belief, Broadcom's investments in at least facilities and labor

are relatively significant and/or substantial. As discussed above, use of the patented methods to produce GDS files for production of the Domestic Industry Product form steps in the manufacturing process for the Domestic Industry Product, and thus have a direct nexus to the Asserted Patents.

128. Accordingly, a domestic industry as defined by at least 19 U.S.C. § 1337(a)(3)(A)–(C) exists in the United States with respect to the articles protected by the Asserted Patents through Broadcom’s significant investment in at least plant, labor, and exploitation related to the Domestic Industry Product and also the Asserted Patents.

B. Broadcom’s Practice of the Asserted Patents

129. As discussed above, Broadcom produces, researches, develops, designs, and undertakes certain manufacturing-related activities within the United States with respect to semiconductor devices that practice the Asserted Patents, such as the Domestic Industry Product. Such circuit devices include at least the Broadcom SAS3908A0-2 Mass Storage Controller.

130. Pursuant to Commission Rule 210.12(a)(9)(ix), claim charts demonstrating how Broadcom’s SAS3908A0-2 Mass Storage Controller practices at least one claim of the ‘626 and ‘803 Patents are attached as Exhibits 52A and 52B respectively. Because this and other Broadcom products practice at least one claim of the Asserted Patents, they satisfy the requirements of 19 U.S.C. § 1337(a)(2)–(3).

IX. RELATED LITIGATIONS

131. Complainant discloses the following proceedings involving the Asserted Patents, none of which resulted in invalidation or cancellation of any claims of any Asserted Patents as of the filing the Complaint:

- Bell Semiconductor, LLC v. NXP USA, Inc., 22cv01267-LL-JLB (S.D. Cal.)

- Bell Semiconductor, LLC v. Qualcomm Inc., 22cv1266-LL-JLB (S.D. Cal.)
- Bell Semiconductor, LLC v. Advanced Micro Devices, Inc., 1:22-CV-11383-LTS(D. Mass.)
- Bell Semiconductor, LLC v. Infineon Technologies America Corp., 1:22-CV-11385-FDS (D. Mass.)
- Bell Semiconductor, LLC v. NVIDIA Corp., 4:22-CV-11388-DJC (D. Mass.)
- Bell Semiconductor, LLC v. Micron Technology, Inc., 1:22-cv-00375-DCN (D. Idaho)
- Bell Semiconductor, LLC v. Western Digital Technologies, Inc., 8:22-cv-01592-FWS-JDE (C.D. Cal.)
- Bell Semiconductor, LLC v. Advanced Micro Devices, Inc., 1:22-cv-11696-PBS (D. Mass.)
- Bell Semiconductor, LLC v. Infineon Technologies America Corp., 1:22-cv-11698-MPK (D. Mass.)
- Bell Semiconductor, LLC v. NVIDIA Corporation, 1:22-cv-11700 (D. Mass.)
- Bell Semiconductor, LLC v. MICRON Technology, Inc., 1:22-cv-00417-REP (D. Idaho)
- Bell Semiconductor, LLC v. Western Digital Technologies, Inc., 8:22-cv-01823 (C.D. Cal.)

X. STATEMENT REGARDING THE ACCUSED PRODUCTS

132. Pursuant to 19 C.F.R. §§ 210.10(b)(1) and 210.12(a)(12), Complainant identifies the category of accused products as semiconductor devices, and specifically undiced wafers, diced wafers, packaged chips and chipsets both attached and unattached to printed circuit boards; and end products incorporating such articles, specifically cellular telephones and tablet computers, personal computers, graphics cards, memory modules, and radios.

XI. HARMONIZED TARIFF SCHEDULE NUMBERS

133. Pursuant to 19 C.F.R. § 210.12(a)(3), the Accused Products are classified under at

least the following subheadings of the Harmonized Tariff Schedule of the United States: 8541.50.00 (semiconductor devices); 8517.12.00 (telephones for cellular networks or for other wireless networks); 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); and 8471.49.00 (other automatic data processing machines entered in the form of systems). This classification is exemplary in nature and not intended to restrict the scope of any exclusion order or other remedy ordered by the Commission.

XII. RELIEF REQUESTED

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

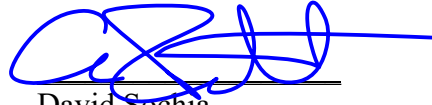
- (a) institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to Respondents' violations of that section based on the importation into the United States, sale for importation, and/or the sale within the United States after importation of Respondents' products that infringe the Asserted Patents;
- (b) schedule and conduct a hearing on permanent relief pursuant to 19 U.S.C. § 1337(c) for the purposes of receiving evidence and hearing argument concerning whether there has been a violation of Section 337, and following the hearing, to determine that there has been a violation of Section 337;
- (c) issue a limited exclusion order, pursuant to 19 U.S.C. § 1337(d) forbidding entry into the United States of Respondents' products that infringe one or more claims of the Asserted Patents;
- (d) issue cease and desist orders, pursuant to 19 U.S.C. § 1337(f), prohibiting the

Respondents and their related companies or divisions from conducting any of the following activities in the United States: importing, selling, offering for sale, marketing, advertising, distributing, transferring (except for exportation), and/or soliciting U.S. agents or distributors for, products covered by one or more claims of the Asserted Patents;

- (e) impose a bond upon Respondents' importation of the Accused Products that infringe any claim of the Asserted Patents during the 60-day Presidential review period pursuant to 19 U.S.C. §§ 1337(e) and (j) to prevent further injury to Bell Semiconductor's domestic industry relating to the Asserted Patents;
- (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.

Dated: October 6, 2022

Respectfully submitted,



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