

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, DC**

In the Matter of

**CERTAIN COMPUTING OR GRAPHICS
SYSTEMS, COMPONENTS THEREOF,
AND VEHICLES CONTAINING SAME**

Investigation No. 337-TA-____

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

COMPLAINANT:

Advanced Silicon Technologies LLC
118 Maplewood Avenue
Unit C-2/Box 8
Portsmouth, NH 03801
Phone: 603-380-9121

COUNSEL FOR COMPLAINANT

Michael T. Renaud
James M. Wodarski
Michael J. McNamara
Andrew H. DeVoogd
Adam S. Rizk
MINTZ LEVIN COHN FERRIS
GLOVSKY AND POPEO PC
One Financial Center
Boston, MA 02111
Tel: 617-542-6000
Fax: 617-542-2241
www.mintz.com

Aarti Shah
MINTZ LEVIN COHN FERRIS
GLOVSKY AND POPEO PC
701 Pennsylvania Avenue NW
Suite 900
Washington, DC 20004
Tel: 202-434-7300
Fax: 202-434-7400

PROPOSED RESPONDENTS:

Bayerische Motoren Werke AG
Petuelring 130
D-80788, Munich
Germany
Telephone: 49-89-382-0

BMW of North America, LLC
300 Chestnut Ridge Rd.
Woodcliff Lake, NJ 07677
Telephone: 201-307-4000

BMW Manufacturing Co., LLC
1400 Hwy. 101 S.
Greer, SC 29651
Telephone: 864-802-6000

Fujitsu Ten Limited
1-2-28, Goshō-dōri
1-chōme, Hyōgo-ku
Kobe-shi, Hyōgo-ken 652-8510
Japan
Telephone: +81-78-671-5081

Fujitsu Ten Corp. of America, Inc.
30155 Hudson Dr.
Novi, MI 48377
Telephone: 734-414-6620

**Harman International Industries
Incorporated**

400 Atlantic Street
Stamford, CT 06901
Telephone: 203-328-3500

Harman Becker Automotive Systems, Inc.
39001 West Twelve Mile Road
Farmington Hills, MI 48331
Telephone: 248-994-2100

Harman Becker Automotive Systems GmbH
Becker-Goring-Strasse 16
Karlsbad 76307
Germany
Telephone: 49-7248-71-0

Honda Motor Co., Ltd.
2-1-1, Minami-Aoyama
Minato-Ku, Tokyo 107-8556
Japan
Telephone: +81-3-3423-1111

Honda North America, Inc.
700 Van Ness Avenue
Torrance, CA 90501
Telephone: 310-781-4961

American Honda Motor Co., Inc.
1919 Torrance Blvd.
Torrance, CA 90501
Telephone: 310-783-2000

Honda Engineering North America, Inc.
24000 Honda Pkwy.
Marysville, OH 43040
Telephone: 937-642-5000

Honda of America Mfg., Inc.
24000 Honda Pkwy.
Marysville, OH 43040
Telephone: 937-642-5000

Honda Manufacturing of Alabama, LLC
1800 Honda Drive
Lincoln, AL 35096
Telephone: 205-355-5000

Honda Manufacturing of Indiana, LLC
2755 North Michigan Ave.
Greensburg, IN 47240
Telephone: 812-222-6000

Honda R&D Americas, Inc.
1900 Harpers Way
Torrance, CA 90501
Telephone: 310-781-5500

NVIDIA Corporation
2701 San Tomas Expressway
Santa Clara, CA 95050
Telephone: 408-486-2000

Renesas Electronics Corporation
Toyosu Foresia
3-2-24 Toyosu
Koto-ku, Tokyo 135-0061
Japan
Telephone: +81-3-6773-3000

Renesas Electronics America, Inc.
2801 Scott Boulevard
Santa Clara, CA 95050
Telephone: 408-588-6000

Texas Instruments Incorporated
12500 TI Boulevard
Dallas, TX 75243
Telephone: 972-995-2011

Toyota Motor Corporation
1 Toyota-cho
Toyota-shi, Aichi-ken 471-8571
Japan
Telephone: +81-565-28-2121

Toyota Motor North America, Inc.
601 Lexington Ave., 49th Floor
New York, NY 10022
Telephone: 212-510-4800

Toyota Motor Sales, U.S.A., Inc.
19001 S. Western Ave.
Torrance, CA 90501

Telephone: 310-468-4000

**Toyota Motor Engineering &
Manufacturing North America, Inc.**

25 Atlantic Avenue
Erlanger, KY 41018
Telephone: 469-292-1074

Toyota Motor Manufacturing, Indiana, Inc.

4000 Tulip Tree Drive
Princeton, IN 47670
Telephone: 812-387-2000

**Toyota Motor Manufacturing, Kentucky,
Inc.**

1001 Cherry Blossom Way
Georgetown, KY 40324
Telephone: 502-868-2000

**Toyota Motor Manufacturing, Mississippi,
Inc.**

1200 Magnolia Way
Blue Springs, MS 38828
Telephone: 662-538-5855

Volkswagen AG

Brieffach 1849
D-38436 Wolfsburg
Germany
Telephone: +49-5361-9-0

Volkswagen Group of America, Inc.

2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Telephone: 703-364-7000

**Volkswagen Group of America Chattanooga
Operations, LLC**

8001 Volkswagen Drive
Chattanooga, TN 37416
Telephone: 423-582-4000

Audi AG

Ettinger Strasse
D-85045, Ingolstadt
Germany

Telephone: +49 (0)841 89-0

Audi of America, LLC
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Telephone: 703-364-7000

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	THE PARTIES	3
A.	Complainant	3
B.	The Proposed Respondents	4
III.	THE ASSERTED '428 PATENT	11
A.	Ownership and Asserted Claims of the '428 Patent	11
B.	Licenses Relating to the '428 Patent	12
C.	Foreign Counterparts to the '428 Patent	12
IV.	THE ASSERTED '439 PATENT	12
A.	Ownership and Asserted Claims of the '439 Patent	12
B.	Licenses Relating to the '439 Patent	13
C.	Foreign Counterparts to the '439 Patent	13
V.	THE ASSERTED '935 PATENT	13
A.	Ownership and Asserted Claims of the '935 Patent	13
B.	Licenses Relating to the '935 Patent	14
C.	Foreign Counterparts to the '935 Patent	15
VI.	THE ASSERTED '945 PATENT	15
A.	Ownership and Asserted Claims of the '945 Patent	15
B.	Licenses Relating to the '945 Patent	16
C.	Foreign Counterparts to the '945 Patent	16
VII.	NON-TECHNICAL DESCRIPTION OF THE PATENTED TECHNOLOGY	17
VIII.	UNFAIR ACTS OF PROPOSED RESPONDENTS – PATENT INFRINGEMENT	19
A.	BMW	20
B.	Fujitsu-Ten	24
C.	Harman	30
D.	Honda	38
E.	NVIDIA	41
F.	Renesas	48
G.	Texas Instruments	56
H.	Toyota	63
I.	Volkswagen	66
IX.	HARMONIZED TARIFF SCHEDULE INFORMATION	70
X.	RELATED LITIGATION	71
XI.	DOMESTIC INDUSTRY RELATING TO THE ASSERTED PATENTS	71
A.	Advanced Micro Devices, Inc.	72
B.	Intel Corporation	77
C.	Samsung	84
XII.	RELIEF REQUESTED	88

EXHIBITS

1. Confidential Declaration of Thomas Loureiro
 - a. Confidential Patent Purchase Agreement between Advanced Micro Devices, Inc. (“AMD”) and Advanced Silicon Technologies LLC (“Advanced Silicon”)
2. Confidential Declaration of AMD Declarant
 - a. Confidential AMD Declaration Exhibit A
 - b. Confidential AMD Declaration Exhibit B
 - c. Confidential AMD Declaration Exhibit C
 - d. Confidential AMD Declaration Exhibit D
 - e. Confidential AMD Declaration Exhibit E
 - f. Confidential AMD Declaration Exhibit F
3. Certified Copy of U.S. Patent No. 6,339,428
4. Certified Copy of the Assignment Record at Reel-Frame No. 010119/0819 for U.S. Patent No. 6,339,428
5. Certified Copy of the Assignment Record at Reel-Frame No. 023574/0593 for U.S. Patent Nos. 6,339,428, 6,630,935
6. Certified Copy of the Assignment Record at Reel-Frame No. 036703/0421 for U.S. Patent Nos. 6,339,428, 6,630,935 and 8,933,945
7. Certified Copy of the Prosecution History for U.S. Patent No. 6,339,428
8. Confidential List of Potential Licensees to the Asserted Patents
9. Certified Copy of U.S. Patent No. 6,546,439
10. Certified Copy of the Assignment Record at Reel-Frame No. 009637/0515 for U.S. Patent No. 6,546,439
11. Certified Copy of the Assignment Record at Reel-Frame No. 036700/0001 for U.S. Patent No. 6,546,439
12. Certified Copy of the Prosecution History for U.S. Patent No. 6,546,439
13. Certified Copy of U.S. Patent No. 6,630,935
14. Certified Copy of the Assignment Record at Reel-Frame No. 010761/0829 for U.S. Patent No. 6,630,935
15. Certified Copy of the Prosecution History for U.S. Patent No. 6,630,935
16. Certified Copy of U.S. Patent No. 8,933,945
17. Certified Copy of the Assignment Record at Reel-Frame No. 014176/0613 for U.S. Patent No. 8,933,945
18. Certified Copy of the Assignment Record at Reel-Frame No. 025573/0443 for U.S. Patent No. 8,933,945
19. Certified Copy of the Prosecution History for U.S. Patent No. 8,933,945
20. Photos of 2015 BMW 428i Infotainment System
21. Photos of 2015 BMW 428i
22. Photos of 2015 BMW i8 Infotainment System
23. Photos of 2015 BMW i8
24. Claim Chart Comparing U.S. Patent No. 6,339,428 to BMW’s 2015 428i Infotainment System
25. Claim Chart Comparing U.S. Patent No. 6,339,428 to BMW’s 2015 i8 Infotainment System
26. Claim Chart Comparing U.S. Patent No. 6,546,439 to BMW’s 2015 428i and 2015 i8 Infotainment Systems

27. Claim Chart Comparing U.S. Patent No. 6,630,935 to BMW's 2015 428i Infotainment System
28. Claim Chart Comparing U.S. Patent No. 6,630,935 to BMW's 2015 i8 Infotainment System
29. Claim Chart Comparing U.S. Patent No. 8,933,945 to BMW's 2015 428i Infotainment System
30. Claim Chart Comparing U.S. Patent No. 8,933,945 to BMW's 2015 i8 Infotainment System
31. Receipt for 2015 BMW 428i Infotainment System
32. "BMW Headunit High 2", BMW of South Atlanta
33. "VIN Decoding", CARFAX
34. Receipt for 2015 BMW i8 Infotainment System
35. "Remanufactured Head Unit, High for BMW i8", BMW of South Atlanta
36. "BMW of North America, LLC Company Information – Overview", bmwusa.com
37. "BMW Group: Production - Manufacturing Facilities", bmwgroup.com
38. BMW Vehicle Features
39. Letter to Fujitsu Ten Ltd. and Fujitsu Ten Corp. of America, dated December 18, 2015
40. Fujitsu Ten Corp. of America Background Info
41. Letter to Harman International Industries, Inc., Harman Becker Automotive Systems, Inc. and Harman Becker Automotive Systems GmbH dated December 18, 2015
42. "5432AAAN", Arrow.com
43. "TI Debuts 28-nm OMAP 5 Processor at CES", chipworksrealchips.blogspot.com
44. "Fab Information", www.umc.com
45. Photos of 2016 Honda Accord Infotainment System
46. Photos of 2016 Honda Civic
47. Claim Chart Comparing U.S. Patent No. 6,339,428 to 2016 Honda Accord Infotainment System
48. Claim Chart Comparing U.S. Patent No. 6,546,439 to 2016 Honda Accord Infotainment System
49. Claim Chart Comparing U.S. Patent No. 6,630,935 to 2016 Honda Accord Infotainment System
50. Claim Chart Comparing U.S. Patent No. 8,933,945 to 2016 Honda Accord Infotainment System
51. Receipt for 2016 Honda Accord Infotainment System
52. "2016 Honda Accord Sedan Audio Unit Assy., Base", hondapartsunlimited.com
53. "Honda Companies", corporate.honda.com
54. "Honda Worldwide – U.S.A. Locations", world.honda.com
55. "Honda Worldwide Manufacturing Facilities", world.honda.com
56. Honda Vehicle Features
57. Letter to NVIDIA Corporation dated December 18, 2015
58. Letter to Renesas Electronics Corporation and Renesas Electronics America, Inc. dated December 18, 2015
59. "Global Operations", renesas.com
60. "Car Information Terminal Applications", renesas.com
61. Letter to Texas Instruments Incorporated dated December 18, 2015

62. Photos of 2015 Toyota Corolla Infotainment System
63. Photos of 2016 Toyota Corolla
64. Claim Chart Comparing U.S. Patent No. 6,339,428 to 2015 Toyota Corolla Infotainment System
65. Claim Chart Comparing U.S. Patent No. 6,546,439 to 2015 Toyota Corolla Infotainment System .
66. Claim Chart Comparing U.S. Patent No. 6,630,935 to 2015 Toyota Corolla Infotainment System
67. Receipt for 2015 Toyota Corolla Infotainment System
68. “86804-02020 – Toyota OEM Parts – Nav System Kit – Toyota”, toyotaparts.bochttoyotaparts.com
69. “Worldwide Operations”, newsroom.toyota.co.jp
70. Toyota Vehicle Features
71. “Volkswagen MIB II infotainment system”, digitaltrends.com
72. “AT CES: Cars as the Ultimate Mobile Device”, automotiveitnews.org
73. Photos of 2015 Volkswagen Golf Infotainment System
74. “2015 Golf 4-Door 1.8T SEL”, vw.com
75. Photos of 2016 Audi TT
76. Claim Chart Comparing U.S. Patent No. 6,339,428 to 2015 Volkswagen Golf Infotainment System
77. Claim Chart Comparing U.S. Patent No. 6,339,428 to 2016 Audi TT Infotainment System
78. Claim Chart Comparing U.S. Patent No. 6,546,439 to 2016 Audi TT Infotainment System
79. Claim Chart Comparing U.S. Patent No. 6,630,935 to 2015 Volkswagen Golf Infotainment System
80. Claim Chart Comparing U.S. Patent No. 8,933,945 to 2016 Audi TT Infotainment System
81. Receipt for 2015 Volkswagen Golf Infotainment System
82. “Controller - 2015 Volkswagen Golf (5G0035878A)”, vwpartsvortex.com
83. Press Release: “An icon returns: all-new Audi TT makes its U.S. debut at LA Auto Show”, audiusa.com
84. “Company Overview of Volkswagen Group of America, Inc.”, Bloomberg.com
85. Audi of America, LLC Hoover’s Report
86. “Volkswagen Production Plants – Chattanooga”, volkswagenag.com
87. Volkswagen Vehicle Features
88. AMD 2011 10-K
89. Redacted Patent Cross License Agreement between AMD, Inc. and Intel Corporation
90. Wafer Supply Agreement between AMD, Inc. and The Foundry Company a/k/a GlobalFoundries
91. Nov. 2015 AMD Investor Presentation
92. Confidential Claim Chart Comparing U.S. Patent No. 6,339,428 to the AMD Graphics Products
93. Confidential Claim Chart Comparing U.S. Patent No. 6,630,935 to the AMD Graphics Products

94. Confidential Claim Chart Comparing U.S. Patent No. 8,933,945 to the AMD Graphics Products
95. Confidential Claim Chart Comparing U.S. Patent No. 6,546,439 to the AMD Microprocessor Products
96. "Our Locations", amd.com
97. AMD 2014 10-K
98. GlobalFoundries 2013 Corporate Responsibility Report
99. "About GLOBALFOUNDRIES" – globalfoundries.com
100. "Manufacturing" – globalfoundries.com
101. "Economic Impact of GlobalFoundries on Saratoga County"
102. "Fast Facts" – globalfoundries.com
103. "GLOBALFOUNDRIES Achieves 14nm FinFET Technology Success for Next-Generation AMD Products" – globalfoundries.com
104. "GlobalFoundries starts early production of 14nm chips" – bizjournals.com
105. "GlobalFoundries completes design work at Fab 8 for AMD's newest chips" – timesunion.com
106. "14nm AMD Greenland Tapes Out: Attack on NVIDIA Pascal, Intel Xeon Phi," vrworld.com
107. "AMD R 400 Series Ellesmere and Baffin 'Arctic Islands' GPUs Taped Out, to Enter Production in 2016," wccfttech.com
108. "AMD Confirms 14nm CPUs, GPUs, and APUs for 2016 – Working Samples Delivered by GlobalFoundries," wccfttech.com
109. Claim Chart Comparing U.S. Patent No. 6,339,428 to Certain Intel Domestic Industry Products
110. Claim Chart Comparing U.S. Patent No. 6,339,428 to Certain Intel Domestic Industry Products
111. Claim Chart Comparing U.S. Patent No. 6,630,935 to Certain Intel Domestic Industry Products
112. Claim Chart Comparing U.S. Patent No. 6,630,935 to Certain Intel Domestic Industry Products
113. Claim Chart Comparing U.S. Patent No. 8,933,945 to Certain Intel Domestic Industry Products
114. Claim Chart Comparing U.S. Patent No. 8,933,945 to Certain Intel Domestic Industry Products
115. Testimony of Carolyn Duran, Ph.D., Director of Supply Chain Ramp and Regulations, Intel Corporation, Before the Environment and the Economy Subcommittee of the House Energy and Commerce Committee, Hearing on A Discussion Draft Entitled the "Chemicals in Commerce Act", March 12, 2014
116. Intel Corporation 2014 10-K
117. Testimony of Cathleen Barton, Intel Education Manager, Southwestern United States to the Committee on House Education and Workforce, March 20, 2014
118. Prepared Statement for the Record of Intel Corporation for the United States Senate Committee on Finance on the Role of Trade and Technology in 21st Century Manufacturing, Jacklyn A. Sturm, Vice President and General Manager of Global Supply Management, Intel Corporation, July 17, 2014
119. "Intel Corporation Salaries", Glass Door

120. "Average Salary of Intel Employees", Payscale.com
121. Prepared Statement of Intel Corporation for the Committee on Small Business of the U.S. House of Representatives on Large and Small Businesses: How Partnership Can Promote Job Growth, Robert E. Bruck, Corporate Vice President and General Manager Technology Manufacturing Engineering Organization Intel Corporation
122. "Intel: Made in American Since 1968", Intel
123. "Intel to Invest More than \$5 Billion to Build New Factory in Arizona", intel.com
124. "Intel retrofits existing plants in Chandler for new, smaller chips", Phoenix Business Journal
125. "Intel map shows long-term plan for humongous Hillsboro expansion", The Oregonian
126. "Intel in New Mexico", Intel
127. "Jobs at Intel in Rio Rancho, New Mexico", Intel
128. "Intel's N.M. future", abqjournal.com
129. "Intel Announces Investment in Rio Rancho, New Mexico Site", intel.com
130. "Intel in Oregon", Intel
131. "Intel in Arizona", Intel
132. "Jobs at Intel in Chandler, Arizona", Intel
133. "Intel Global Manufacturing Facts", Intel
134. "Intel: We Have All 14nm Capacity We Need", xbitlabs.com
135. "Intel Opens First High-Volume 45nm Microprocessor Manufacturing Factory," intel.com
136. Inv. No. 337-TA-941, Complaint
137. Claim Chart Comparing U.S. Patent No. 6,339,428 to the Samsung Domestic Industry Products
138. Claim Chart Comparing U.S. Patent No. 6,546,439 to the Samsung Domestic Industry Products
139. Claim Chart Comparing U.S. Patent No. 6,630,935 to the Samsung Domestic Industry Products
140. Claim Chart Comparing U.S. Patent No. 8,933,945 to the Samsung Domestic Industry Products
141. Inv. No. 337-TA-941, Order No. 12
142. "Samsung Austin Semiconductor Begins \$3.6B Expansion for Advanced Logic Chips," samsung.com
143. "Samsung Opens Largest Wafer Plant in Austin, Texas", samsung.com
144. "Samsung's Austin Logic Line Breaks Record Achievements", samsung.com
145. "Samsung to Proceed With \$4 Billion Austin Plant Expansion", Bloomberg.com
146. "Galaxy Alpha is powered by Exynos 5430, Samsung's first 20nm processor", www.androidauthority.com
147. "Samsung Galaxy Alpha will be equipped with Exynos 5433 processor and 12MP camera", www.sammobile.com
148. "Samsung Galaxy S5 mini review", www.gsmarena.com
149. "Samsung Galaxy Alpha vs Samsung Galaxy S III", www.phonearena.com
150. "Samsung's Exynos 7420 Is One Small Chip – Galaxy S6 Teardown Reveals A lot", wccftch.com

151. **Inv. No. 337-TA-941, Notice of Commission Determination Not to Review Order No. 12**
152. **Inv. No. 337-TA-814, Response of the Audi and Volkswagen Respondents to the Complaint**

APPENDICES

- A. One certified copy and three additional copies of the U.S. Patent and Trademark Office prosecution history for the U.S. Patent 6,339,428 File History
- B. A certified copy of U.S. Patent No. 6,339,428 and three additional copies, and four copies of the applicable pages of each technical reference mentioned in the prosecution history for U.S. Patent No. 6,339,428
- C. One certified copy and three additional copies of the U.S. Patent and Trademark Office prosecution history for the U.S. Patent 6,546,439 File History
- D. A certified copy of U.S. Patent No. 6,546,439 and three additional copies, and four copies of the applicable pages of each technical reference mentioned in the prosecution history for U.S. Patent No. 6,546,439
- E. One certified copy and three additional copies of the U.S. Patent and Trademark Office prosecution history for the U.S. Patent No. 6,630,935 File History
- F. A certified copy of U.S. Patent No. 6,630,935 and three additional copies, and four copies of the applicable pages of each technical reference mentioned in the prosecution history for U.S. Patent No. 6,630,935
- G. One certified copy and three additional copies of the U.S. Patent and Trademark Office prosecution history for the U.S. Patent No. 8,933,945 File History
- H. A certified copy of U.S. Patent No. 8,933,945 and three additional copies, and four copies of the applicable pages of each technical reference mentioned in the prosecution history for U.S. Patent No. 8,933,945

I. INTRODUCTION

1. This Complaint is filed by Complainant Advanced Silicon Technologies LLC (“Advanced Silicon” or “Complainant”) pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 (“Section 337”).

2. Complainant brings this action to remedy violations of Section 337 arising from the unlawful and unauthorized importation into the United States, the sale for importation, and/or the sale within the United States after importation, of certain computing or graphics systems, components thereof, and vehicles containing same (the “Accused Products”) that infringe one or more claims of United States Patent Nos. 6,339,428; 6,546,439; 6,630,935; and 8,933,945 (together, “Asserted Patents”). These Accused Products include, without limitation, automotive infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing such components and systems.

3. The proposed Respondents are Bayerische Motoren Werke AG; BMW of North America, LLC; and BMW Manufacturing Co., LLC (together, “BMW”); Fujitsu Ten Limited and Fujitsu Ten Corp. of America, Inc. (together “Fujitsu-Ten”); Harman International Industries Incorporated; Harman Becker Automotive Systems, Inc.; and Harman Becker Automotive Systems GmbH (together “Harman”); Honda Motor Co., Ltd.; Honda North America, Inc.; American Honda Motor Co., Inc.; Honda Engineering North America, Inc.; Honda of America Mfg., Inc.; Honda Manufacturing of Alabama, LLC; and Honda Manufacturing of Indiana, LLC, and Honda R&D Americas, Inc. (together, “Honda”); NVIDIA Corporation (“NVIDIA”); Renesas Electronics Corporation and Renesas Electronics America, Inc. (together, “Renesas”); Texas Instruments Incorporated (“TI”); Toyota Motor Corporation; Toyota Motor North America, Inc.; Toyota Motor Sales, U.S.A., Inc.; Toyota Motor Engineering &

Manufacturing North America, Inc.; Toyota Motor Manufacturing, Indiana, Inc.; Toyota Motor Manufacturing, Kentucky, Inc.; and Toyota Motor Manufacturing, Mississippi, Inc. (together, “Toyota”); and Volkswagen AG; Volkswagen Group of America, Inc.;¹ Volkswagen Group of America Chattanooga Operations, LLC; Audi AG; Audi of America, LLC (together “Volkswagen”). All of these proposed respondents are collectively referred to throughout this complaint as “Respondents.”

4. On information and belief, each of the Respondents imports into the United States, sells for importation into the United States, sells in the United States after importation, and/or instructs purchasers regarding the use of Accused Products that directly infringe, contributorily infringe, and/or induce the infringement of, the Asserted Patents.

5. Complainant asserts that the Accused Products practice at least the following claims of one or more Asserted Patents:²

PATENT	ASSERTED CLAIMS
6,339,428	1-6, 8-9, 10-14, 16-17, and 25-29
6,546,439	1-11, and 14-16
6,630,935	1, 2, and 4-8
8,933,945	1-11 and 21

6. To remedy Respondents’ continuing and unlawful violation of Section 337, Complainant seeks as permanent relief a limited exclusion order pursuant to 19 U.S.C. § 1337(d) barring from entry into the United States all Respondents’ Accused Products that directly infringe, contributorily infringe, or induce the infringement of one or more of the claims of the Asserted Patents. Complainant also seeks cease and desist orders pursuant to 19 U.S.C. § 1337(f), prohibiting each domestic Respondent from engaging in the importation into the

¹ Volkswagen Group of America also does business as Audi of America, Inc. Exhibit 152 (Inv. No. 337-TA-814, Response at 18).

² Independent claims in the chart of asserted claims in each patent are in **bold**.

United States and/or sale within the United States after importation of Accused Products that infringe, either directly or indirectly, one or more claims of the Asserted Patents.

7. Further, Complainant requests that the Commission impose a bond upon Respondents' importation of infringing Accused Products during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j) to prevent further injury to Complainant and its licensees' domestic industry relating to each of the Asserted Patents.

II. THE PARTIES

A. Complainant

8. Complainant Advanced Silicon is a Delaware limited liability company, located at 118 Maplewood Avenue Unit C-2/Box 8, Portsmouth, NH 03801. (Declaration of Thomas Loureiro (attached as Confidential Exhibit 1) ("Loureiro Decl.") at ¶4.)

9. Complainant Advanced Silicon is the sole owner by assignment of all right, title, and interest in each Asserted Patent. Confidential Exhibit 1 (Loureiro Decl. at ¶6).

10. One of Advanced Silicon's domestic licensees is Advanced Micro Devices, Inc. ("AMD"), located at 1 AMD Place, Sunnyvale, California 94088. Confidential Exhibit 1 (Loureiro Decl. at ¶9). AMD is the predecessor-in-interest of each of the Asserted Patents, and has a non-exclusive license to practice each of the Asserted Patents. Confidential Exhibit 1 (Loureiro Decl. at ¶9).

11. AMD is an American innovator and semiconductor company that has pioneered cutting edge graphics processor and microprocessor technology. AMD's innovative semiconductor technology powers millions of intelligent devices, including personal computers, game consoles and cloud servers. AMD technology is featured inside every major next generation gaming console and home entertainment system including the Microsoft Xbox One, Sony PS4, and Nintendo Wii U. AMD has invested substantial resources researching, developing,

testing, launching, supporting, and maintaining technically innovative and commercially successful products in the computing and graphics space that practice the Asserted Patents. Throughout its history, AMD has made substantial investments to research, develop, and manufacture high quality computing and graphics systems, including microprocessors and graphics processors that practice the Asserted Patents. (Declaration of AMD Declarant (attached as Confidential Exhibit 2), (“AMD Decl.”) at ¶¶4-27; AMD claim charts (attached as Confidential Exhibits 92-95)). The Asserted Patents stem from the research and design of innovative proprietary technology developed by AMD and its affiliates.

B. The Proposed Respondents

12. With regard to the proposed Respondents, Complainant alleges the following on information and belief:

BMW

13. **Bayerische Motoren Werke AG** is a corporation organized and existing under the laws of Germany, with its principal place of business at Petuelring 130, D-80788, Munich, Germany. **BMW of North America, LLC** is a New Jersey limited liability company headquartered at 300 Chestnut Ridge Road, Woodcliff Lake, New Jersey 07677. **BMW Manufacturing Co., LLC** is a Delaware limited liability company headquartered at 1400 Hwy. 101 S., Greer, South Carolina 29651. **Respondents Bayerische Motoren Werke AG, BMW of North America, LLC, and BMW Manufacturing Co., LLC are referred to collectively as “BMW.”**

14. BMW is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products including, without limitation, infotainment systems, head-end units, navigation systems, graphics

processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing such components. BMW also provides services to support the sale for importation into the United States, importation into the United States, and sale in the United States after importation of Accused Products. For example, BMW's operations encompass marketing, coordination of supply-chain logistics, interfacing with customers and distributors, repair, product definition, product integration, and after-sale services with respect to the Accused Products.

Fujitsu-Ten

15. **Fujitsu Ten Limited** is a corporation organized and existing under the laws of Japan, with its principal place of business at 1-2-28, Goshodori, 1-chome, Hyogo-ku, Kobe-shi, Hyogo-ken, 652-8510, Japan. **Fujitsu Ten Corp. of America, Inc.** is a California corporation headquartered at 30155 Hudson Dr., Novi, MI 48377. **Respondents Fujitsu Ten Limited and Fujitsu Ten Corp. of America, Inc. are referred to collectively as "Fujitsu-Ten."**

16. Fujitsu-Ten is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products including, without limitation, graphics processors, microprocessors, integrated circuits, infotainment systems, and other computing and/or graphics-capable electronic devices.

Harman

17. **Harman International Industries Incorporated** is a Delaware corporation headquartered at 400 Atlantic Street, Stamford, CT 06901. **Harman Becker Automotive Systems, Inc.** is a Delaware corporation headquartered at 39001 West Twelve Mile

Road Farmington Hills, MI 48331. **Harman Becker Automotive Systems GmbH** is a corporation organized and existing under the laws of Germany, with its principal place of business at Becker-Goring-Strasse 16 Karlsbad, 76307 Germany. **Respondents Harman International Industries Incorporated, Harman Becker Automotive Systems, Inc., and Harman Becker Automotive Systems GmbH** are referred to collectively as “**Harman.**”

18. Harman is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products including, without limitation, graphics processors, microprocessors, integrated circuits, infotainment systems, and other computing and/or graphics-capable electronic devices.

Honda

19. **Honda Motor Co., Ltd.** is a corporation organized and existing under the laws of Japan, with its principal place of business at 2-1-1, Minami-Aoyama, Minato-Ku, Tokyo, 107-8556, Japan. **Honda North America, Inc.** is a California corporation headquartered at 700 Van Ness Avenue, Torrance, CA 90501. **American Honda Motor Co., Inc.** is a California corporation headquartered at 1919 Torrance Blvd, Torrance, CA 90501. **Honda Engineering North America, Inc.** is an Ohio corporation headquartered at 24000 Honda Pkwy., Marysville, OH 43040. **Honda of America Mfg. Inc.** is an Ohio corporation headquartered at 24000 Honda Pkwy., Marysville, OH 43040. **Honda Manufacturing of Alabama, LLC** is an Alabama limited liability company headquartered at 1800 Honda Drive, Lincoln, AL 35096. **Honda Manufacturing of Indiana, LLC** is an Indiana limited liability company headquartered at 2755 North Michigan Ave., Greensburg, IN 47240. **Honda R&D Americas, Inc.** is a California corporation headquartered at 1900 Harpers Way, Torrance, CA 90501. **Respondents Honda**

Motor Co., Ltd., Honda North America, Inc., American Honda Motor Co., Inc., Honda Engineering North America, Inc., Honda of America Mfg. Inc., Honda Manufacturing of Alabama, LLC, Honda Manufacturing of Indiana, LLC and Honda R&D Americas, Inc. are referred to collectively as “Honda.”

20. Honda is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products that are sold under, without limitation, the Honda and Acura brand names. These Accused Products include, without limitation, infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing such components. Honda also provides services to support the sale for importation into the United States, importation into the United States, and sale in the United States after importation of Accused Products. For example, Honda’s operations encompass marketing, coordination of supply-chain logistics, interfacing with customers and distributors, repair, product definition, product integration, and after-sale services with respect to the Accused Products.

NVIDIA

21. **NVIDIA Corporation** (“NVIDIA”) is a Delaware corporation headquartered at 2701 San Tomas Expressway, Santa Clara, CA 95050. NVIDIA is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products including, without limitation, graphics

processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices.

Renesas

22. **Renesas Electronics Corporation** is a corporation organized and existing under the laws of Japan, with its principal place of business at Toyosu Foresia, 3-2-24, Toyosu, Koto-ku, Tokyo, 135-0061, Japan. **Renesas Electronics America, Inc.** is a California corporation headquartered at 2801 Scott Boulevard, Santa Clara, CA 95050. **Respondents Renesas Electronics Corporation and Renesas Electronics America, Inc. are referred to collectively as “Renesas.”**

23. Renesas is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products including, without limitation, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices.

Texas Instruments

24. **Texas Instruments Incorporated (“TI”)** is a Delaware corporation headquartered at 12500 TI Boulevard, Dallas, TX 75243. TI is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products including, without limitation, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices.

Toyota

25. **Toyota Motor Corporation** is a corporation organized and existing under the laws of Japan, with its principal place of business at 1 Toyota-cho, Toyota-shi, Aichi-ken 471-8571, Japan. **Toyota Motor North America, Inc.** is a California corporation headquartered at 601 Lexington Ave, 49th Floor, New York, NY 10022. **Toyota Motor Sales, U.S.A., Inc.** is a California corporation headquartered at 19001 S. Western Ave. Torrance, CA 90501. **Toyota Motor Engineering & Manufacturing North America, Inc.** is a Kentucky corporation headquartered at 25 Atlantic Avenue, Erlanger, KY 41018. **Toyota Motor Manufacturing, Indiana, Inc.** is an Indiana corporation headquartered at 4000 Tulip Tree Drive, Princeton, IN 47670. **Toyota Motor Manufacturing, Kentucky, Inc.** is a Kentucky corporation headquartered at 1001 Cherry Blossom Way, Georgetown, KY 40324. **Toyota Motor Manufacturing, Mississippi, Inc.** is a Mississippi corporation headquartered at 1200 Magnolia Way, Blue Springs, MS 38828. **Respondents Toyota Motor Corporation, Toyota Motor North America, Inc., Toyota Motor Sales, U.S.A., Inc., Toyota Motor Engineering & Manufacturing North America, Inc., Toyota Motor Manufacturing, Indiana, Inc., Toyota Motor Manufacturing, Kentucky, Inc., and Toyota Motor Manufacturing, Mississippi, Inc. are referred to collectively as “Toyota.”**

26. Toyota is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products under, without limitation, the Toyota and Lexus brand names. These Accused Products include, without limitation, infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing such components. Toyota also provides services to support the

sale for importation into the United States, importation into the United States, and sale in the United States after importation of Accused Products. For example, Toyota's operations encompass marketing, coordination of supply-chain logistics, interfacing with customers and distributors, repair, product definition, product integration, and after-sale services with respect to the Accused Products.

Volkswagen

27. **Volkswagen AG** is a corporation organized and existing under the laws of Germany, with its principal place of business at Brieffach 1849, 38436, Wolfsburg, Germany. **Volkswagen Group of America, Inc.** is a New Jersey corporation headquartered at 2200 Ferdinand Porsche Dr., Herndon, VA 20171. **Volkswagen Group of America Chattanooga Operations, LLC** is a Tennessee corporation headquartered at 8001 Volkswagen Drive, Chattanooga, TN 37416. **Audi AG** is a corporation organized and existing under the laws of Germany, with its principal place of business at Ettinger-Strasse, D-85045, Ingolstadt, Germany. **Audi of America, LLC** is a New Jersey corporation headquartered at 2200 Ferdinand Porsche Dr., Herndon, VA 20171. **Respondents Volkswagen AG; Volkswagen Group of America, Inc.; Volkswagen Group of America Chattanooga Operations, LLC; Audi AG; and Audi of America, LLC** are referred to collectively as "**Volkswagen.**"

28. Volkswagen is in the business of designing, developing, manufacturing, selling in the United States, selling in the United States after importation, selling for importation into the United States, and importing into the United States a variety of Accused Products under, without limitation, the Volkswagen and Audi brand names. These Accused Products include, without limitation, infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable

electronic devices, and vehicles containing such components. Volkswagen also provides services to support the sale for importation into the United States, importation into the United States, and sale in the United States after importation of Accused Products. For example, Volkswagen's operations encompass marketing, coordination of supply-chain logistics, interfacing with customers and distributors, repair, product definition, product integration, and after-sale services with respect to the Accused Products.

III. THE ASSERTED '428 PATENT

A. Ownership and Asserted Claims of the '428 Patent

29. United States Patent No. 6,339,428 ("the '428 Patent") is entitled "Method and Apparatus for Compressed Texture Caching in a Video Graphics System," and issued January 15, 2002 to inventors Mark C. Fowler, Paul Vella, and Michael T. Wright. The '428 Patent issued from United States Patent Application No. 09/356,398 filed on July 16, 1999.

30. By way of assignment, Complainant Advanced Silicon owns all rights, title, and interest to the '428 Patent. As required by Commission Rules 210.12(a)(9)(i)-(ii), copies of the '428 Patent, its assignment records, and file history are attached as Exhibits 3-7.

31. In accordance with Commission Rules 210.12(c)(1)-(2), Appendix A to this Complaint includes one certified and three additional copies of the United States Patent and Trademark Office prosecution history for the '428 Patent. Appendix B includes a certified copy of the '428 Patent and four copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the '428 Patent.

32. All maintenance fees for the '428 Patent have been timely paid, and there are no fees currently due.

33. The '428 Patent has 30 claims, including four independent claims (1, 10, 18 and 25), and 26 dependent claims. Complainant is asserting at least claims 1-6, 8-9, 10-14,

16-17, and 25-29 of the '428 Patent (the "Asserted '428 Patent Claims") against each of the Respondents.

B. Licenses Relating to the '428 Patent

34. Certain licensees exist to the '428 Patent. Confidential Exhibit 1, Loureiro Decl. at ¶9, sets forth details regarding licensees to the '428 Patent, including Advanced Silicon's domestic industry licensees, Advanced Micro Devices, Inc., Intel Corporation, GlobalFoundries, Inc., and Samsung Electronics Co., Ltd. Pursuant to Commission Rule 210.12(a)(9)(iii), Complainant has attached as Confidential Exhibit 8 a list of potential licensees to the '428 Patent.

C. Foreign Counterparts to the '428 Patent

35. In accordance with Commission Rule 210.12(a)(9)(v), Complainant states that it is aware of no foreign counterparts issued, filed, abandoned, withdrawn, or rejected relating to the '428 Patent.

IV. THE ASSERTED '439 PATENT

A. Ownership and Asserted Claims of the '439 Patent

36. United States Patent No. 6,546,439 ("the '439 Patent") is entitled "Method and System for Improved Data Access," and issued April 8, 2003 to inventors Geoffrey S. Strongin and Qadeer A. Qureshi. The '439 Patent issued from United States Patent Application No. 09/207,970 filed on December 9, 1998.

37. By way of assignment, Complainant Advanced Silicon owns all rights, title, and interest to the '439 Patent. As required by Commission Rules 210.12(a)(9)(i)-(ii), certified copies of the '439 Patent, its assignment records and file history are attached as Exhibits 9-12.

38. Further, in accordance with Commission Rules 210.12(c)(1)-(2), Appendix C to this Complaint includes one certified and three additional copies of the United States Patent and Trademark Office prosecution history for the '439 Patent. Appendix D includes a certified copy of the '439 Patent and four copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the '439 Patent.

39. All maintenance fees for the '439 Patent have been timely paid, and there are no fees currently due.

40. The '439 Patent has 32 claims, with two independent claims (1 and 17), and 30 dependent claims. Complainant is asserting at least claims 1-11 and 14-16 of the '439 Patent (the "Asserted '439 Patent Claims") against each of the Respondents.

B. Licenses Relating to the '439 Patent

41. Certain licensees exist to the '439 Patent. Confidential Exhibit 1, Loureiro Decl. at ¶9, sets forth details regarding licensees to the '439 Patent, including Advanced Silicon's domestic industry licensees, Advanced Micro Devices, Inc., Intel Corporation, GlobalFoundries, Inc., and Samsung Electronics Co., Ltd. Pursuant to Commission Rule 210.12(a)(9)(iii), Complainant has attached as Confidential Exhibit 8 a list of potential licensees to the '439 Patent.

C. Foreign Counterparts to the '439 Patent

42. In accordance with Commission Rule 210.12(a)(9)(v), Complainant states that it is aware of no foreign counterparts issued, filed, abandoned, withdrawn, or rejected relating to the '439 Patent.

V. THE ASSERTED '935 PATENT

A. Ownership and Asserted Claims of the '935 Patent

43. United States Patent No. 6,630,935 (“the ‘935 Patent”) is entitled “Geometric Engine Including a Computational Module for use in a Video Graphics Controller,” and issued October 7, 2003 to inventors Ralph Clayton Taylor, Michael Andrew Mang, and Michael Mantor. The ‘935 Patent issued from United States Patent Application No. 09/556,474 filed on April 21, 2000.

44. By way of assignment, Complainant Advanced Silicon owns all rights, title, and interest to the ‘935 Patent. As required by Commission Rules 210.12(a)(9)(i)-(ii), certified copies of the ‘935 Patent, its assignment records and file history are attached as Exhibits 13-15, and Exhibits 5-6.

45. In accordance with Commission Rules 210.12(c)(1)-(2), Appendix E to this Complaint includes one certified and three additional copies of the United States Patent and Trademark Office prosecution history for the ‘935 Patent. Appendix F includes a certified copy of the ‘935 Patent and four copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the ‘935 Patent.

46. All maintenance fees for the ‘935 Patent have been timely paid, and there are no fees currently due.

47. The ‘935 Patent has 19 claims, with 2 independent claims (claims 1 and 9), and 10 dependent claims. Complainant is asserting claims 1-2 and 4-8 of the ‘935 Patent (the “Asserted ‘935 Patent Claims”) against each of the Respondents.

B. Licenses Relating to the ‘935 Patent

48. Certain licensees exist to the ‘935 Patent. Confidential Exhibit 1, Loureiro Decl. at ¶9, sets forth details regarding licensees to the ‘935 Patent, including Advanced Silicon’s domestic industry licensees, Advanced Micro Devices, Inc., Intel Corporation, GlobalFoundries, Inc., and Samsung Electronics Co., Ltd. Pursuant to Commission Rule

210.12(a)(9)(iii), Complainant has attached as Confidential Exhibit 8 a list of potential licensees to the '935 Patent.

C. Foreign Counterparts to the '935 Patent

49. In accordance with Commission Rule 210.12(a)(9)(v), Complainant states that it is aware of no foreign counterparts issued, filed, abandoned, withdrawn, or rejected relating to the '935 Patent.

VI. THE ASSERTED '945 PATENT

A. Ownership and Asserted Claims of the '945 Patent

50. United States Patent No. 8,933,945 ("the '945 Patent") is entitled "Dividing Work Among Multiple Graphics Pipelines Using a Super-Tiling Technique," and issued January 13, 2015 to inventors Mark M. Leather and Eric Demers. The '945 Patent issued from United States Patent Application No. 10/459,797 filed on June 12, 2003. The '945 Patent claims priority to U.S. provisional application serial number 60/429,641 filed on November 27, 2002.

51. By way of assignment, Complainant Advanced Silicon owns all rights, title, and interest to the '945 Patent. As required by Commission Rules 210.12(a)(9)(i)-(ii), certified copies of the '945 Patent and its assignment records and file history are attached as Exhibits 16-19, and Exhibit 6.

52. In accordance with Commission Rules 210.12(c)(1)-(2), Appendix G to this Complaint includes one certified and three additional copies of the United States Patent and Trademark Office prosecution history for the '945 Patent. Appendix H includes a certified copy of the '945 Patent and four copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the '945 Patent.

53. All maintenance fees for the '945 Patent have been timely paid, and there are no fees currently due. The next maintenance fee will not be due until July 14, 2018.

54. The '945 Patent has 21 claims, with three independent claims (claims 1, 18 and 21), and 18 dependent claims. Complainant is asserting at least claims 1-11 and 21 of the '945 Patent (the "Asserted '945 Patent Claims") against BMW, Harman, Honda, NVIDIA, TI, Renesas, and Volkswagen.

B. Licenses Relating to the '945 Patent

55. Certain licensees exist to the '945 Patent. Confidential Exhibit 1, Loureiro Decl. at ¶9, sets forth details regarding licensees to the '945 Patent, including Advanced Silicon's domestic industry licensees, Advanced Micro Devices, Inc., Intel Corporation, GlobalFoundries, Inc., and Samsung Electronics Co., Ltd. Pursuant to Commission Rule 210.12(a)(9)(iii), Complainant has attached as Confidential Exhibit 8 a list of potential licensees to the '945 Patent.

C. Foreign Counterparts to the '945 Patent

56. In accordance with Commission Rule 210.12(a)(9)(v), Complainant identifies below the only known foreign counterparts to the '945 Patent. Complainant is unaware of any foreign counterparts other than those identified below.

<u>Country</u>	<u>Patent</u>	<u>Application No.</u>	<u>Title</u>	<u>Filed</u>	<u>Issued</u>	<u>Continuity Data</u>
Europe	EP 142653 B1	EP 20030257464	Dividing Work Among Multiple Graphics Pipelines Using a Super-Tiling Technique	Nov. 26, 2003	Dec. 31, 2014	
Europe		EP 2905743 A1	Dividing Work Among Multiple Graphics Pipelines Using a Super-Tiling Technique	Nov. 26, 2003		Divisional of EP 142653 B1
Germany		DE60347164.1	Dividing Work Among Multiple Graphics Pipelines Using a Super-Tiling Technique	Nov. 26, 2003	Dec. 31, 2014	

VII. NON-TECHNICAL DESCRIPTION OF THE PATENTED TECHNOLOGY

57. The Asserted Patents disclose the following inventions relating generally to computing and graphics technology. The patented graphics rendering and computing technologies enable the delivery of a high-performance and responsive user experience by the infotainment systems and other Accused Products used in vehicles. The following non-technical descriptions of the patented technology are provided solely for compliance with the Commission Rules. They are not intended to, and do not, limit, define, or otherwise affect the construction and/or application of each patent's claim language and should not be understood to do so.

The '428 Patent

58. The '428 Patent discloses circuits that provide enhanced and realistic 3D video graphics by displaying detailed textures. Prior to the '428 Patent, 3D graphics circuits were

unable to efficiently render detailed textures because existing circuit architectures at the time monopolized the use of memory. As a result, graphics circuits were unable to properly perform their functions in a timely manner which resulted in performance degradation of the video graphics system as a whole. The '428 Patent provides implementations where detailed textures are stored in a cache memory in a compressed format and decompressed from the cache for use in texturing operations. The implementations further disclose texture filtering circuits for combining the uncompressed textures to produce a texture color. These novel circuits enable graphics processors to render high fidelity textures without consuming excessive memory bandwidth.

The '439 Patent

59. The '439 Patent discloses a system that enables memory controllers to schedule access to memory in an intelligent way. Specifically, the '439 Patent discloses a system that identifies attributes of the source of memory operation requests and uses those attributes to schedule accesses to memory. Prior to the advent of the '439 Patent, memory controllers did not schedule access to memory based upon attributes of the source of the memory request. As a result, high priority memory requests were not serviced as efficiently, which resulted in latencies and system bottlenecks. The '439 Patent's disclosure of a system that schedules memory access in an intelligent way eliminates or reduces system inefficiencies and/or bottlenecks by ensuring that high priority memory requests are serviced quickly.

The '935 Patent

60. The '935 Patent discloses 3D graphics pipeline circuitry for rendering high quality graphics. In particular, the '935 Patent allows parallel processing of graphics and ordering of computations to minimize the idle time of a graphics computation engine that

executes graphics instructions. Previously, performing all of the graphics processing functions in software consumed a large amount of processing bandwidth that limited the overall processing speed of the computing system. The invention claimed by the '935 Patent discloses circuitry that helps solve this problem by arbitrating access to the computation engine to achieve systemic efficiencies.

The '945 Patent

61. The '945 Patent discloses circuitry for dividing graphics processing operations among multiple pipelines in a graphics system. In some embodiments, the '945 Patent discloses circuits that divide graphics processing operations based upon the allocation the pipelines to regions of the screen known as "tiles." Prior to the '945 Patent, graphics systems tried to decrease processing time by distributing rectangular portions of the screen to graphics processors. Because the graphical objects to be rendered were sometimes concentrated within a slice of the screen, this resulted in an uneven distribution of work or load imbalance between the graphics processors. As a result, the viewer perceived choppy graphics performance. The '945 Patent helps solve this problem by disclosing circuitry that reduces the idle time of parallel graphics rendering pipelines. As a result, the circuits disclosed in the '945 Patent reduce or avoid the perception of choppiness in video display systems, thereby enabling rich graphical applications.

VIII. UNFAIR ACTS OF PROPOSED RESPONDENTS – PATENT INFRINGEMENT

62. The unfair acts of the Respondents involve the design, manufacture, importation into the United States, the sale for importation into the United States, the sale within the United States after importation, and/or the instruction of purchasers on the infringing use of certain infringing computing or graphics systems, components thereof, and vehicles containing same, including, without limitation, the Accused Products. These common infringing computing

or graphics systems are generally available for purchase on the open market in the form of vehicle infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing such components. In lieu of providing physical samples of the numerous, generally available, and prevalent devices, Complainant is providing charts comparing claims of the Asserted Patents to exemplary products and photographs of the exemplary infringing devices.³

63. Upon information and belief, the Accused Products as listed herein directly and/or indirectly infringe at least the Asserted Claims. Discovery may reveal that the Accused Products infringe additional claims of the Asserted Patents. In addition, Complainant anticipates that discovery may reveal that additional products of Respondents infringe the Asserted Patents, including but not limited to unreleased products that will become commercially available in the United States prior to the conclusion in this Investigation.

A. BMW

1. Representative Involved Article

64. On information and belief, BMW is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained BMW's 2015 428i and 2015 i8 infotainment systems ("BMW 428i Infotainment")

³ Complainant believes that the general familiarity of the Accused Products, along with the charts and photographs provided with this complaint, make the provision of physical exhibits unnecessary. However, should the Commission request physical samples, Complainant will provide physical exhibits to the extent practicable.

and “BMW i8 Infotainment” respectively) that BMW imported, sold for importation, and/or sold within the United States after importation.

65. Complainant believes that the BMW 428i and i8 Infotainment systems and BMW’s 2015 428i and 2015 i8 vehicles containing the same are exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation by BMW because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by BMW. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibits 20 and 21 contain photographs of the BMW 428i Infotainment system and the 2015 BMW 428i vehicle containing the same. Exhibits 22 and 23 contain photographs of the BMW i8 Infotainment system and the 2015 BMW i8 vehicle containing the same.

66. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of BMW that violates Section 337. As set forth below, the charts in Exhibits 24-30 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the ‘428 Patent

67. Exhibit 24 includes a chart comparing independent claims 1, 10, and 25 of the ‘428 Patent to the BMW 428i Infotainment systems and vehicles containing the same. Exhibit 25 includes a chart comparing independent claims 1, 10, and 25 of the ‘428 Patent to the BMW i8 Infotainment system and vehicles containing the same. Exhibits 24 and 25 show that the BMW 428i and i8 Infotainment systems and vehicles containing the same are covered by at least claims 1, 10, and 25 of the ‘428 Patent.

3. Infringement of the '439 Patent

68. Exhibit 26 includes a chart comparing independent claim 1 of the '439 Patent to the BMW 428i and BMW i8 Infotainment systems and vehicles containing the same. Exhibit 26 shows that the BMW 428i and i8 Infotainment systems and vehicles containing the same are covered by at least claim 1 of the '439 Patent.

4. Infringement of the '935 Patent

69. Exhibit 27 includes a chart comparing independent claim 1 of the '935 Patent to the BMW 428i Infotainment systems and vehicles containing the same. Exhibit 28 includes a chart comparing independent claim 1 of the '935 Patent to the BMW i8 Infotainment system and vehicles containing the same. Exhibits 27 and 28 show that the BMW 428i and i8 Infotainment systems and vehicles containing the same are covered by at least claim 1 of the '935 Patent.

5. Infringement of the '945 Patent

70. Exhibit 29 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the BMW 428i Infotainment system and vehicles containing the same. Exhibit 30 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the BMW i8 Infotainment system and vehicles containing the same. Exhibits 29 and 30 show that the BMW 428i and i8 Infotainment systems and vehicles containing the same are covered by at least claims 1 and 21 of the '945 Patent.

6. Specific Instance of Sale and Importation

71. BMW imports, sells for importation into the United States and/or sells within the United States after importation the BMW 428i Infotainment system, BMW i8

Infotainment system, and 2015 BMW 428i and 2015 BMW i8 vehicles containing the same depicted in Exhibits 20-23.

72. Pursuant to Commission Rule 210.12(a)(3), Exhibit 31 is a receipt from BMW of South Atlanta showing a sale of the BMW 428i Infotainment system within the United States. As shown in Exhibit 32, the BMW 428i Infotainment system is the infotainment system that is used in the 2015 BMW 428i. As shown in Exhibit 21, BMW sells in the United States certain 2015 BMW 428i vehicles, including but not limited to the vehicle that bears the vehicle identification number (“VIN”) of WBA3N9C57FK247407. As shown in Exhibit 21 and Exhibit 33, the final assembly for the 2015 BMW 428i bearing the VIN number of WBA3N9C57FK247407 was made in Germany, and therefore it, and all of its components including the BMW 428i Infotainment system, was imported.

73. Exhibit 34 is a receipt from BMW of South Atlanta showing a sale of the BMW i8 Infotainment system within the United States. As shown in Exhibit 22, the BMW i8 Infotainment system was made in Germany. As shown in Exhibit 35, the BMW i8 Infotainment system is the infotainment system that is used in the 2015 BMW i8. As shown in Exhibit 23, BMW sells in the United States certain BMW i8 series vehicles, including but not limited to the vehicle that bears the vehicle identification number (“VIN”) of WBY2Z2C5XFV392576. As shown in Exhibits 23 and 33, the final assembly for the 2015 BMW i8 bearing the VIN number of WBY2Z2C5XFV392576 was made in Germany, and therefore it, and all of its components including the BMW i8 Infotainment system, was imported.

74. On information and belief, BMW’s United States based operations and subsidiaries import, sell for importation into the United States and/or sell within the United States after importation Accused Products that are the same or substantially similar to the BMW

428i and i8 Infotainment systems and vehicles containing the same. As shown in Exhibit 36, BMW of North America, LLC is the United States importer of BMW vehicles. As shown in Exhibit 37, BMW Manufacturing Co., LLC produces variants of the BMW X3, X4, X5, and X6 vehicles. As shown in Exhibit 38, the BMW X3, X4, X5, and X6 vehicles incorporate infotainment systems that are, on information and belief, the same or substantially similar to the BMW 428i and i8 Infotainment systems and imported, sold for importation, and/or sold after importation into the United States.

75. Thus, BMW is violating Section 337 of the Tariff Act of 1930 by importing into the United States, selling for importation into the United States, and/or selling within the United States after importation the BMW 428i and i8 Infotainment systems, vehicles containing the same, as well as other Accused Products that infringe the Asserted Patents.

B. Fujitsu-Ten

1. Representative Involved Article

76. On information and belief Fujitsu-Ten is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, and '935 Patent Claims. Complainant has obtained Accused Products incorporating components designed, manufactured, and sold by Fujitsu-Ten.

77. As noted below, Exhibits 64-66 include charts comparing the independent claims of the Asserted Patents to the Toyota Corolla Infotainment system, which includes a Fujitsu-Ten 138000-5130D101 head unit, and Toyota Corolla vehicles containing the same. As set forth in these charts, the Fujitsu-Ten head unit provides circuitry and functionality that practices, in whole or in material part, the technology claimed by the Asserted Patents.

Complainant believes that the Fujitsu-Ten head unit is exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation, that include components provided by Fujitsu-Ten because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by Fujitsu-Ten and/or its customers. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibit 62 contains photographs of the Toyota Corolla Infotainment system and Fujitsu-Ten head unit.

78. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of Fujitsu-Ten that violates Section 337. As set forth below, the charts in Exhibits 64-66 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the ‘428 Patent

79. Exhibit 64 includes a chart comparing independent claims 1, 10, and 25 of the ‘428 Patent to the Toyota Corolla Infotainment system 2015 Toyota Corolla vehicles containing the same, which include a Fujitsu-Ten 138000-5130D101 head unit. As set forth in this chart, the Fujitsu-Ten head unit provides circuitry and functionality that practices, in whole or in material part, the technology claimed by the ‘428 Patent. This exhibit shows that, at the time of importation, the Toyota Corolla Infotainment system and vehicles containing the same directly infringe at least independent claims 1, 10, and 25 of the ‘428 Patent. This exhibit also shows that the Fujitsu-Ten head unit incorporated in the charted device directly or indirectly infringes at least independent claims 1, 10, and 25 of the ‘428 Patent. On information and belief,

Fujitsu-Ten directly infringes, contributes to, and/or induces the direct infringement by Toyota of the '428 Patent.

80. On information and belief, Fujitsu-Ten designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '428 Patent. There are no substantial non-infringing uses of these components. Fujitsu-Ten knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Fujitsu-Ten. Prior to the filing of this complaint, Fujitsu-Ten had actual knowledge of the '428 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 39 (Letter to Fujitsu-Ten dated December 18, 2015). In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, Fujitsu-Ten also had knowledge that use of its components in devices by, among others, Toyota, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '428 Patent. Exhibit 39 (Letter to Fujitsu-Ten dated December 18, 2015). On information and belief, Fujitsu-Ten has continued to sell components and distribute product literature and website materials inducing Toyota and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, Fujitsu-Ten is contributing to and/or inducing the infringement of the '428 Patent.

3. Infringement of the '439 Patent

81. Exhibit 65 includes a chart comparing independent claim 1 of the '439 Patent to the Toyota Corolla Infotainment system and 2015 Toyota Corolla vehicles containing

the same, which include a Fujitsu-Ten 138000-5130D101 head unit. As set forth in this chart, the Fujitsu-Ten head unit provides circuitry and functionality that practices, in whole or in material part, the technology claimed by the '439 Patent. This exhibit shows that, at the time of importation, the Toyota Corolla Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '439 Patent. This exhibit also shows that the Fujitsu-Ten head unit incorporated in the charted device directly or indirectly infringes at least independent claim 1 of the '439 Patent. On information and belief, Fujitsu-Ten directly infringes, contributes to, and/or induces the direct infringement by Toyota of the '439 Patent.

82. On information and belief, Fujitsu-Ten designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '439 Patent. There are no substantial non-infringing uses of these components. Fujitsu-Ten knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Fujitsu-Ten. Prior to the filing of this complaint, Fujitsu-Ten had actual knowledge of the '439 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 39 (Letter to Fujitsu-Ten dated December 18, 2015). In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, Fujitsu-Ten also had knowledge that use of its components in devices by, among others, Toyota, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '439 Patent. Exhibit 39 (Letter to Fujitsu-Ten dated December 18, 2015). On information and belief, Fujitsu-Ten has continued to sell components and distribute product literature and website

materials inducing Toyota and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, Fujitsu-Ten is contributing to and/or inducing the infringement of the '439 Patent.

4. Infringement of the '935 Patent

83. Exhibit 66 includes a chart comparing independent claim 1 of the '935 Patent to the Toyota Corolla Infotainment system and Toyota Corolla vehicles containing the same, which include a Fujitsu-Ten 138000-5130D101 head unit. As set forth in this chart, the Fujitsu-Ten head unit provides circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. This exhibit shows that, at the time of importation, the Toyota Corolla Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '935 Patent. This exhibit also shows that the Fujitsu-Ten head unit incorporated in the charted device directly or indirectly infringes at least independent claim 1 of the '935 Patent. On information and belief, Fujitsu-Ten directly infringes, contributes to, and/or induces the direct infringement by Toyota of the '935 Patent.

84. On information and belief, Fujitsu-Ten designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '935 Patent. There are no substantial non-infringing uses of these components. Fujitsu-Ten knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Fujitsu-Ten. Prior to the filing of this complaint, Fujitsu-Ten had actual knowledge of the '935 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 39 (Letter to

Fujitsu-Ten dated December 18, 2015). In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, Fujitsu-Ten also had knowledge that use of its components in devices by, among others, Toyota, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '935 Patent. Exhibit 39 (Letter to Fujitsu-Ten dated December 18, 2015). On information and belief, Fujitsu-Ten has continued to sell components and distribute product literature and website materials inducing Toyota and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, Fujitsu-Ten is contributing to and/or inducing the infringement of the '935 Patent.

5. Specific Instance of Sale and Importation

85. Specific instances of sale and importation with respect to Toyota are alleged in paragraphs 163-167, *infra*.

86. Further, upon information and belief, Respondent Fujitsu-Ten imports, sells for importation into the United States, and/or sells within the United States after importation head units and/or infotainment systems that are used by Respondents and other customers. These head units provide highly relevant functionality for the Toyota Corolla Infotainment system. For example, as shown in Exhibit 62, Fujitsu-Ten's 138000-5130D101 used in the Toyota Corolla Infotainment system is marked "Made in Mexico" which, upon information and belief, designates the country of origin.

87. On information and belief, Fujitsu-Ten's United States based operations and subsidiaries import, sell for importation into the United States and/or sell within the United States after importation Accused Products that are the same or substantially similar to the Fujitsu-Ten 138000-5130D101 head unit. As shown in Exhibit 40, Fujitsu Ten Corp. of America,

Inc. is responsible for sales of head units throughout the United States. On information and belief, these head units are the same or substantially similar to the Fujitsu-Ten 138000-5130D101 head unit that Fujitsu-Ten imported into the United States.

88. Thus, Fujitsu-Ten is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and selling after importation head units and/or infotainment systems that are incorporated into devices that are imported into the United States, sold for importation into the United States and/or sold within the United States after importation, such as the Toyota Corolla Infotainment system, as well as other infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing the same that infringe the '428 Patent, '439 Patent, and '935 Patent.

C. Harman

1. Representative Involved Article

89. On information and belief Harman is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained Accused Products incorporating components designed, manufactured, and sold by Harman.

90. As already noted, Exhibits 24, 26, 27, and 29 include charts comparing the independent claims of the Asserted Patents to the BMW 428i Infotainment system, which includes a Harman NBT EVO HU head unit, and 2015 BMW 428i vehicles containing the same. Exhibits 25, 26, 28, and 30 include charts comparing the independent claims of the Asserted Patents to the BMW i8 Infotainment system, which includes a Harman NBT HU head unit, and

2015 BMW i8 vehicles containing the same. As set forth in these charts, the Harman head units provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the Asserted Patents. Complainant believes that the Harman head units are exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation that include components provided by Harman because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by Harman and/or its customers. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibit 20 contains photographs of the BMW 428i Infotainment system and Harman NBT EVO HU head unit. Exhibit 22 contains photographs of the BMW i8 Infotainment system and Harman NBT HU head unit.

91. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of Harman that violates Section 337. As set forth below, the charts in Exhibits 24-30 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the ‘428 Patent

92. Exhibits 24 and 25 include charts comparing independent claims 1, 10, and 25 of the ‘428 Patent to the BMW 428i and i8 Infotainment systems, and BMW vehicles containing the same, which include Harman NBT EVO HU and NBT HU head units. As set forth in these charts, the Harman head units provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the ‘428 Patent. These exhibits show that, at the time of importation, the BMW 428i Infotainment and BMW i8 Infotainment systems, and vehicles containing the same, directly infringe at least independent claims 1, 10, and 25 of the

'428 Patent. These exhibits also show that the Harman head units incorporated in the charted devices directly or indirectly infringe at least independent claims 1, 10, and 25 of the '428 Patent. On information and belief, Harman directly infringes, contributes to, and/or induces the direct infringement by BMW of the '428 Patent.

93. On information and belief, Harman designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '428 Patent. There are no substantial non-infringing uses of these components. Harman knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Harman. Prior to the filing of this complaint, Harman had actual knowledge of the '428 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 41 (Letter to Harman dated December 18, 2015). In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, Harman also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '428 Patent. Exhibit 41 (Letter to Harman dated December 18, 2015). On information and belief, Harman has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '428 Patent.

3. Infringement of the '439 Patent

94. Exhibit 26 includes a chart comparing independent claim 1 of the '439 Patent to the BMW 428i Infotainment and i8 Infotainment systems, and BMW vehicles containing the same, which include Harman NBT EVO HU and NBT HU head units. As set forth in this chart, the Harman head units provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '439 Patent. These exhibits show that, at the time of importation, the BMW 428i Infotainment and BMW i8 Infotainment systems, and vehicles containing the same directly infringe at least independent claim 1 of the '439 Patent. These exhibits also show that the Harman head units incorporated in the charted devices directly or indirectly infringe at least independent claim 1 of the '439 Patent. On information and belief, Harman directly infringes, contributes to, and/or induces the direct infringement by BMW of the '439 Patent.

95. On information and belief, Harman designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '439 Patent. There are no substantial non-infringing uses of these components. Harman knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Harman. Prior to the filing of this complaint, Harman had actual knowledge of the '439 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 41 (Letter to Harman dated December 18, 2015). In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, Harman also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the

customary and intended manner is likely to infringe the '439 Patent. Exhibit 41 (Letter to Harman dated December 18, 2015). On information and belief, Harman has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '439 Patent.

4. Infringement of the '935 Patent

96. Exhibits 27 and 28 include charts comparing independent claim 1 of the '935 Patent to the BMW 428i Infotainment and i8 Infotainment systems, and BMW vehicles containing the same, which include Harman NBT EVO HU and NBT HU head units. As set forth in these charts, the Harman head units provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. These exhibits show that, at the time of importation, the BMW 428i Infotainment and BMW i8 Infotainment systems, and vehicles containing the same directly infringe at least independent claim 1 of the '935 Patent. These exhibits also show that the Harman head units incorporated in the charted devices directly or indirectly infringe at least independent claim 1 of the '935 Patent. On information and belief, Harman directly infringes, contributes to, and/or induces the direct infringement by BMW of the '935 Patent.

97. On information and belief, Harman designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '935 Patent. There are no substantial non-infringing uses of these components. Harman knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate

computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Harman. Prior to the filing of this complaint, Harman had actual knowledge of the '935 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 41 (Letter to Harman dated December 18, 2015). In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, Harman also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '935 Patent. Exhibit 41 (Letter to Harman dated December 18, 2015). On information and belief, Harman has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '935 Patent.

5. Infringement of the '945 Patent

98. Exhibits 29 and 30 include charts comparing independent claims 1 and 21 of the '945 Patent to the BMW 428i Infotainment and i8 Infotainment systems, and BMW vehicles containing the same, which include Harman NBT EVO HU and NBT HU head units. As set forth in these charts, the Harman head units provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '945 Patent. These exhibits show that, at the time of importation, the BMW 428i Infotainment and BMW i8 Infotainment systems, and vehicles containing the same, directly infringe at least independent claims 1 and 21 of the '945 Patent. These exhibits also show that the Harman head units incorporated in the charted devices directly or indirectly infringe at least independent claims 1 and 21 of the '945 Patent. On

information and belief, Harman directly infringes, contributes to, and/or induces the direct infringement by BMW of the '945 Patent.

99. On information and belief, Harman designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, lead to direct infringement of the inventions claimed in the '945 Patent. There are no substantial non-infringing uses of these components. Harman knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Harman. Prior to the filing of this complaint, Harman had actual knowledge of the '945 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 41 (Letter to Harman dated December 18, 2015). In addition to actual knowledge of the '945 Patent, prior to the filing of this complaint, Harman also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '945 Patent. Exhibit 41 (Letter to Harman dated December 18, 2015). On information and belief, Harman has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '945 Patent. Thus, on information and belief, Harman is contributing to and/or inducing the infringement of the '945 Patent.

6. Specific Instance of Sale and Importation

100. Specific instances of sale and importation with respect to BMW are already alleged in paragraphs 71-75, *supra*.

101. Further, upon information and belief, Respondent Harman imports, sells for importation into the United States, and/or sells within the United States after importation head units and/or infotainment systems that are used by Respondents and other customers that are the same or substantially similar to the Harman NBT EVO HU and NBT HU head units. These head units provide highly relevant functionality for the BMW 428i Infotainment and BMW i8 Infotainment systems. For example, as shown in Exhibit 20, the Harman NBT EVO HU used in the BMW 428i Infotainment system contains an integrated circuit bearing the marking of 5432AAAN. Exhibit 42 shows that the 5432AAAN integrated circuit is a member of TI's OMAP 5 integrated circuit family. As depicted in Exhibits 24, 26, 27 and 29, TI's OMAP 5 integrated circuit provides highly relevant functionality with respect to the Asserted Patent claims. Furthermore, as shown in Exhibits 43 and 44, TI's OMAP 5 integrated circuit is, upon information and belief, made by United Microelectronics Corporation ("UMC") in Singapore and/or Taiwan. Furthermore, as shown in Exhibit 22, Harman's NBT HU head unit used in the BMW i8 Infotainment system is marked "Manufactured in Germany" which, upon information and belief, designates the country of origin.

102. Thus, Harman is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and/or selling after importation head units and/or infotainment systems that are incorporated into devices that are imported into the United States, sold for importation into the United States, and/or sold within the United States after importation, such as the BMW i8 Infotainment and BMW428i Infotainment systems, as well as other infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing the same that infringe the Asserted Patents.

D. Honda

1. Representative Involved Article

103. On information and belief, Honda is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained Honda's 2016 Accord infotainment system ("Honda Accord Infotainment") that Honda imported, sold for importation, and/or sold within the United States after importation.

104. Complainant believes that the Honda Accord Infotainment system and vehicles containing the same are exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation by Honda because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by Honda. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibit 45 contains photographs of the Honda Accord Infotainment system. Exhibit 46 contains a photograph of the 2016 Honda Civic, which on information and belief, contains an infotainment system that is the same or substantially similar to the Honda Accord Infotainment system.

105. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart "a representative involved article" of Honda that violates Section 337. As set forth below, the charts in Exhibits 47-50 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the '428 Patent

106. Exhibit 47 includes a chart comparing independent claims 1, 10, and 25 of the '428 Patent to the Honda Accord Infotainment system and vehicles containing the same. Exhibit 47 shows that the Honda Accord Infotainment system and vehicles containing the same are covered by at least claims 1, 10, and 25 of the '428 Patent.

3. Infringement of the '439 Patent

107. Exhibit 48 includes a chart comparing independent claim 1 of the '439 Patent to the Honda Accord Infotainment system and vehicles containing the same. Exhibit 48 shows that the Honda Accord Infotainment system and vehicles containing the same are covered by at least claim 1 of the '439 Patent.

4. Infringement of the '935 Patent

108. Exhibit 49 includes a chart comparing independent claim 1 of the '935 Patent to the Honda Accord Infotainment system and vehicles containing the same. Exhibit 49 shows that the Honda Accord Infotainment system and vehicles containing the same are covered by at least claim 1 of the '935 Patent.

5. Infringement of the '945 Patent

109. Exhibit 50 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the Honda Accord Infotainment system and vehicles containing the same. Exhibit 50 shows that the Honda Accord Infotainment system and vehicles containing the same are covered by at least claims 1 and 21 of the '945 Patent.

6. Specific Instance of Sale and Importation

110. On information and belief, Honda imports, sells for importation into the United States, and/or sells within the United States after importation the Honda Accord

Infotainment system depicted in Exhibit 45 and vehicles containing the same or substantially similar infotainment systems.

111. Pursuant to Commission Rule 210.12(a)(3), Exhibit 51 is a receipt from Honda Parts Unlimited in Phoenix, AZ showing a sale of the Honda Accord Infotainment system within the United States. As shown in Exhibit 52, the Honda Accord Infotainment system is the infotainment system that is used in the 2016 Honda Accord. As shown in Exhibit 45, the Honda Accord Infotainment system label specifies that it was “Made in Japan.” Upon information and belief, Honda imports, sells for importation, and/or sells after importation into the United States vehicles containing the same or substantially similar infotainment systems. For example, as shown in Exhibit 46, Honda sells in the United States certain 2016 Honda Civic series vehicles, including but not limited to the vehicle that bears the vehicle identification number (“VIN”) of 2HGFC2F7XGH502524. As depicted in Exhibit 46, the 2016 Honda Civic includes an infotainment system comprising a head end unit and digital dashboard that are, upon information and belief, the same or substantially similar to the Honda Accord Infotainment system and vehicles containing the same. As shown in Exhibits 46 and 33, the 2016 Honda Civic vehicle bearing the VIN number of 2HGFC2F7XGH502524 indicates that the final assembly was made in Canada, and therefore it, and all of its components, was imported.

112. On information and belief, Honda’s United States based operations and subsidiaries import, sell for importation into the United States, and/or sell within the United States after importation Accused Products that are the same or substantially similar to the Honda Accord Infotainment system and vehicles containing the same. As shown in Exhibits 53 and 54, Honda North America, Inc. and American Honda Motor Co., Inc. are at least involved in the sales and distribution of Accused Products in the United States. As shown in Exhibit 54, Honda

R&D Americas, Inc. is involved in the research and development of vehicles in the United States. On information and belief, Honda R&D Americas, Inc. imports infotainment systems for use in its vehicles that are the same or substantially similar to the Honda Accord Infotainment system. As shown in Exhibit 55, Honda Engineering North America, Inc., Honda of America Mfg. Inc., Honda Manufacturing of Alabama, LLC, and Honda Manufacturing of Indiana, LLC are involved in the manufacturing of Honda Accord, Civic, CRV, Crosstour, Odyssey, Pilot, and Acura MDX, TLX, ILX, RDX, and NSX vehicles in the United States. As shown in Exhibit 56, these vehicles incorporate infotainment systems that are, on information and belief, the same or substantially similar to the Honda Accord Infotainment system and imported, sold for importation, and/or sold after importation into the United States.

113. Thus, Honda is violating Section 337 of the Tariff Act of 1930 by importing into the United States, selling for importation into the United States, and/or selling within the United States after importation the Honda Accord Infotainment system, vehicles containing the same, as well as other Accused Products that infringe the Asserted Patents.

E. NVIDIA

1. Representative Involved Article

114. On information and belief NVIDIA is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained Accused Products incorporating components designed, manufactured, and sold by NVIDIA.

115. NVIDIA designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, lead to direct infringement of

the invention claimed in the Asserted Patents. There are no substantial non-infringing uses of these components. As already noted, Exhibits 25, 28 and 30 include charts comparing the independent claims of the '428, '935, and '945 Patents to the BMW i8 Infotainment system, which includes an NVIDIA EMP9 graphics processor, and 2015 BMW i8 vehicles containing the same. Exhibits 77, 78, and 80 include charts comparing the independent claims of the '428, '439, and '945 Patents to the Audi TT Infotainment system, which includes an NVIDIA Tegra 3 integrated circuit, and 2016 Audi TT vehicles containing the same. As set forth in these charts, NVIDIA circuitry practices, in whole or in material part, the technology claimed by the Asserted Patents. Complainant believes that the NVIDIA EMP9 graphics processor and Tegra 3 integrated circuit are exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation by Respondents that include components provided by NVIDIA because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, and/or sold within the United States after importation by NVIDIA and/or its customers. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibits 22 and 23 contain photographs of the BMW i8 Infotainment system, which includes an NVIDIA EMP9 graphics processor, and 2015 BMW i8 vehicles containing the same. Exhibit 75 contains photographs of the Audi TT Infotainment system⁴ and 2016 Audi TT vehicles containing the same.

⁴ On information and belief, as of the filing date of this Complaint, the 2016 Audi TT Infotainment system is not available for purchase in the United States as a standalone unit. Thus, in lieu of producing photographs for the NVIDIA Tegra 3 integrated circuit, Exhibit 75 provides photographs for the final in-vehicle assembly of the Audi TT Infotainment system that incorporates the NVIDIA Tegra 3 integrated circuit. Exhibit 83 (Press release showing that the 2016 Audi TT contains an NVIDIA Tegra 3 integrated circuit).

116. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of NVIDIA that violates Section 337. As set forth below, the charts in Exhibits 25, 28, 30, 77, 78, and 80 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the ‘428 Patent

117. Exhibit 25 includes charts comparing independent claims 1, 10, and 25 of the ‘428 Patent to the BMW i8 Infotainment system, which includes an NVIDIA EMP9 graphics processor, and the 2015 BMW i8 vehicles containing the same. Exhibit 77 includes charts comparing independent claims 1, 10, and 25 of the ‘428 Patent to the Audi TT Infotainment system, which includes an NVIDIA Tegra 3 integrated circuit, and 2016 Audi TT vehicles containing the same. As set forth in these charts, NVIDIA components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the ‘428 Patent. These exhibits show that, at the time of importation, the BMW i8 Infotainment and Audi TT Infotainment systems and vehicles containing the same directly infringe at least independent claims 1, 10, and 25 of the ‘428 Patent. These exhibits also show that the NVIDIA components incorporated in the charted device directly or indirectly infringe at least independent claims 1, 10, and 25 of the ‘428 Patent. On information and belief, NVIDIA directly infringes, contributes to, and/or induces the direct infringement by BMW and Volkswagen of the ‘428 Patent.

118. NVIDIA knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by NVIDIA. Prior to the filing of this complaint, NVIDIA had actual knowledge of the ‘428 Patent and that its components and the products incorporating them are imported into,

sold, and used in the United States. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, NVIDIA also had knowledge that use of its components in devices by, among others, BMW and Volkswagen, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner, is likely to infringe the '428 Patent. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). On information and belief, NVIDIA has continued to sell components and distribute product literature and website materials inducing BMW, Volkswagen, and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, NVIDIA is contributing to and/or inducing the infringement of the '428 Patent.

3. Infringement of the '439 Patent

119. Exhibit 78 includes a chart comparing independent claim 1 of the '439 Patent to the Audi TT Infotainment system, which includes an NVIDIA Tegra 3 integrated circuit, and Audi TT vehicles containing the same. As set forth in this chart, NVIDIA components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '439 Patent. This exhibit shows that, at the time of importation, the Audi TT Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '439 Patent. This exhibit also shows that the NVIDIA components incorporated in the charted device directly or indirectly infringe at least independent claim 1 of the '439 Patent. On information and belief, NVIDIA directly infringes, contributes to, and/or induces the direct infringement by Volkswagen of the '439 Patent.

120. NVIDIA knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and

graphics, as evidenced by at least product literature distributed in connection with the subject components by NVIDIA. Prior to the filing of this complaint, NVIDIA had actual knowledge of the '439 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, NVIDIA also had knowledge that use of its components in devices by, among others, BMW and Volkswagen, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner, is likely to infringe the '439 Patent. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). On information and belief, NVIDIA has continued to sell components and distribute product literature and website materials inducing BMW, Volkswagen, and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, NVIDIA is contributing to and/or inducing the infringement of the '439 Patent.

4. Infringement of the '935 Patent

121. Exhibit 28 includes a chart comparing independent claim 1 of the '935 Patent to the BMW i8 Infotainment system, which includes an NVIDIA EMP9 graphics processor, and 2015 BMW i8 vehicles containing the same. As set forth in this chart, NVIDIA components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. This exhibit shows that, at the time of importation, the BMW i8 Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '935 Patent. This exhibit also shows that the NVIDIA components incorporated in the charted device directly or indirectly infringe at least independent claim 1 of

the '935 Patent. On information and belief, NVIDIA directly infringes, contributes to, and/or induces the direct infringement by BMW of the '935 Patent.

122. NVIDIA knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by NVIDIA. Prior to the filing of this complaint, NVIDIA had actual knowledge of the '935 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, NVIDIA also had knowledge that use of its components in devices by, among others, BMW and Volkswagen, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner, is likely to infringe the '935 Patent. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). On information and belief, NVIDIA has continued to sell components and distribute product literature and website materials inducing BMW, Volkswagen, and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, NVIDIA is contributing to and/or inducing the infringement of the '935 Patent.

5. Infringement of the '945 Patent

123. Exhibit 30 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the BMW i8 Infotainment system, which includes an NVIDIA EMP9 graphics processor, and 2015 BMW i8 vehicles containing the same. Exhibit 80 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the Audi TT Infotainment system, which includes an NVIDIA Tegra 3 integrated circuit, and 2016 Audi TT vehicles containing the

same. As set forth in these charts, NVIDIA components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '945 Patent. These exhibits show that, at the time of importation, the BMW i8 Infotainment and Audi TT Infotainment systems and vehicles containing the same directly infringe at least independent claims 1 and 21 of the '945 Patent. These exhibits also show that the NVIDIA components incorporated in the charted device directly or indirectly infringe at least independent claims 1 and 21 of the '945 Patent. On information and belief, NVIDIA directly infringes, contributes to, and/or induces the direct infringement by BMW and Volkswagen of the '945 Patent.

124. NVIDIA knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by NVIDIA. Prior to the filing of this complaint, NVIDIA had actual knowledge of the '945 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). In addition to actual knowledge of the '945 Patent, prior to the filing of this complaint, NVIDIA also had knowledge that use of its components in devices by, among others, BMW and Volkswagen, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner, is likely to infringe the '945 Patent. Exhibit 57 (Letter to NVIDIA dated December 18, 2015). On information and belief, NVIDIA has continued to sell components and distribute product literature and website materials inducing BMW, Volkswagen, and others to use its products in the customary and intended manner which infringes the '945 Patent. Thus, on information and belief, NVIDIA is contributing to and/or inducing the infringement of the '945 Patent.

6. Specific Instance of Sale and Importation

125. Specific instances of sale and importation with respect to BMW are already alleged in paragraphs 71-75, *supra*. Specific instances of sale and importation with respect to Volkswagen are alleged in paragraphs 175-180, *infra*.

126. Further, upon information and belief, Respondent NVIDIA imports, sells for importation into the United States, and/or sells within the United States after importation components that are used by Respondents and other customers. These components provide highly relevant functionality for the BMW i8 Infotainment and Audi TT Infotainment systems and vehicles containing the same. As shown in Exhibit 22, NVIDIA's EMP9 graphics processor used in BMW i8 Infotainment system is marked "Taiwan," which upon information and belief, designates the country of origin. Furthermore, as shown in Exhibits 75 and 83, the Audi TT Infotainment system, which upon information and belief, contains NVIDIA's Tegra 3 integrated circuit, is integrated into a vehicle that is imported into the United States.

127. Thus, NVIDIA is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and/or selling after importation components that are incorporated into devices that are imported into the United States, sold for importation into the United States, and/or sold within the United States after importation, such as the BMW i8 Infotainment and Audi TT Infotainment systems, as well as other infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, other computing and/or graphics-capable electronic devices, and vehicles containing the same that infringe the Asserted Patents.

F. Renesas

1. Representative Involved Article

128. On information and belief Renesas is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained Accused Products incorporating components designed, manufactured, and sold by Renesas.

129. As already noted, Exhibits 47-50 include charts comparing the independent claims of the Asserted Patents to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and 2016 Honda Accord vehicles containing the same. As set forth in these charts, Renesas components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the Asserted Patents. Complainant believes that the Renesas R8A7793 integrated circuit is exemplary of numerous other Accused Products imported, sold for importation, and/or sold within the United States after importation that include components provided by Renesas because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by Renesas and/or its customers. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibit 45 contains photographs of the Honda Accord Infotainment system and Renesas R8A7793 integrated circuit.

130. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart "a representative involved article" of Renesas that violates Section 337. As set forth below, the charts in Exhibits 47-50 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the '428 Patent

131. Exhibit 47 includes a chart comparing independent claims 1, 10, and 25 of the '428 Patent to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and 2016 Honda Accord vehicles containing the same. As set forth in this chart, Renesas components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '428 Patent. This exhibit shows that, at the time of importation, the Honda Accord Infotainment system and vehicles containing the same directly infringe at least independent claims 1, 10, and 25 of the '428 Patent. This exhibit also shows that the Renesas components incorporated in the charted device directly or indirectly infringe at least independent claims 1, 10, and 25 of the '428 Patent. On information and belief, Renesas directly infringes, contributes to, and/or induces the direct infringement by Honda of the '428 Patent.

132. On information and belief, Renesas designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '428 Patent. There are no substantial non-infringing uses of these components. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Renesas. Prior to the filing of this complaint, Renesas had actual knowledge of the '428 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 58 (Letter to Renesas dated December 18, 2015). In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of its components in devices by, among others, Honda, and the use by consumers of the devices into which such components are incorporated, in the

customary and intended manner is likely to infringe the '428 Patent. Exhibit 58 (Letter to Renesas dated December 18, 2015). On information and belief, Renesas has continued to sell components and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the '428 Patent.

3. Infringement of the '439 Patent

133. Exhibit 48 includes a chart comparing independent claim 1 of the '439 Patent to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and 2016 Honda Accord vehicles containing the same. As set forth in this chart, Renesas components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '439 Patent. This exhibit shows that, at the time of importation, the Honda Accord Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '439 Patent. This exhibit also shows that the Renesas components incorporated in the charted device directly or indirectly infringe at least independent claim 1 of the '439 Patent. On information and belief, Renesas directly infringes, contributes to, and/or induces the direct infringement by Honda of the '439 Patent.

134. On information and belief, Renesas designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '439 Patent. There are no substantial non-infringing uses of these components. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with

the subject components by Renesas. Prior to the filing of this complaint, Renesas had actual knowledge of the '439 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 58 (Letter to Renesas dated December 18, 2015). In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of its components in devices by, among others, Honda, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '439 Patent. Exhibit 58 (Letter to Renesas dated December 18, 2015). On information and belief, Renesas has continued to sell components and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the '439 Patent.

4. Infringement of the '935 Patent

135. Exhibit 49 includes a chart comparing independent claim 1 of the '935 Patent to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and 2016 Honda Accord vehicles containing the same. As set forth in this chart, Renesas components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. This exhibit shows that, at the time of importation, the Honda Accord Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '935 Patent. This exhibit also shows that the Renesas components incorporated in the charted device directly or indirectly infringe at least independent claim 1 of the '935 Patent. On information and belief, Renesas directly infringes, contributes to, and/or induces the direct infringement by Honda of the '935 Patent.

136. On information and belief, Renesas designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '935 Patent. There are no substantial non-infringing uses of these components. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Renesas. Prior to the filing of this complaint, Renesas had actual knowledge of the '935 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 58 (Letter to Renesas dated December 18, 2015). In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of its components in devices by, among others, Honda, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '935 Patent. Exhibit 58 (Letter to Renesas dated December 18, 2015). On information and belief, Renesas has continued to sell components and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, Renesas is contributing to and/or inducing the infringement of the '935 Patent.

5. Infringement of the '945 Patent

137. Exhibit 50 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the Honda Accord Infotainment system, which includes a Renesas R8A7793 integrated circuit, and 2016 Honda Accord vehicles containing the same. As set forth in this chart, Renesas components provide circuitry and functionality that practices, in whole or in

material part, the technology claimed by the '945 Patent. This exhibit shows that, at the time of importation, the Honda Accord Infotainment system and vehicles containing the same directly infringe at least independent claims 1 and 21 of the '945 Patent. This exhibit also shows that the Renesas components incorporated in the charted device directly or indirectly infringe at least independent claims 1 and 21 of the '945 Patent. On information and belief, Renesas directly infringes, contributes to, and/or induces the direct infringement by Honda of the '945 Patent.

138. On information and belief, Renesas designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the inventions claimed in the '945 Patent. There are no substantial non-infringing uses of these components. Renesas knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by Renesas. Prior to the filing of this complaint, Renesas had actual knowledge of the '945 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 58 (Letter to Renesas dated December 18, 2015). In addition to actual knowledge of the '945 Patent, prior to the filing of this complaint, Renesas also had knowledge that use of its components in devices by, among others, Honda, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '945 Patent. Exhibit 58 (Letter to Renesas dated December 18, 2015). On information and belief, Renesas has continued to sell components and distribute product literature and website materials inducing Honda and others to use its products in the customary and intended manner which infringes the '945 Patent. Thus, on

information and belief, Renesas is contributing to and/or inducing the infringement of the '945 Patent.

6. Specific Instance of Sale and Importation

139. Specific instances of sale and importation with respect to Honda are already alleged in paragraphs 110-113, *supra*.

140. Further, upon information and belief, Respondent Renesas imports, sells for importation into the United States, and/or sells within the United States after importation components that are used by Respondents and other customers. These components provide highly relevant functionality for the Honda Accord Infotainment system. For example, as shown in Exhibit 45, Renesas' R8A7793 application processor used in the Honda Accord Infotainment system is marked "Japan" which, upon information and belief, designates the country of origin.

141. On information and belief, Renesas' United States based operations and subsidiaries import, sell for importation into the United States and/or sell within the United States after importation Accused Products that are the same or substantially similar to the Renesas R8A7793 integrated circuit. As shown in Exhibit 59, Renesas Electronics America, Inc. is responsible for sales of integrated circuits throughout North America. As shown in Exhibit 60, Renesas Electronics America, Inc.'s product offerings include, without limitation, the Renesas R-car series of integrated circuits that are, on information and belief, the same or substantially similar to the Renesas R8A7793 integrated circuit and imported, sold for importation, and/or sold after importation into the United States.

142. Thus, Renesas is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and selling after importation components that are incorporated into devices that are imported into the United States, sold for importation into the United States,

and/or sold within the United States after importation, such as the Honda Accord Infotainment system, as well as other infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing the same that infringe the Asserted Patents.

G. Texas Instruments

1. Representative Involved Article

143. On information and belief, TI is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained Accused Products incorporating components designed, manufactured, and sold by TI.

144. As already noted, Exhibits 24, 26, 27, and 29 includes charts comparing the independent claims of the Asserted Patents to the BMW 428i Infotainment system, which includes a TI OMAP 5432 integrated circuit, and BMW 428i vehicles containing the same. As set forth in these charts, TI components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the Asserted Patents. Complainant believes that the BMW 428i Infotainment system and vehicles containing the same are exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation that include components provided by TI because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by TI and/or its customers. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibits 20 and 21 contain photographs of the

BMW 428i Infotainment system, which includes a TI OMAP 5432 integrated circuit, and BMW 428i vehicles containing the same.

145. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of TI that violates Section 337. As set forth below, the charts in Exhibits 24, 26, 27 and 29 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the ‘428 Patent

146. Exhibit 24 includes a chart comparing independent claims 1, 10, and 25 of the ‘428 Patent to the BMW 428i Infotainment system, which includes a TI OMAP 5432 integrated circuit, and BMW 428i vehicles containing the same. As set forth in this chart, TI components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the ‘428 Patent. This exhibit shows that, at the time of importation, the BMW 428i Infotainment system and vehicles containing the same directly infringe at least independent claims 1, 10, and 25 of the ‘428 Patent. This exhibit also shows that the TI components incorporated in the charted device directly or indirectly infringe at least independent claims 1, 10, and 25 of the ‘428 Patent. On information and belief, TI directly infringes, contributes to, and/or induces the direct infringement by BMW of the ‘428 Patent.

147. On information and belief, TI designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the invention claimed in the ‘428 Patent. There are no substantial non-infringing uses of these components. TI knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject

components by TI. Prior to the filing of this complaint, TI had actual knowledge of the '428 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 61 (Letter to TI dated December 18, 2015). In addition to actual knowledge of the '428 Patent, prior to the filing of this complaint, TI also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '428 Patent. Exhibit 61 (Letter to TI dated December 18, 2015). On information and belief, TI has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '428 Patent. Thus, on information and belief, TI is contributing to and/or inducing the infringement of the '428 Patent.

3. Infringement of the '439 Patent

148. Exhibit 26 includes a chart comparing independent claim 1 of the '439 Patent to the BMW 428i Infotainment system, which includes a TI OMAP 5432 integrated circuit, and BMW 428i vehicles containing the same. As set forth in this chart, TI components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '439 Patent. This exhibit shows that, at the time of importation, the BMW 428i Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '439 Patent. This exhibit also shows that the TI components incorporated in the charted device directly or indirectly infringe at least independent claim 1 of the '439 Patent. On information and belief, TI directly infringes, contributes to, and/or induces the direct infringement by BMW of the '439 Patent.

149. On information and belief, TI designs, manufactures and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the invention claimed in the '439 Patent. There are no substantial non-infringing uses of these components. TI knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by TI. Prior to the filing of this complaint, TI had actual knowledge of the '439 Patent and that its components and the products incorporating them are imported into, sold and used in the United States. Exhibit 61 (Letter to TI dated December 18, 2015). In addition to actual knowledge of the '439 Patent, prior to the filing of this complaint, TI also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '439 Patent. Exhibit 61 (Letter to TI dated December 18, 2015). On information and belief, TI has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '439 Patent. Thus, on information and belief, TI is contributing to and/or inducing the infringement of the '439 Patent.

4. Infringement of the '935 Patent

150. Exhibit 27 includes a chart comparing independent claim 1 of the '935 Patent to the BMW 428i Infotainment system, which includes a TI OMAP 5432 integrated circuit, and BMW 428i vehicles containing the same. As set forth in this chart, TI components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '935 Patent. This exhibit shows that, at the time of importation, the BMW 428i

Infotainment system and vehicles containing the same directly infringe at least independent claim 1 of the '935 Patent. This exhibit also shows that the TI components incorporated in the charted device directly or indirectly infringe at least independent claim 1 of the '935 Patent. On information and belief, TI directly infringes, contributes to, and/or induces the direct infringement by BMW of the '935 Patent.

151. On information and belief, TI designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the invention claimed in the '935 Patent. There are no substantial non-infringing uses of these components. TI knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by TI. Prior to the filing of this complaint, TI had actual knowledge of the '935 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 61 (Letter to TI dated December 18, 2015). In addition to actual knowledge of the '935 Patent, prior to the filing of this complaint, TI also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '935 Patent. Exhibit 61 (Letter to TI dated December 18, 2015). On information and belief, TI has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '935 Patent. Thus, on information and belief, TI is contributing to and/or inducing the infringement of the '935 Patent.

5. Infringement of the '945 Patent

152. Exhibit 29 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the BMW 428i Infotainment system, which includes a TI OMAP 5432 integrated circuit, and BMW 428i vehicles containing the same. As set forth in this chart, TI components provide circuitry and functionality that practices, in whole or in material part, the technology claimed by the '945 Patent. This exhibit shows that, at the time of importation, the BMW 428i Infotainment system and vehicles containing the same directly infringe at least independent claims 1 and 21 of the '945 Patent. This exhibit also shows that the TI components incorporated in the charted device directly or indirectly infringe at least independent claims 1 and 21 of the '945 Patent. On information and belief, TI directly infringes, contributes to, and/or induces the direct infringement by BMW of the '945 Patent.

153. On information and belief, TI designs, manufactures, and sells one or more components which directly infringe or, if used for their normal and intended purpose, leads to direct infringement of the invention claimed in the '945 Patent. There are no substantial non-infringing uses of these components. TI knows and intends that the components will be used in their ordinary and customary manner for their intended purpose, namely to facilitate computing and graphics, as evidenced by at least product literature distributed in connection with the subject components by TI. Prior to the filing of this complaint, TI had actual knowledge of the '945 Patent and that its components and the products incorporating them are imported into, sold, and used in the United States. Exhibit 61 (Letter to TI dated December 18, 2015). In addition to actual knowledge of the '945 Patent, prior to the filing of this complaint, TI also had knowledge that use of its components in devices by, among others, BMW, and the use by consumers of the devices into which such components are incorporated, in the customary and intended manner is likely to infringe the '945 Patent. Exhibit 61 (Letter to TI dated December 18, 2015). On

information and belief, TI has continued to sell components and distribute product literature and website materials inducing BMW and others to use its products in the customary and intended manner which infringes the '945 Patent. Thus, on information and belief, TI is contributing to and/or inducing the infringement of the '945 Patent.

6. Specific Instance of Sale and Importation

154. Specific instances of sale and importation with respect to BMW are already alleged in paragraphs 71-75, *supra*.

155. Further, upon information and belief, TI imports, sells for importation into the United States, and/or sells within the United States after importation components that are used by Respondents and other customers. As shown in Exhibit 20, the BMW 428i Infotainment system contains an integrated circuit bearing the marking of 5432AAAN. Exhibit 42 shows that the 5432AAAN integrated circuit is a member of TI's OMAP 5 integrated circuit family. As depicted in Exhibits 24, 26, 27 and 29, TI's OMAP 5 integrated circuit provides highly relevant functionality for the BMW 428i Infotainment system. Furthermore, as shown in Exhibits 43 and 44, TI's OMAP 5 integrated circuit is, upon information and belief, made by United Microelectronics Corporation ("UMC") in Singapore and/or Taiwan.

156. Thus, TI is violating Section 337 of the Tariff Act of 1930 by importing, selling for importation, and/or selling after importation components that are incorporated into devices that are imported into the United States, sold for importation into the United States and/or sold within the United States after importation, such as the BMW 428i Infotainment system, as well as other infotainment systems, head-end units, navigation systems, graphics processors, microprocessors, integrated circuits, and other computing and/or graphics-capable electronic devices, and vehicles containing the same that infringe the Asserted Patents.

H. Toyota

1. Representative Involved Article

157. On information and belief, Toyota is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, and '935 Patent Claims. Complainant has obtained Toyota's 2015 Corolla infotainment system ("Toyota Corolla Infotainment") that Toyota imported, sold for importation, and/or sold within the United States after importation.

158. Complainant believes that the Toyota Corolla Infotainment system and vehicles containing the same are exemplary of numerous other Accused Products imported, sold for importation, or sold within the United States after importation by Respondent Toyota because such other devices feature the same or substantially similar infringing functionality. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by Toyota. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibit 62 contains photographs of the Toyota Corolla Infotainment system. Exhibit 63 contains a photograph of the 2016 Toyota Corolla, which on information and belief, is substantially similar to the 2015 Toyota Corolla and contains an infotainment system that is the same or substantially similar to the Toyota Corolla Infotainment system.

159. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart "a representative involved article" of Toyota that violates Section 337. As set forth below, the charts in Exhibits 64-66 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the '428 Patent

160. Exhibit 64 includes a chart comparing independent claims 1, 10, and 25 of the '428 Patent to the Toyota Corolla Infotainment system and vehicles containing the same. Exhibit 64 shows that the Toyota Corolla Infotainment system and vehicles containing the same are covered by at least claims 1, 10, and 25 of the '428 Patent.

3. Infringement of the '439 Patent

161. Exhibit 65 includes a chart comparing independent claim 1 of the '439 Patent to the Toyota Corolla Infotainment system and vehicles containing the same. Exhibit 65 shows that the Toyota Corolla Infotainment system and vehicles containing the same are covered by at least claim 1 of the '439 Patent.

4. Infringement of the '935 Patent

162. Exhibit 66 includes a chart comparing independent claim 1 of the '935 Patent to the Toyota Corolla Infotainment system and vehicles containing the same. Exhibit 66 shows that the Toyota Corolla Infotainment system and vehicles containing the same are covered by at least claim 1 of the '935 Patent.

5. Specific Instance of Sale and Importation

163. On information and belief, Toyota imports, sells for importation into the United States, and/or sells within the United States after the Toyota Corolla Infotainment system depicted in Exhibit 62 and vehicles containing the same.

164. Pursuant to Commission Rule 210.12(a)(3), Exhibit 67 is a receipt from Boch Toyota South showing a sale of the Toyota Corolla Infotainment system within the United States. As shown in Exhibit 62, the Toyota Corolla Infotainment system label specifies that it was "Assembled in Mexico."

165. As shown in Exhibit 68, the Toyota Corolla Infotainment system is the infotainment system that is used in the 2015 Toyota Corolla, which on information and belief, is the same or substantially similar to the infotainment systems used in the 2016 Toyota Corolla. As shown in Exhibit 63, Toyota sells in the United States certain 2016 Toyota Corolla vehicles, including but not limited to the vehicle that bears the vehicle identification number (“VIN”) of 2T1BURHE3GC497272. As shown in Exhibit 33, the 2015 Toyota Corolla bearing the VIN number of 2T1BURHE3GC497272 is made in Canada, and therefore it, and all of its components including the Toyota Corolla Infotainment system, was imported.

166. On information and belief, Toyota’s United States based operations and subsidiaries import, sell for importation into the United States, and/or sell within the United States after importation Accused Products that are the same or substantially similar to the Toyota Corolla Infotainment system and vehicles containing the same. Toyota Motor North America, Inc. is the corporate parent of Toyota’s United States based operations and subsidiaries including Toyota Motor Sales, U.S.A., Inc. and Toyota Motor Engineering & Manufacturing North America, Inc. As shown in Exhibit 69, Toyota Motor Sales, U.S.A., Inc. is at least involved in the sales and distribution of Accused Products throughout the United States. As shown in Exhibit 69, Toyota Motor Engineering & Manufacturing North America, Inc., Toyota Motor Manufacturing, Indiana, Inc., Toyota Motor Manufacturing, Kentucky, Inc., and Toyota Motor Manufacturing, Mississippi, Inc. are involved in the research and development and manufacturing of vehicles including the Toyota Camry, Corolla, Avalon, Venza, Sequoia, Highlander, Sienna, Tundra, and some models of the Tacoma in the United States. As shown in Exhibit 70, these vehicles incorporate infotainment systems that are, on information and belief,

the same or substantially similar to the Toyota Corolla Infotainment system and imported, sold for importation, and/or sold after importation into the United States.

167. Thus, Toyota is violating Section 337 of the Tariff Act of 1930 by importing into the United States, selling for importation into the United States, and/or selling within the United States after importation the Toyota Corolla Infotainment system, vehicles containing the same, as well as other Accused Products that infringe the '428, '439, and '935 Patents.

I. Volkswagen

1. Representative Involved Article

168. On information and belief, Volkswagen is engaged in the design, manufacture, importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of Accused Products that infringe literally or by equivalence at least the Asserted '428 Patent, '439 Patent, '935 Patent, and '945 Patent Claims. Complainant has obtained Volkswagen's 2015 Golf infotainment system ("Volkswagen Golf Infotainment") that Volkswagen imported, sold for importation, and/or sold within the United States after importation. Complainant has also obtained photographs documenting Audi's importation, sale for importation, and/or sale after importation of Audi's 2016 Audi TT infotainment system (the "Audi TT Infotainment").⁵

169. Complainant believes that the Volkswagen Golf and Audi TT Infotainment systems and vehicles containing the same are exemplary of numerous other Accused Products imported, sold for importation, and/or sold within the United States after importation by Respondent Volkswagen because such other devices feature the same or substantially similar

⁵ On information and belief, as of the filing date of this Complaint, the 2016 Audi TT Infotainment system is not available for purchase in the United States as a standalone unit.

infringing functionality. For example, as shown in Exhibits 71 and 72, most 2016 Volkswagen vehicles include the same MIB-2 architecture that is incorporated into the 2016 Audi TT Infotainment system. Accordingly, on information and belief, numerous other devices that are covered by the Asserted Patent claims have been imported, sold for importation, or sold within the United States after importation by Volkswagen. Pursuant to Commission Rule 210.12(a)(9)(x), Exhibit 73 contains photographs of the Volkswagen Golf Infotainment system and Exhibit 74 contains information regarding a 2015 Volkswagen Golf vehicle for sale containing the same. Exhibit 75 contains photographs of the Audi TT Infotainment system and 2016 Audi TT vehicle containing the same.

170. Pursuant to Commission Rule 210.12(a)(9)(viii), Complainant is required to chart “a representative involved article” of Volkswagen that violates Section 337. As set forth below, the charts in Exhibits 76-80 demonstrate that the representative involved articles violate Section 337.

2. Infringement of the ‘428 Patent

171. Exhibit 76 includes a chart comparing independent claims 1, 10, and 25 of the ‘428 Patent to the Volkswagen Golf Infotainment system and vehicles containing the same. Exhibit 77 includes a chart comparing independent claims 1, 10, and 25 of the ‘428 Patent to the Audi TT Infotainment system and vehicles containing the same. Exhibits 76 and 77 show that the Volkswagen Golf and Audi TT Infotainment systems and vehicles containing the same are covered by at least claims 1, 10, and 25 of the ‘428 Patent.

3. Infringement of the ‘439 Patent

172. Exhibit 78 includes a chart comparing independent claim 1 of the ‘439 Patent to the Audi TT Infotainment system and vehicles containing the same. Exhibit 78 shows

that the Audi TT Infotainment systems and vehicles containing the same are covered by at least claim 1 of the '439 Patent.

4. Infringement of the '935 Patent

173. Exhibit 79 includes a chart comparing independent claim 1 of the '935 Patent to the Volkswagen Golf Infotainment system and vehicles containing the same. Exhibit 79 shows that the Volkswagen Golf Infotainment system and vehicles containing the same are covered by at least claim 1 of the '935 Patent.

5. Infringement of the '945 Patent

174. Exhibit 80 includes a chart comparing independent claims 1 and 21 of the '945 Patent to the Audi TT Infotainment system and vehicles containing the same. Exhibit 80 shows that the Audi TT Infotainment system and vehicles containing the same are covered by at least claims 1 and 21 of the '945 Patent.

6. Specific Instance of Sale and Importation

175. On information and belief, Volkswagen imports, sells for importation into the United States, and/or sells within the United States after importation the products containing the Volkswagen Golf Infotainment system, Audi TT Infotainment system, 2015 Volkswagen Golf, and 2016 Audi TT vehicles containing the same depicted in Exhibits 73-75.

176. Pursuant to Commission Rule 210.12(a)(3), Exhibit 81 is a receipt from expressoemparts.com, showing a sale of the Volkswagen Golf Infotainment system within the United States. As shown in Exhibit 82, the Volkswagen Golf Infotainment system is the infotainment system that is used in the 2015 Volkswagen Golf. As shown in Exhibit 73, the Volkswagen Golf Infotainment system label specifies that it was "Made in Czech Republic."

177. As shown in Exhibit 74, Volkswagen sells in the United States certain 2015 Volkswagen Golf vehicles, including but not limited to the vehicle that bears the vehicle identification number (“VIN”) of 3VW217AU3FM101620. As shown in Exhibits 74 and 33, the final assembly for the 2015 Volkswagen Golf bearing the VIN number of 3VW217AU3FM101620 was made in Mexico, and therefore it, and all of its components including the Volkswagen Golf Infotainment system, was imported.

178. As shown in Exhibit 75, Volkswagen sells in the United States certain 2016 Audi TT vehicles, including but not limited to the vehicle that bears the vehicle identification number (“VIN”) of TRUC5AFV9G1014769. As shown in Exhibits 75 and 33, the final assembly for the 2016 Audi TT bearing the VIN number of TRUC5AFV9G1014769 was made in Hungary, and therefore it, and all of its components including the Audi TT Infotainment system, was imported. As shown in Exhibit 83, the Audi TT Infotainment system, upon information and belief, contains NVIDIA’s Tegra 3 integrated circuit.

179. On information and belief, Volkswagen’s United States based operations and subsidiaries import, sell for importation into the United States, and/or sell within the United States after importation Accused Products that are the same or substantially similar to the Volkswagen Golf and Audi TT Infotainment systems and vehicles containing the same. As shown in Exhibit 84, Volkswagen Group of America, Inc. is responsible for at least the sales and distribution of Volkswagen vehicles in the United States, including without limitation, vehicles sold under the Audi brand name. As shown in Exhibit 85, Audi of America, LLC is responsible for at least the United States sales and distribution of Volkswagen vehicles sold under the Audi brand name. As shown in Exhibit 86, Volkswagen Group of America Chattanooga Operations, LLC produces the Volkswagen Passat vehicle. As shown in Exhibit 87, the Volkswagen Passat

vehicle incorporates infotainment systems that are, on information and belief, the same or substantially similar to the Volkswagen Golf and Audi TT Infotainment systems and imported, sold for importation, and/or sold after importation into the United States.

180. Thus, Volkswagen is violating Section 337 of the Tariff Act of 1930 by importing into the United States, selling for importation into the United States, and/or selling within the United States after importation the Volkswagen Golf and Audi TT Infotainment systems, vehicles containing the same, as well as other Accused Products that infringe the Asserted Patents.

IX. HARMONIZED TARIFF SCHEDULE INFORMATION

181. On information and belief, the articles subject to this Complaint are classifiable under at least the following headings and subheadings of the Harmonized Tariff Schedule (“HTS”) of the United States: (A) 8526.91.0020 (Radio navigational aid apparatus, reception only); (B) 8527.21 (Reception apparatus for radiobroadcast, whether or not combined, in the same housing, with sound recording or reproducing apparatus or a clock, not capable of operating without an external source of power, of a kind used in motor vehicles); (C) 8471.41.01 (other automatic data processing machines comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined); (D) 8471.49.00 (other automatic data processing machines, entered in the form of systems); (E) 8471.50.01 (processing units other than those of subheading 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units); (F) 8542.31.00 (Electronic integrated circuits; Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits);

(G) 8703 (Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading 8702), including station wagons and racing cars).

182. These HTS identifications are for illustrative purposes only in compliance with the Commission Rules and are not intended to restrict the scope of the investigation.

X. RELATED LITIGATION

183. Complainant Advanced Silicon is asserting each of the '428 Patent, the '439 Patent, the '935 Patent, and the '945 Patent in actions filed recently in the United States District Courts for the District of Delaware, styled as *Advanced Silicon Technologies LLC v. Bayerische Motoren Werke AG, et al.*, 1:15-cv-1178, (D. Del.); *Advanced Silicon Technologies LLC v. Fujitsu Ten Limited, et al.*, 1:15-cv-1174, (D. Del.); *Advanced Silicon Technologies LLC v. Harman International Industries, Inc., et al.*, 1:15-cv-1173, (D. Del.); *Advanced Silicon Technologies LLC v. Honda Motor Co., Ltd., et al.*, 1:15-cv-1179, (D. Del.); *Advanced Silicon Technologies LLC v. NVIDIA Corporation*, 1:15-cv-1177, (D. Del.); *Advanced Silicon Technologies LLC v. Renesas Electronics Corporation, et al.*, 1:15-cv-1176, (D. Del.); *Advanced Silicon Technologies LLC v. Texas Instruments Incorporated*, 1:15-cv-1175, (D. Del.); *Advanced Silicon Technologies LLC v. Toyota Motor Corporation, et al.* 1:15-cv-1180, (D. Del.); *Advanced Silicon Technologies LLC v. Volkswagen AG, et al.*, 1:15-cv-1181, (D. Del.). No responsive pleading has been filed in any of these district court proceedings.

184. Other than the litigations specified above, to Complainant's knowledge the Asserted Patents are not and have not been the subject of any current or prior litigation.

XI. DOMESTIC INDUSTRY RELATING TO THE ASSERTED PATENTS

185. A domestic industry as defined in Section 337(a)(3) exists in the United States as the result of the domestic activities related to products that practice the Asserted Patents due to investments of licensees: Advanced Micro Devices, Inc. ("AMD") in at least certain

graphics processors, microprocessors, and application processing units; Intel Corporation (“Intel”) in at least the Atom Z2460, Atom Z2480, Atom Z2420, Atom Z2760, Atom Z2520, Atom Z2560, Atom Z2580, Atom Z3460, Atom Z3480, Atom Z3530, Atom Z3560, Atom Z3580, and Atom Z3590 products; and Samsung Electronics Co., Ltd. and Samsung Austin Semiconductor LLC (together, “Samsung”) in at least the Exynos 5430, Exynos 5433, Exynos 3470, Exynos 4412, Exynos 5 Octa 5410, Exynos 5 Octa 5420, Exynos 5 Octa 5422, and Exynos 7420 products.

186. Additionally, a domestic industry in the United States is in the process of being established as to each of the Asserted Patents due to the investments of licensees AMD and GlobalFoundries, Inc. (“GlobalFoundries”) in certain confidential AMD products that are still under development and not yet commercialized. These domestic industry products are described in more detail in the attached Confidential Declaration of AMD.

187. Pursuant to Commission Rule 210.12(a)(9)(iv), Complainant has attached as Confidential Exhibit 1A to the Loureiro Declaration a copy of the Advanced Micro Devices, Inc. patent purchase and license agreement. AMD’s 2011 10-K filing establishes that Samsung Electronics Co., Ltd. is licensed to the Asserted Patents. Public Exhibit 88 (AMD 2011 10-K at 53-54). Public Exhibit 89 provides a publicly available redacted copy of the Intel Corporation license to the Asserted Patents. Public Exhibit 90 provides a publicly available redacted copy of the GlobalFoundries license to the Asserted Patents.

A. Advanced Micro Devices, Inc.

188. Advanced Micro Devices, Inc. (“AMD”) is licensed to practice the Asserted Patents. Confidential Exhibit 1A (Patent Purchase Agreement). AMD designs, develops, manufactures, and sells products that use technology claimed by the Asserted Patents. More specifically, and as set forth in more detail below, AMD graphics processing unit (“GPU”) and

application processing unit (“APU”) products containing certain AMD-proprietary graphics pipeline microarchitectures (collectively, the “AMD Graphics Products”) and certain AMD microprocessor products and APUs (collectively, the “AMD Microprocessor Products”) practice and/or are, on information and belief, expected to practice, the Asserted Patents. The AMD Graphics Products and AMD Microprocessor Products are referred to collectively as the “AMD Domestic Industry Products.”

189. AMD makes significant and substantial domestic investments in connection with the protected articles, and is in the process of making significant and substantial investments in certain future products which are expected to practice the Asserted Patents. As a result of these investments, a domestic industry in the United States exists and is in the process of being established under Section 337(a)(3)(A) due to AMD’s significant investment in plant and equipment; under 337(a)(3)(B) due to AMD’s significant employment of labor and capital; and under Section 337(a)(3)(C) due to AMD’s substantial investment in research and development with respect to each of the Asserted Patents.

190. AMD is an American-based multinational semiconductor corporation headquartered in Sunnyvale, California. Founded in 1969, AMD has for over four decades been a leading innovator in semiconductor development. For instance, in 2004, AMD introduced the world’s first x86 dual-core processor; in 2006 AMD was the first to introduce a computing platform that broke the teraflop performance barrier; in 2011 AMD brought the first Accelerated Processing Units (a processing unit that integrates a central processing unit and graphics processing unit into one chip) to market; and in 2012, introduced the industry’s first quad-core x86 system-on-chip. Exhibit 91 (Nov. 2015 AMD Investor Presentation).

191. In fiscal year 2014, AMD's domestic revenues were \$1.03 billion, and constituted 19.3% of the company's total revenues (\$5.5 billion). In fiscal year 2013, this domestic percentage was 15.1% (\$801 million of \$5.29 billion), and in fiscal year 2012, this domestic percentage was 7.5% (\$407 million of \$5.42 billion).

192. AMD's proprietary graphics pipeline microarchitectures are incorporated into certain AMD Graphics Products (or, in the case of certain future products, are expected to be incorporated). These current and future AMD Graphics Products are described in further detail in the Confidential AMD Declaration attached as Confidential Exhibit 2, at ¶¶4-6. AMD's Microprocessor Products relevant here are also described in further detail in the Confidential AMD Declaration attached as Confidential Exhibit 2, at ¶¶4-6.

193. AMD Domestic Industry Products practice and/or are expected to practice each of the Asserted Patents.

194. Confidential Exhibit 92 is a chart comparing claims of the '428 Patent to the AMD Graphics Products. Exhibit 92 shows that the AMD Graphics Products practice, and are expected to practice, claims of the '428 Patent.

195. Confidential Exhibit 93 is a chart comparing claims of the '935 Patent to the AMD Graphics Products. Exhibit 93 shows that the AMD Graphics Products practice, and are expected to practice, claims of the '935 Patent.

196. Confidential Exhibit 94 is a chart comparing claims of the '945 Patent to the AMD Graphics Products. Exhibit 94 shows that the AMD Graphics Products practice, and are expected to practice, and are expected to practice, claims of the '945 Patent.

197. Confidential Exhibit 95 is a chart comparing claims of the '439 Patent to the AMD Microprocessor Products. Exhibit 95 shows that the AMD Microprocessor Products practice claims of the '439 Patent.

198. AMD invests significant sums in domestic plant and equipment relating to the AMD Domestic Industry Products and is in the process of making significant additional investments in plant and equipment in connection with certain future products. Specifically, AMD has multiple facilities across the United States directed to, among other things, research and development, and technical customer support services that include maintenance, service, and repair of AMD products. AMD's United States research and development facilities represent a significant portion of its research and development footprint worldwide. Confidential Exhibit 2 (AMD Decl. at ¶¶7, 8-13, 17); Exhibit 96 (List showing AMD facilities). Details relating to AMD's domestic expenditures on property, plant and equipment, and in specific connection with the AMD Domestic Industry Products, are set forth in the accompanying Confidential Declaration of AMD, attached as Confidential Exhibit 2, at ¶¶7, 8-13 (the "AMD Decl."). This exhibit also describes additional investments in property, plant, and equipment that AMD is in the process of making.

199. Numerous AMD employees work in the United States researching and developing, and/or providing technical support services for the AMD Domestic Industry Products. Details relating to the significant number of such domestic employees, and the significant investments AMD makes in connection with these employees in specific relation to the AMD Domestic Industry Products, are set forth in Confidential Exhibit 2 (AMD Decl. at ¶¶6, 17-24).

200. AMD makes substantial investments in research and development of its existing products and future products, including the AMD Domestic Industry Products. Exhibit 97 (AMD 2014 10-K at 13, 48-49). For example, in each of the last three fiscal years, 2014, 2013 and 2012, AMD has invested, on average, over 20% of AMD's total revenue for each fiscal year in its ongoing research and development activities for its products, including the AMD Domestic Industry Products. Exhibit 97 (AMD 2014 10-K at 13, 65).

201. Further, licensee GlobalFoundries is a global semiconductor foundry with significant manufacturing operations in the United States. GlobalFoundries is the successor entity to an AMD subsidiary, and was formed as a joint venture between Advanced Technology Investment Company ("ATIC") and AMD in 2009. In 2012, GlobalFoundries repurchased AMD's stake in the company, thus becoming wholly owned by ATIC. Exhibit 98 (GlobalFoundries 2013 Corporate Responsibility Report, at 6).

202. Licensee GlobalFoundries owns and operates semiconductor fabrication facilities in Saratoga County, New York (the "Saratoga Facility"), totaling more than 2.5 million square feet of clean room, administrative, and research and development space, and an additional facility in Burlington, Vermont. Exhibit 99 ("About GLOBALFOUNDRIES"); Exhibit 100 (GlobalFoundries: Manufacturing); Exhibit 101 (Articles: "Economic Impact of GlobalFoundries on Saratoga County"). GlobalFoundries' investments in New York alone have directly generated 2,400 jobs (with a total payroll of approximately \$206 million) and indirectly generated an additional 3,000 jobs. Exhibit 101 (Articles: "Economic Impact of GlobalFoundries on Saratoga County"). GlobalFoundries plans to make additional capital expenditures of \$9-10 billion toward its manufacturing facilities throughout 2014-2015, and the majority of these investments will be directed to the Saratoga Facility. Exhibit 102 (GlobalFoundries Fast Facts).

203. Based on public information, AMD's next generation products will be manufactured, at least in part, at GlobalFoundries' Saratoga Facility. Exhibit 103 (Press Release: "GlobalFoundries Achieves 14nm FinFET Technology Success for Next-Generation AMD Products", dated Nov. 5, 2015); Exhibit 104 (Article: "GlobalFoundries starts early production of 14nm chips"); Exhibit 105 (Article: "GlobalFoundries completes design work at Fab 8 for AMD's newest chips"); Exhibit 106 (Article: "14nm AMD Greenland Tapes Out: Attack on NVIDIA Pascal, Intel Xeon Phi"); Exhibit 107 (Article: "AMD R 400 Series Ellesmere and Baffin 'Arctic Islands' GPUs Taped Out, to Enter Production in 2016"); Exhibit 108 (Article: "AMD Confirms 14nm CPUs, GPUs, and APUs for 2016 – Working Samples Delivered by GlobalFoundries"). On information and belief, certain future AMD products, including those produced at GlobalFoundries' Saratoga Facility, will practice the technology claimed in the Asserted Patents, and significant and substantial investments have been made and will continue to be made in connection with manufacturing such products within the United States.

204. As a result, AMD has expended, and will continue to expend, significant and substantial resources in plant and equipment, labor and capital, and research and development and engineering in connection with the AMD Domestic Industry Products that are protected by the Asserted Patents. GlobalFoundries has similarly expended, and is expected to expend, significant and substantial resources in plant, equipment, labor, and capital in connection with certain AMD Domestic Industry Products that are believed to be protected by the Asserted Patents. Details regarding AMD's investments relating to its future products are set forth in the Confidential AMD Declaration, Confidential Exhibit 2 at ¶¶26-27. A domestic industry therefore exists and is in the process of being established in connection with the Asserted Patents.

B. Intel Corporation

205. Intel Corporation (“Intel”) is licensed to practice the Asserted Patents and designs, develops, manufactures, and sells products (the “Intel Domestic Industry Products”) that practice one or more claims of each of the ‘428, ‘935, and ‘945 Patents. Public Exhibit 89 (Redacted Patent Cross License Agreement between AMD, Inc. and Intel Corporation). Specifically, the Intel Domestic Industry Products include, without limitation, at least the following Intel products that incorporate the PowerVR graphics processing architecture:

Model Number	Fabrication Process
Atom Z2460	32 nm
Atom Z2480	32 nm
Atom Z2420	32 nm
Atom Z2760	32 nm
Atom Z2520	32 nm
Atom Z2560	32 nm
Atom Z2580	32 nm
Atom Z3460	22 nm
Atom Z3480	22 nm
Atom Z3530	22 nm
Atom Z3560	22 nm
Atom Z3570	22 nm
Atom Z3580	22 nm
Atom Z3590	22 nm

206. Each of the Intel Domestic Industry Products practice at least one claim of each of the ‘428, ‘935, and ‘945 Patents.

207. Exhibits 109-110 include charts comparing claims of the ‘428 Patent to the Intel Domestic Industry Products. Exhibits 109-110 show that the Intel Domestic Industry Products practice claims of the ‘428 Patent.

208. Exhibits 111-112 include charts comparing claims of the ‘935 Patent to the Intel Domestic Industry Products. Exhibits 111-112 show that the Intel Domestic Industry Products practice claims of the ‘935 Patent.

209. Exhibits 113-114 include charts comparing claims of the '945 Patent to the Intel Domestic Industry Products. Exhibits 113-114 show that the Intel Domestic Industry Products practice claims of the '945 Patent.

210. Intel has made and continues to make substantial domestic investments in connection with the protected articles. As a result of these investments, a domestic industry in the United States exists under Section 337(a)(3)(A) due to Intel's significant investment in plant and equipment; under 337(a)(3)(B) due to Intel's significant employment of labor and capital; and under Section 337(a)(3)(C) due to Intel's substantial investment in research and development with respect to each of the '428, '438, and '945 Patents.

211. Intel is headquartered in Santa Clara, California, and is the world's largest semiconductor company. Exhibit 115 (Testimony of Carolyn Duran, Ph.D., Director of Supply Chain Ramp and Regulations, Intel Corporation, Before the Environment and the Economy Subcommittee of the House Energy and Commerce Committee, Hearing on A Discussion Draft Entitled the "Chemicals in Commerce Act", March 12, 2014, at 2).

212. In fiscal year 2014, Intel's domestic revenues (\$9.8 billion) constituted 17.5% of the company's total revenues (\$55.87 billion). In fiscal year 2013, the domestic percentage was 17.2% (\$9.1 billion of \$52.71 billion), and in fiscal year 2012, this domestic percentage was 15.6% (\$8.3 million of \$53.3 billion). Intel's domestic revenue has grown by about \$1.5 billion in the last three years. Exhibit 116 (Intel 2014 10-K, at 108).

213. Intel's operations have a substantial impact on the U.S. economy. According to a recent study conducted by PricewaterhouseCoopers, Intel increased U.S. GDP by an estimated \$408.5 billion from 2008-2012. Exhibit 117 (Testimony of Cathleen Barton, Intel Education Manager, Southwestern United States, to the Committee on House Education and

Workforce, March 20, 2014, at 2). Further, Intel has a significant multiplier effect on job growth and U.S. GDP – for every Intel job in the U.S., an additional 13 American jobs are supported, resulting in a total of 774,600 jobs. Exhibit 118 (Prepared Statement for the Record of Intel Corporation for the United States Senate Committee on Finance on the Role of Trade and Technology in 21st Century Manufacturing, Jacklyn A. Sturm, Vice President and General Manager of Global Supply Management, Intel Corporation, July 17, 2014, at 2). Additionally, Intel jobs in the United States are relatively high paying. Exhibit 119 (Glass Door article); Exhibit 120 (Payscale.com article).

214. Intel invests significant sums in domestic plant and equipment. As of December 27, 2014, Intel had over \$24 billion in net property, plant and equipment in the United States, as compared to under \$10 billion in net property, plant, and equipment outside of the United States. Exhibit 116 (Intel 2014 10-K, at 109). As of December 27, 2014, Intel's major facilities in the United States consisted of 34.1 million square feet, as compared to 22.8 million square feet in other countries. *Id.* at 24. In 2013 alone, Intel invested over \$8.9 billion in capital in the United States, and as of December 27, 2014, Intel manufactured 70% of all of its microprocessors and chipsets within the United States. *Id.* at 10. Further, from 2002-2011, Intel spent more than \$68 billion on its operations, manufacturing and research and development in the United States. Exhibit 121 (Prepared Statement of Intel Corporation for the Committee on Small Business of the U.S. House of Representatives on Large and Small Businesses: How Partnership Can Promote Job Growth, Robert E. Bruck, Corporate Vice President and General Manager Technology Manufacturing Engineering Organization Intel Corporation, March 28, 2012, at 3).

215. Intel has invested billions of dollars in its United States fabrication facilities. In February 2009, Intel announced a \$7 billion upgrade to its manufacturing facilities in Oregon, Arizona, and New Mexico that are used to manufacture microprocessors that practice the Asserted Patents. This investment maintained about 7,000 permanent high-wage, high-skilled jobs, and provided another 4,000 contract jobs for technicians and construction workers. Exhibit 122 (Intel factsheet: “Intel: Made in America Since 1968”); Exhibit 116 (Intel 2014 10-K at 10). In 2010, Intel announced a \$6-8 billion investment to upgrade its U.S. manufacturing facilities and to build a new development facility in Oregon. *Id.* In 2011, Intel announced plans to invest over \$5 billion in a new chip manufacturing facility in Arizona. Exhibit 123 (Article: “Intel to Invest More than \$5 Billion to Build New Factory in Arizona”). Intel is still in the process of making these upgrades. Exhibit 124 (Article: “Intel retrofits existing plants in Chandler for new, smaller chips”); Exhibit 125 (Article: “Intel Map Shows Long-term Plan”).

216. The following semiconductor fabrication facilities are used to manufacture the Intel Domestic Industry Products:

217. **Rio Rancho, New Mexico.** Intel has manufactured in Rio Rancho since 1980. Exhibit 126 (“Intel in New Mexico”). Intel’s Fab 11X fabrication facility, which manufactures semiconductor products using Intel’s 45nm and 32nm process technology, was opened in 2002, and includes 400,000 square feet of clean room space, making it the largest clean room operated by Intel globally and one of the largest in the world. Exhibit 127 (“Jobs at Intel in Rio Rancho, New Mexico”); Exhibit 116 (Intel 2014 10-K, at 10). In 2009, Intel made a \$2.5 billion investment to upgrade the facility to produce Intel’s 32 nm chips. *Id.*; Exhibit 128 (Article: “Intel’s N.M. future”); Exhibit 129 (Article: “Intel Announces Investment in Rio Rancho, New Mexico Site”). Intel’s capital investments in its New Mexico facilities have

averaged about \$1 billion per year since 1995. Exhibit 129 (“Intel Announces Investment in Rio Rancho, New Mexico Site”); Exhibit 128 (“Intel’s N.M. Future”).

218. On information and belief, the following Intel Domestic Industry Products are based upon a 32 nm process node, and are therefore manufactured at Intel’s facilities in New Mexico: Atom Z2460, Atom Z2480, Atom Z2420, Atom Z2760, Atom Z2520, Atom Z2560, and Atom Z2580. Exhibit 116 (Intel 2014 10-K at 10).

219. Intel is the largest industrial employer in New Mexico. Intel employs about 2,300 people in New Mexico. Exhibit 126 (Intel.com article: “Intel in New Mexico”). Intel spends an average of \$245 million annually with other New Mexico businesses. *Id.*; Exhibit 128 (Article: “Intel’s N.M. future”). Intel’s annual payroll at its New Mexico facilities is about \$300 million. *Id.* Employees at Intel’s New Mexico facilities manufacture technology products for mobile, desktop, server and workstation computing, including products that practice the ‘428, ‘935, and ‘945 Patents. Exhibit 127 (Intel.com article: “Jobs at Intel in Rio Rancho, New Mexico”).

220. Hillsboro, Oregon. Intel’s operations in Oregon include six campuses that offer state-of-the-art wafer fabrication development, semiconductor research, and manufacturing dedicated to Intel’s chip designs and processes, including designs and processes for chips that practice the ‘428, ‘935, and ‘945 Patents. Exhibit 130 (Intel.com article: “Intel in Oregon”). These campuses comprise Intel’s largest and most extensive facilities site in the world. *Id.* According to Intel, it employs 18,600 people in Oregon, making it the state’s largest private employer. *Id.* Included in this campus is Intel’s Fab D1C facility that manufactures 22 nm and 14 nm processors that practice the ‘428, ‘935, and ‘945 Patents.

221. On information and belief, the following Intel Domestic Industry Products are based upon a 22nm process node, and are therefore manufactured at Intel's facilities in Oregon and/or Arizona: Atom Z3460, Atom Z3480, Atom Z3530, Atom Z3560, Atom Z3570, Atom Z3580, and Atom Z3590. Exhibit 116 (Intel 2014 10-K at 10).

222. Chandler, Arizona. Intel established a presence in Arizona in 1979, and began operations in Chandler the following year. With about 11,700 employees, Intel Arizona is Intel's second largest site in the U.S., and is the largest employer in Chandler, Arizona. Exhibit 131 (Intel.com article: "Intel in Arizona"). Intel Arizona consists of two large campuses and several smaller office buildings, which are home to several business units focused on research and development, product design and validation labs. Exhibit 132 (Intel.com article: "Jobs at Intel in Chandler, Arizona"). Since 1996, Intel has invested more than \$12 billion in high-tech manufacturing capability in Arizona, and every year, Intel spends more than \$450 million in research and development. *Id.*

223. Intel's Fab 32 fabrication facility manufactures 22 nm and 14 nm processors that practice the '428, '935, and '945 Patents. Exhibit 133 (Intel.com article: "Intel Global Manufacturing Facts"); Exhibit 134 (Article: "Intel: We Have All 14nm Capacity We Need"). The Fab 32 structure measures one million square feet with 184,000 square feet of clean room space, and employs more than 1,000 employees. Exhibit 135 (Article: "Intel Opens First High-Volume 45nm Microprocessor Manufacturing Factory").

224. On information and belief, the following Intel Domestic Industry Products are based upon a 22nm process node, and therefore manufactured at Intel's facilities in Oregon and/or Arizona: Atom Z3460, Atom Z3480, Atom Z3530, Atom Z3560, Atom Z3580, and Atom Z3590. Exhibit 116 (Intel 2014 10-K at 10).

225. As of December 27, 2014, Intel had 106,700 employees worldwide, with approximately 51% of those employees located in the United States. Exhibit 116 (Intel 10-K, at 12).

226. Intel also makes substantial investments in research and development for its existing products, as well as future products. This includes the Intel Domestic Industry Products. Intel's total research and development expenditures were \$11.5 billion in 2014, \$10.6 billion in 2013, and \$10.1 billion in 2012, and range from designing and developing new products and manufacturing processes to researching future technologies and products. Exhibit 116 (Intel 10-K, at 11-12). Over three-fourths of Intel's research and development occurs in the United States, including at major research and development facilities in Oregon, Arizona, Massachusetts, Texas, Colorado, Washington, California, and South Carolina. Exhibit 117 (Testimony of Cathleen Barton, Intel Education Manager, Southwestern United States to the Committee on House Education and Workforce, March 20, 2014, at 2). In 2012, Intel was the number one investor in research and development among U.S. publicly traded companies and the fifth largest capital investor in the United States. Exhibit 118 (Prepared Statement for the Record of Intel Corporation for the United States Senate Committee on Finance on the Role of Trade and Technology in 21st Century Manufacturing, Jacklyn A. Sturm, Vice President and General Manager of Global Supply Management, Intel Corporation, at 1).

C. Samsung

227. Samsung Electronics, Co., Ltd. ("Samsung Electronics") and its subsidiary Samsung Austin Semiconductor LLC ("SAS") (collectively, "Samsung") are licensed to practice the Asserted Patents and design, develop, manufacture and sell products (the "Samsung Domestic Industry Products") that practice one or more claims of the Asserted Patents. Specifically, certain of Samsung's Exynos system-on-chip products ("SoC") that are

manufactured by SAS practice the Asserted Patents, and are encompassed within the scope of Samsung's license. Exhibit 97, AMD 2014 10-K at 39, n.2; Exhibit 136 (Inv. No. 337-TA-941, Complaint at 59-60).The Samsung Domestic Industry Products include, without limitation, at least the following products: Exynos S5E5430, Exynos S5E5433, Exynos S5E3470, Exynos 5 Octa 5410, Exynos 5 Octa 5420, Exynos 5 Octa 5422, Exynos S5E4412, and Exynos S5E7420.

Model Number	Fabrication Process
Exynos S5E5430	20 nm
Exynos S5E5433	20 nm
Exynos S5E3470	28 nm
Exynos 5 Octa 5410	28 nm
Exynos 5 Octa 5420	28 nm
Exynos 5 Octa 5422	28 nm
Exynos S5E4412	32 nm
Exynos S5E7420	14 nm

228. Samsung Domestic Industry Products practice at least one claim of each of the Asserted Patents.

229. Exhibit 137 includes a chart comparing claims of the '428 Patent to the Samsung Domestic Industry Products. Exhibit 137 shows that at least the Samsung Exynos 5 Octa 5410 integrated circuit practices at least one claim of the '428 Patent.

230. Exhibit 138 includes a chart comparing claim 1 of the '439 Patent to the Samsung Domestic Industry Products. Exhibit 138 shows that each of the Samsung Domestic Industry Products practices at least one claim of the '439 Patent.

231. Exhibit 139 includes a chart comparing claims of the '935 Patent to the Samsung Domestic Industry Products. Exhibit 139 shows that at least the Samsung Exynos 5 Octa 5410 integrated circuit practices at least one claim of the '935 Patent.

232. Exhibit 140 includes a chart comparing claims of the '945 Patent to the Samsung Domestic Industry Products. Exhibit 140 shows that at least the Samsung Exynos 5 Octa 5410 integrated circuit practices at least one claim of the '945 Patent.

233. Samsung has made and continues to make substantial domestic investments in connection with the protected articles. As a result of these investments, a domestic industry in the United States exists under Section 337(a)(3)(A) due to Samsung's significant investment in plant and equipment, and under 337(a)(3)(B) due to Samsung's significant employment of labor and capital relating to both research and development and manufacture of the Samsung products which practice the Asserted Patents. Exhibit 141 (U.S.I.T.C. Inv. No. 337-TA-941, Order No. 12 (Initial Determination) (granting Samsung motion for summary determination that it satisfies the domestic industry economic prong based on SAS's manufacture of the Exynos 5430, Exynos 5433, Exynos 3470, and Exynos 4412 products). Samsung fabrication facilities in Austin, Texas are used to manufacture the above referenced SoCs. Exhibit 136 (Inv. No. 337-TA-941, Complaint at 59-60); Exhibit 141 (Inv. No. 337-TA-941, Order No. 12 (Initial Determination)).

234. Samsung opened its SAS fabrication facility in Austin, Texas in 1996. Exhibit 142 (Samsung.com article: "Samsung Austin Semiconductor Begins \$3.6B Expansion for Advanced Logic Chips"). Construction of this facility cost about \$1.4 billion dollars and the facility employed about 1,000 people. *Id.*; Exhibit 143 (Samsung.com article: "Samsung Opens Largest Wafer Plant in Austin, Texas"). In 2007, Samsung announced the opening of a second fabrication facility in Austin, Texas. Exhibit 143 (Samsung.com article: "Samsung Opens Largest Wafer Plant in Austin, Texas"). This second facility is housed in a 1.6 million square foot building. *Id.* It is one of the largest buildings in Austin, and is one of the largest

semiconductor facilities in the United States. *Id.* Further, as a result of the construction and implementation of this second facility, the number of Samsung employees in Austin grew to about 1,600. *Id.* By 2011, SAS had grown to more than 2,400 employees in Austin, and Samsung had invested more than \$9 billion in its Austin facilities. Samsung's investment in Austin is the largest foreign investment in Texas and one of the largest foreign investments in the United States. Exhibit 144 (Samsung.com article: "Samsung's Austin Logic Line Breaks Record Achievements"). Samsung's total investment in its Austin facilities is over \$15 billion. Exhibit 145 (Bloomberg.com article: "Samsung to Proceed With \$4 Billion Austin Plant Expansion"); *see also generally* Exhibit 136 (Inv. No. 337-TA-941, Complaint at 59-60).

235. Significant quantities of Samsung Domestic Industry Products have been and continue to be incorporated into consumer electronics products sold all over the world. For example, each of the above Exynos SoCs incorporating technology claimed by the Asserted Patents has been employed in versions of the Samsung Galaxy Smartphone, one of the most popular lines of smartphones in the world. Exhibit 146 (Article: "Galaxy Alpha is powered by Exynos 5430, Samsung's first 20nm processor"); Exhibit 147 (Article: "Samsung Galaxy Alpha will be equipped with Exynos 5433 processor and 12MP camera"); Exhibit 148 (Article: "Samsung Galaxy S5 mini review"); Exhibit 149 ("Samsung Galaxy Alpha vs Samsung Galaxy S III"); and Exhibit 150 (Article: "Samsung's Exynos 7420 Is One Small Chip – Galaxy S6 Teardown Reveals A lot").

236. The existence of a domestic industry based on the manufacture of Samsung Domestic Industry Products at SAS is further evidenced by the fact that the ALJ in Investigation No. 337-TA-941 found that a domestic industry existed in the United States based on SAS's manufacture of at least a subset these very same products, and the Commission did not

review this determination. Exhibit 141 (Inv. No. 337-TA-941, Order No. 12 (Initial Determination)); Exhibit 151 (Aug. 13, 2015 Commission Notice of Determination Not to Review Order No. 12).

237. Specifically, on July 16, 2015, ALJ David P. Shaw issued an initial determination (Order No. 12) in Investigation No. 337-TA-941 granting Samsung's motion for summary determination that it satisfied the economic prong of the domestic industry requirement based on Samsung's significant investment in plant and equipment and labor and capital related to the manufacture of the Exynos 5430, Exynos 5433, Exynos 3470, and Exynos 4412 products at SAS in Austin, Texas. Exhibit 141 (Inv. No. 337-TA-941, Order No. 12 (Initial Determination)).

238. Consequently, an economic domestic industry exists in connection with the Samsung Domestic Industry Products as result of Samsung's significant and substantial investments within the United States in labor and capital, plant and equipment, and research, development and engineering. In particular, Samsung's significant expenditures incurred in connection with its manufacture of Samsung Domestic Industry Products in Texas constitute a significant and substantial investment supporting the existence of a domestic industry in protected articles that practice the Asserted Patents.

XII. RELIEF REQUESTED

239. WHEREFORE, by reason of the foregoing, Complainant 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 the Respondents' violations of Section 337 based on the design, manufacture, importation into the United States, the sale for importation into the United States, sale within the United States after importation, and instruction

of purchasers on the infringing use of any articles, and components thereof, that infringe one or more claims of one or more of the '428 Patent, the '439 Patent, the '935 Patent and the '945 Patent;

b. Schedule and conduct an evidentiary hearing on permanent relief pursuant to 19 U.S.C. § 1337(d) and (f) of the Tariff Act of 1930, as amended;

c. Issue a Limited Exclusion Order specifically directed to each named Respondent, pursuant to 19 U.S.C. § 1337(d), excluding from entry into the United States any articles that infringe one or more of the '428 Patent, the '439 Patent, the '935 Patent and the '945 Patent;

d. Issue permanent cease and desist orders pursuant to 19 U.S.C. § 1337(f) prohibiting each domestic Respondent from, among other things, importing, selling, offering for sale (including via the Internet or electronic mail), advertising (including via the Internet or electronic mail), or distributing articles that infringe one or more claims of one or more of the '428 Patent, the '439 Patent, the '935 Patent, and the '945 Patent; and

e. Impose a bond upon Respondents who continue to import infringing articles during the 60-day-Presidential review period per 19 U.S.C. § 1337(j); and 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: December 28, 2015

Respectfully submitted,



Michael T. Renaud
James M. Wodarski
Michael J. McNamara
Andrew H. DeVoogd
Adam S. Rizk
MINTZ LEVIN COHN FERRIS
GLOVSKY AND POPEO PC
One Financial Center
Boston, MA 02111
Tel: 617-542-6000
Fax: 617-542-2241
www.mintz.com

Aarti Shah
MINTZ LEVIN COHN FERRIS
GLOVSKY AND POPEO PC
701 Pennsylvania Avenue N.W., Suite 900
Washington, DC 20004
Tel: 202-434-7300
Fax: 202-434-7400
www.mintz.com

*Counsel to Complainant
Advanced Silicon Technologies LLC*