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9 *Counsel for Plaintiff*
VLSI TECHNOLOGY LLC

11 UNITED STATES DISTRICT COURT
12 NORTHERN DISTRICT OF CALIFORNIA
13 SAN FRANCISCO DIVISION

14
15 VLSI TECHNOLOGY LLC.

16 Plaintiff,

17 v.

18 INTEL CORPORATION,

19 Defendant.

CASE NO.

**VLSI TECHNOLOGY LLC'S
COMPLAINT FOR PATENT
INFRINGEMENT**

DEMAND FOR JURY TRIAL

1 1. Plaintiff, VLSI Technology LLC. (“VLSI”), for its Complaint against Defendant,
2 Intel Corporation (“Intel”) alleges:

3 **THE PARTIES**

4 2. Plaintiff VLSI is a is a Delaware limited liability company duly organized and
5 existing under the laws of the State of Delaware. The address of the registered office of VLSI is
6 Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801. The name of VLSI’s
7 registered agent at that address is The Corporation Trust Company.

8 3. On information and belief, Defendant Intel is a corporation duly organized and
9 existing under the laws of the State of Delaware, having its principal place of business at 2200
10 Mission College Blvd., Santa Clara, CA 95054.

11 **JURISDICTION**

12 4. This is an action arising under the patent laws of the United States. Accordingly,
13 this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

14 5. This Court has personal jurisdiction over Intel because Intel has its principal place
15 of business in Santa Clara, California. Intel manufactures microprocessors and other electronic
16 devices that are and have been used, offered for sale, sold, and purchased in the Northern District
17 of California. Jurisdiction over Intel in this matter is also proper because Intel has voluntarily
18 submitted itself to the jurisdiction of the courts by commencing litigations within the Northern
19 District of California and by registering with the California Secretary of State.

20 **VENUE**

21 6. Venue is proper in this judicial district pursuant to 28 U.S.C. §§1391(b), (c), (d)
22 and 1400(b) because (1) Intel has committed, and continues to commit, acts of infringement in this
23 District, including providing microprocessors and other electronic devices that are used, offered
24 for sale, sold, and have been purchased in the State of California, including Northern District of
25 California; and (2) Intel has regular and established places of business in the Northern District of
26 California at its principal place of business at 2200 Mission College Blvd., Santa Clara, CA
27 95054.

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INTRADISTRICT ASSIGNMENT

7. Pursuant to Local Rule 3-2(c), Intellectual Property Actions are assigned on a district-wide basis.

FACTUAL ALLEGATIONS

8. Intel is one of the world’s largest manufacturers of microprocessors for server, desktop, and mobile applications. For example, Intel’s Core families of microprocessors (named i3, i5, and i7) are widely used in desktop and notebook computers made by Dell, HP, Acer, Lenovo, and others. Intel’s Xeon families of microprocessors (named E3, E5, and E7) are advanced performance microprocessors used in server, network, and storage applications. Intel’s Atom microprocessors are used in mobile phones and tablets. Intel’s sales revenues were nearly \$60 billion in 2016. Most of that revenue was attributable to the sale of microprocessors. Intel also manufactures other electronic devices. For example, Intel is a major supplier of Field Programmable Gate Arrays (FPGAs).

9. VLSI owns a portfolio of over 160 patents issued in the U.S. and abroad covering a wide variety of technologies, including integrated circuit technology. The patents asserted in this lawsuit cover critical aspects of modern semiconductor and microprocessor technology used by all Intel microprocessors. Some of the patents cover key operational aspects of the Intel microprocessors, such as ways to operate a microprocessor to maximize performance or save power and battery life. Other patents cover novel microprocessor circuits that allow, for example, faster operation of memory and operation at lower power. Others allow the manufacture of smaller transistors or other features, or make the features more robust. Indeed, Intel’s use of VLSI’s patents is critical in making commercially successful products.

10. United States Patent No. 7,268,588 (“the ’588 Patent”), entitled “Cascadable Level Shifter Cell” was duly and lawfully issued September 11, 2007. VLSI is the owner of all rights, title, and interest in the ’588 Patent. A true and correct copy of the ’588 Patent is attached hereto as Exhibit 1.

1 11. United States Patent No. 7,675,806 (“the ’806 Patent”), entitled “Low voltage
2 memory device and method thereof” was duly and lawfully issued March 9, 2010. VLSI is the
3 owner of all rights, title, and interest in the ’806 Patent. A true and correct copy of the ’806 Patent
4 is attached hereto as Exhibit 2.

5 12. United States Patent No. 7,706,207 (“the ’207 Patent”), entitled “Memory with
6 Level Shifting Word Line Driver and Method Thereof” was duly and lawfully issued April 27,
7 2010. VLSI is the owner of all rights, title, and interest in the ’207 Patent. A true and correct
8 copy of the ’207 Patent is attached hereto as Exhibit 3.

9 13. United States Patent No. 7,709,303 (“the ’303 Patent”), entitled “Process for
10 Forming an Electronic Device Including a Fin-Type Structure” was duly and lawfully issued May
11 4, 2010. VLSI is the owner of all rights, title, and interest in the ’303 Patent. A true and correct
12 copy of the ’303 Patent is attached hereto as Exhibit 4.

13 14. United States Patent No. 8,004,922 (“the ’922 Patent”), entitled “Power Island
14 With Independent Power Characteristics for Memory and Logic” was duly and lawfully issued
15 August 23, 2011. VLSI is the owner of all rights, title, and interest in the ’922 Patent. A true and
16 correct copy of the ’922 Patent is attached hereto as Exhibit 5.

17 15. United States Patent No. 8,020,014 (“the ’014 Patent”), entitled “Method for Power
18 Reduction and a Device Having Power Reduction Capabilities” was duly and lawfully issued
19 September 13, 2011. VLSI is the owner of all rights, title, and interest in the ’014 Patent. A true
20 and correct copy of the ’014 Patent is attached hereto as Exhibit 6.

21 16. United States Patent No. 8,268,672 (“the ’672 Patent”), entitled “Method of
22 Assembly and Assembly Thus Made” was duly and lawfully issued September 18, 2012. VLSI is
23 the owner of all rights, title, and interest in the ’672 Patent. A true and correct copy of the ’672
24 Patent is attached hereto as Exhibit 7.

25 17. United States Patent No. 8,566,836 (“the ’836 Patent”), entitled “Multi-Core
26 System on Chip” was duly and lawfully issued October 22, 2013. VLSI is the owner of all rights,
27

1 title, and interest in the '836 Patent. A true and correct copy of the '836 Patent is attached hereto
2 as Exhibit 8.

3 **FIRST COUNT**

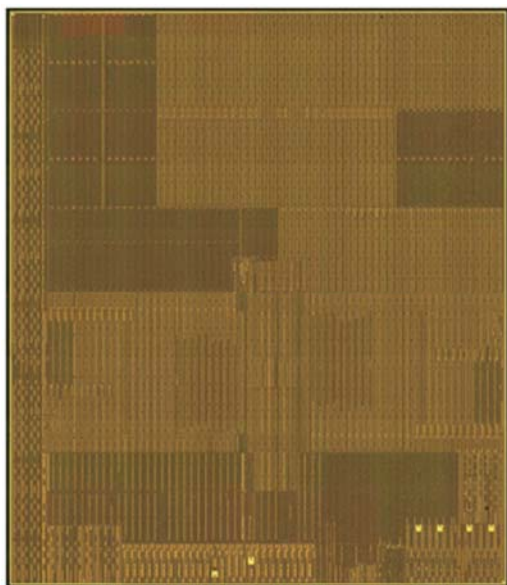
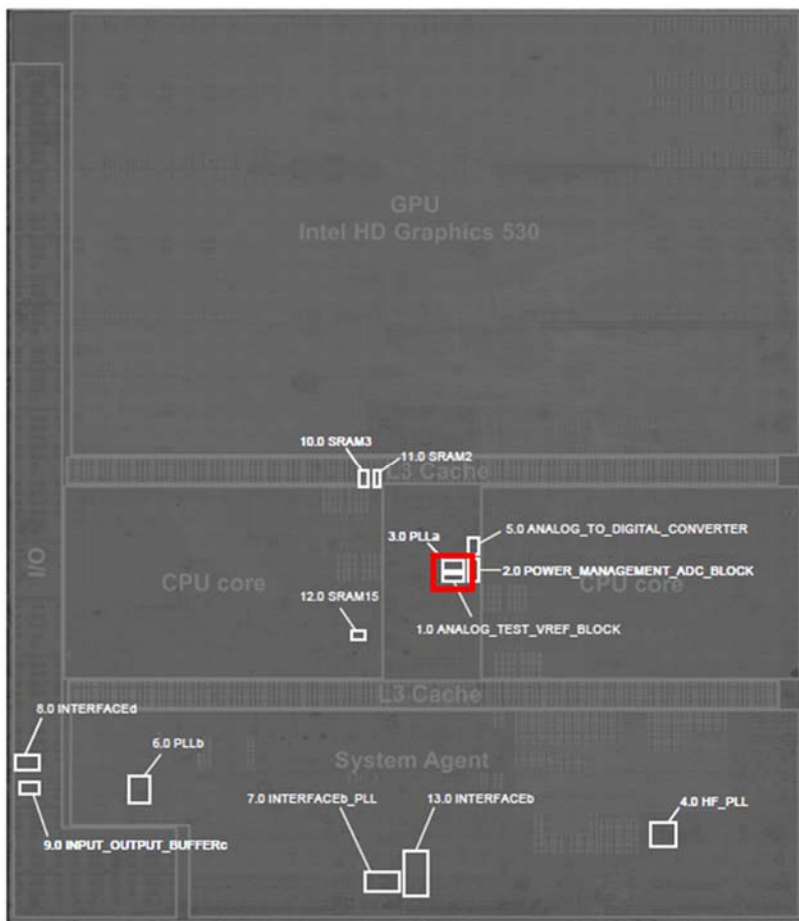
4 **(Infringement of U.S. Patent No. 7,268,588)**

5 18. U.S. Patent No. 7,268,588, entitled "Cascadable Level Shifter Cell," was filed on
6 June 29, 2005. The inventors of the '588 Patent are Hector Sanchez, Carlos A. Greaves, Jim P.
7 Nissen, and Xinghai Tang. A true and correct copy of the '588 Patent is attached hereto as Exhibit
8 1. The '588 Patent is directed to novel circuitry solutions for shifting between levels of different
9 voltage with improved noise immunity.

10 19. Intel makes, uses, sells, offers to sell, and/or imports Intel Core i3, i5, and i7
11 microprocessors; Xeon E3, E5, and E7 microprocessors; Atom microprocessors, and other Intel
12 microprocessors that incorporate the infringing features described below (collectively, "the '588
13 Accused Products"), including but not limited to the Intel i3-6300 Core Processors. The '588
14 Accused Products infringe one or more of the claims of the '588 Patent, including but not limited
15 to claim 1.

16 20. To the extent the preamble of claim 1 of the '588 Patent is limiting, the '588
17 Accused Products comprise a level shifter circuit. For example, the '588 Accused Products
18 contain multiple level shifter circuits, including at least the level shifter circuit located in
19 components (red) of the Intel i3-6300 Core Processors (pictured below in an excerpt from a
20 reverse engineering report). This level shifter circuit is part of the integrated circuitry for the Intel
21 i3-6300 Processors. Each of the '588 Accused Products include level shifter circuits in the same
22 or similar infringing manner as the Intel i3-6300 Core Processors as described below (collectively
23 "Accused Level Shifter Circuits").

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1 21. The '588 Accused Products comprise a first circuit, responsive to an input signal,
2 that switches first and second nodes to opposite states within a first voltage range between first
3 and second supply voltages. For example, the Accused Level Shifting Circuits found in the Intel
4 i3-6300 Core Processors include a first circuit which is made up of several metal oxide
5 semiconductor (MOS) transistors and various electrical connections. The first circuit has two
6 inputs that are connected to two supply voltages and two outputs (the first and second nodes). The
7 MOS transistors in the first circuit act as inverters and switch the first and second nodes (i.e., the
8 two outputs of the first circuit) to opposite states within a first voltage range defined by first and
9 second supply voltages (i.e., the voltages applied to the two inputs).

10 22. The '588 Accused Products comprise a protection layer which couples said first
11 and second nodes to third and fourth nodes via first and second isolation paths, respectively,
12 wherein said first and second isolation paths keep said first and second nodes within said first
13 voltage range and keep said third and fourth nodes within a second voltage range. For example,
14 the Accused Level Shifting Circuits found in the Intel i3-6300 Core Processors include at least two
15 isolation paths. These isolation paths each comprise a group of MOS transistors, and together,
16 they make up the protection layer. The first and second nodes are inputs to a second circuit
17 (discussed below), and the third and fourth nodes are outputs from the second circuit. The third
18 and fourth nodes operate within a different voltage range from the first and second nodes. The
19 protection layer isolates the first voltage range (the voltage between the first and second nodes)
20 from the second voltage range (the voltage between the third and fourth nodes) and keeps them
21 within their respective voltage ranges. The first and second nodes are coupled to the third and
22 fourth nodes by means of the protection layer of MOS transistors.

23 23. The '588 Accused Products comprise a second circuit that switches said third and
24 fourth nodes to opposite states within said second voltage range between third and fourth supply
25 voltages in response to switching of said first and second nodes. For example, the Accused Level
26 Shifting Circuits found in the Intel i3-6300 Core Processors include a second circuit, which
27 includes groups of MOS transistors that act as inverter circuits that switch the third and fourth

1 nodes (the outputs of the second circuit) to opposite states in response to the behavior of the first
2 circuit, which as described previously, involves switching the states of first and second nodes in
3 response to an input signal.

4 24. The '588 Accused Products' second circuit is comprised of a first inverter having
5 an input coupled to said fourth node, and output coupled to said third node and supply inputs
6 coupled between said third and fourth supply voltages. For example, the Accused Level Shifting
7 Circuits found in the Intel i3-6300 Core Processors have at least two inverters made of groups of
8 MOS transistors. These two inverters are connected as required by claim 1: one of the inverters
9 (the first inverter) has an input coupled to the fourth node, an output coupled to the third node, and
10 supply inputs coupled between the third and fourth node.

11 25. The '588 Accused Products' second circuit is further comprised of a second
12 inverter having an input coupled to said third node, an output coupled to said fourth node and
13 supply inputs coupled between said third and fourth supply voltages. As discussed above, the
14 Accused Level Shifting Circuits found in the Intel i3-6300 Core Processors include a second
15 inverter made up of a group of MOS transistors that are connected as required by the claim: one
16 input is coupled to the third node; one output is coupled to the fourth node; and supply inputs are
17 coupled between third and fourth supply voltages.

18 26. By making, using, testing, offering for sale, selling, and/or importing integrated
19 circuits, including but not limited to the '588 Accused Products, Intel has injured VLSI and is
20 liable to VLSI for directly infringing one or more claims of the '588 Patent, including at least
21 claim 1, pursuant to 35 U.S.C. § 271(a).

22 27. Intel also infringes the '588 Patent under 35 U.S.C. § 271(b), (c), (f)(1), (f)(2), and
23 (g).

24 28. Intel has been aware of the '588 Patent and that it infringes the '588 Patent since at
25 least May 30, 2014. On May 30, 2014, VLSI's predecessor-in-interest to the '588 Patent,
26 Freescale Semiconductor, Inc., provided Intel with a detailed claim chart demonstrating
27 infringement by Intel.

1 29. Intel intended to induce patent infringement by third-party original equipment
2 manufacturers (OEMs), original design manufacturers (ODMs), customers, and users of the '588
3 Accused Products and had knowledge that the inducing acts would cause infringement or were
4 willfully blind to the possibility that their inducing acts would cause infringement. Intel has sold
5 and continues to sell the Accused Products to OEMs making OEM products (e.g., computers,
6 servers, laptops, tablets, etc.), for example, Dell, HP, Acer, Lenovo, and others, knowing and with
7 the specific intent that the Accused Products will be included in the OEM products and sold to
8 customers in the United States in violation of U.S. patent law, and/or to original design
9 manufacturers (ODMs), knowing and with the specific intent that the Accused Products will
10 ultimately be included in OEM products and sold to customers in the United States. Indeed,
11 Intel's "Intel Inside" campaign has informed customers through advertising and stickers on the
12 OEM products themselves that the products contain Accused Products. Intel also knows that
13 many such OEM products that contain the Accused Products are made outside the United States
14 and are imported into the United States in violation of U.S. patent law. Intel also knows that U.S.
15 customers of the OEMs use the OEM products containing the Accused Products in the United
16 States in violation of U.S. patent law.

17 30. Intel performed acts that constitute inducement of infringement, and would cause
18 actual infringement, with the knowledge of the '588 Patent. For example, Intel has provided and
19 continues to provide the '588 Accused Products to OEMs (and/or to ODMs) which incorporate the
20 '588 Accused Products into products which infringe the '588 Patent and are made, used, sold,
21 offers to sell, and/or imported in the United States of America. Intel also provides OEMs (and/or
22 ODMs) with documentation regarding the Accused Products, including data sheets, which provide
23 information on installing, using, and configuring the Accused Products in the OEM products.
24 Intel sells the Accused Products to OEMs (or to ODMs who make products for OEMs) and
25 provides such documentation with the knowledge that the OEMs (or ODMs) will install and
26 configure the Accused Products as described and that end customers of the OEMs will use the
27 Accused Products in the manner expected by Intel and as set out in the documentation, and Intel

1 knows that using the Accused Products in this way will constitute infringement of the '588 Patent.
2 Intel further advertises the '588 Accused Products directly to the end-users of the infringing
3 products made by the OEMs, further inducing the end-users to infringe the '588 Patent by buying
4 and using infringing products containing the '588 Accused Products. Accordingly, Intel has
5 induced and continues to induce end users of the '588 Accused Products to use the products in
6 their ordinary and customary way to infringe the '588 Patent, knowing that such use constitutes
7 infringement of the '588 Patent.

8 31. Intel contributes to the infringement of the '588 Patent in violation of 35 U.S.C.
9 § 271(c). As stated above, Intel was aware of the '588 Patent at least as of May 30, 2014, when
10 Intel was provided with a claim chart demonstrating infringement. Intel thus offers to sell and
11 sells within the United States the '588 Accused Products knowing that those products constitute a
12 material part of the claimed invention because Intel incorporates the infringing level shifter circuit
13 described above into the Accused Products. Intel knows that the Accused Products are especially
14 made or especially adapted for use in infringing the '588 Patent because the Accused Products all
15 contain the infringing level shifter circuit. Furthermore, because the '588 Accused Products
16 contain the infringing level shifter circuits, the Accused Products are not a staple article or
17 commodity of commerce suitable for substantial non-infringing use. In addition, Intel offers to
18 sell and sells the '588 Accused Products to OEMs or ODMs who then incorporate the '588
19 Accused Products into infringing products which are used, sold, offered for sale, and/or imported
20 in the United States in an infringing manner. Accordingly, Intel is liable as a contributory
21 infringer.

22 32. To the extent Intel does not meet all of the limitations of the '588 Patent by making
23 the '588 Accused Products in the United States, Intel infringes under 35 U.S.C. § 271(f)(1) and
24 (f)(2) by supplying from the United States a substantial portion of the components of the '588
25 Accused Products (for example, structures or components contained in semiconductor wafers or
26 dice or the like), and actively induces the combination of components outside the United States in
27 a manner that would infringe the '588 Patent (for example, by packaging or assembly, or by

1 incorporation into desk-top computers, laptops, servers, tablets, or the like by ODMs or
2 OEMs). Intel further supplies from the United States components which are especially made and
3 especially adapted for use in practicing the '588 Patent, and not staple articles or a commodity of
4 commerce suitable for substantial non-infringing use (for example, structures or components
5 contained in semiconductor wafers or dice or the like). Intel knows the components are especially
6 made and especially adapted to be combined outside of the United States in a manner that would
7 infringe the '588 Patent (for example, by packaging or assembly, or by incorporation into desk-top
8 computers, laptops, servers, tablets, or the like by ODMs or OEMs). Based on these facts and the
9 facts set forth in the paragraphs above, Intel infringes the '588 Patent under 35 U.S.C. § 271(f)(1)
10 and (f)(2).

11 33. Intel infringes under 35 U.S.C. § 271(g) by importing into the United States and
12 selling and offering for sale within the United States Accused Products made outside the United
13 States by a process covered by one or more claims of the '588 Patent. Moreover, Intel knowingly
14 encourages and intends to induce infringement of the '588 Patent by selling the '588 Accused
15 Products made outside the United States by a process covered by the '588 Patent to ODMs and/or
16 OEMs with knowledge and the specific intention that ODMs and/or OEMs will incorporate the
17 '588 Accused Products into OEM products that the OEMs will import, offer for sale, sell, and/or
18 test in the United States in violation of 35 U.S.C. § 271(g). Intel is aware that ODMs and/or
19 OEMs routinely assemble OEM products (e.g., computers, servers, laptops, tablets, mobile
20 phones, etc.) containing the '588 Accused Products outside the United States with the specific
21 intention of importing, offering for sale, selling, and/or testing these OEM products in the United
22 States. Intel enables and specifically encourages ODMs and/or OEMs to manufacture OEM
23 products that contain the '588 Accused Products with knowledge that the OEM products will be
24 imported, offered for sale, sold, and/or tested in the United States.

25 34. As a result of Intel's infringement of the '588 Patent, VLSI has suffered monetary
26 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
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1 no event less than a reasonable royalty for the use made of the invention by Intel together with
2 interest and costs as fixed by the Court.

3 **SECOND COUNT**

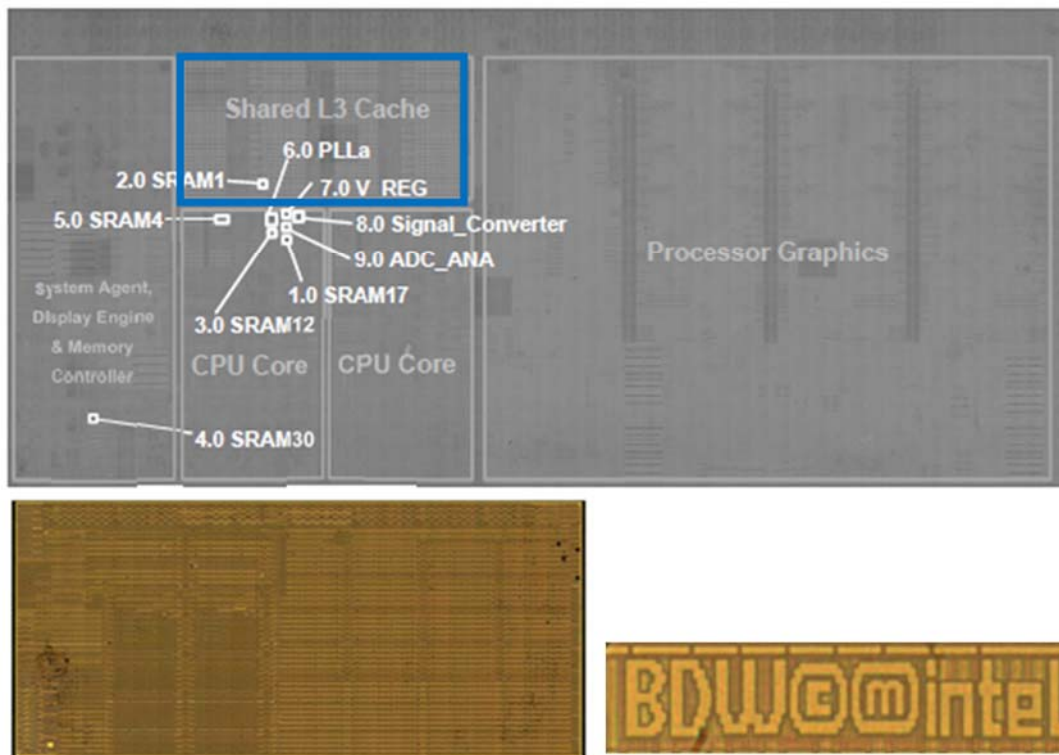
4 **(Infringement of U.S. Patent No. 7,675,806)**

5 35. U.S. Patent No. 7,675,806, entitled “Low voltage memory device and method
6 thereof,” was filed on May 17, 2006. The inventors of the ’806 Patent are Bradford Hunter, David
7 Burnett, Troy Cooper, Prashant Kenkare, Ravindraj Ramaraju, Andrew Russell, Shayan Zhang,
8 and Michael Snyder. A true and correct copy of the ’806 Patent is attached hereto as Exhibit 2.
9 The ’806 Patent is directed to a novel technique of reducing power consumption when operating
10 two different memories with different topologies and different minimum operating voltages.

11 36. Intel makes, uses, sells, offers to sell, and/or imports Intel Core i3, i5, and i7
12 microprocessors; Xeon E3, E5, and E7 microprocessors; Atom microprocessors; and other Intel
13 microprocessors that incorporate the infringing features described below (collectively, “the ’806
14 Accused Products”), including but not limited to the Intel i3-5010 Core Processors. The ’806
15 Accused Products infringe one or more claims of the ’806 Patent, including but not limited to
16 claim 11 of the ’806 Patent.

17 37. To the extent the preamble of claim 11 of the ’806 Patent is limiting, the ’806
18 Accused Products are devices.

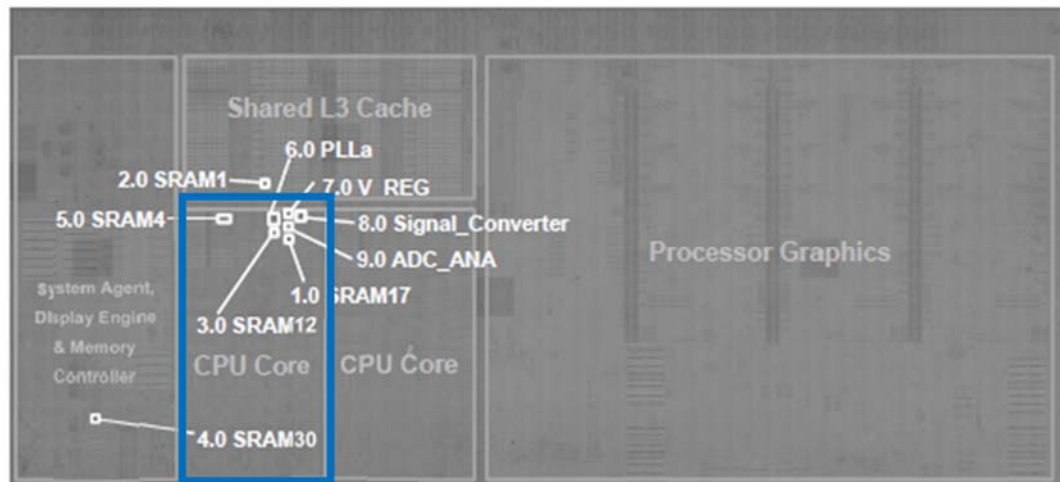
1 38. The '806 Accused Products contain a first memory having a first memory cell
 2 topology with a first minimum operating voltage and a first arrangement of transistors. For
 3 example, the Intel i3-5010 Processors include the cache memory shown below (pictured below in
 4 blue in an excerpt from a reverse engineering report). Each of the '806 Accused Products include
 5 a first memory implemented in the same or similar infringing manner as the Intel i3-5010 Core
 6 Processors as described below. The memory cells in the first memory are six-transistor SRAM
 7 memory cells.



39. The '806 Accused Products contain a second memory having a second memory cell
 topology with a second minimum operating voltage and a second arrangement of transistors
 different from the first arrangement of transistors. For example, the Intel i3-5010 Processors
 include the cache memory shown below in red (in an excerpt from a reverse engineering report).
 Each of the '806 Accused Products include a second memory implemented in the same or similar
 infringing manner as the Intel i3-5010 Core Processors. The memory cells in the second memory
 are eight-transistor SRAM memory cells. This arrangement of eight-transistor memory cells is
 different from the six-transistor cells of the first memory.

1 40. The second memory in the '806 Accused Products is configured to store status
 2 information indicative of the status of data stored in the first memory. For example, the Intel i3-
 3 5010 Core Processors implement a cache control protocol which includes storing status
 4 information in the second memory regarding the status of data stored in the first memory. *See,*
 5 *e.g.*, "Intel 64 and IA-32 Architectures Software Developer's Manual," Volume 3A, page 11-9.

6 41. The '806 Accused Products comprise a processing core located at the integrated
 7 circuit. For example, the Intel i3-5010 Core Processors includes at least one processing core
 8 (blue). Each of the '806 Accused Products include a processing core located at the integrated
 9 circuit implemented in the same or similar infringing manner as the Intel i3-5010 Core Processors
 10 as described below.



19 42. The processing core in the '806 Accused Products is operable to access the first
 20 memory and the second memory in a first mode of operation, and to access the second memory
 21 but not the first memory when in a second mode of operation. For example, the Intel i3-5010
 22 Core Processors have a performance mode of operation when the processing core is operable to
 23 access both the first and second memories, and a reduced power mode of operation when the
 24 processing core is operable to only access the second memory. *See, e.g.*, "Intel 64 and IA-32
 25 Architectures Software Developer's Manual," Volume 3A, page 11-5, 11-7; "6th Generation Intel
 26 Processor Families for S-Platforms Datasheet, Volume 1 of 2," page 84.

1 43. The processing core in the '806 Accused Products is operable to access the status
2 information in the second mode of operation. For example, the Intel i3-5010 Core Processors
3 access the cache control protocol status information in the second mode of operation. One
4 example of an access to the status information in the second mode of operation is during a write-
5 back operation.

6 44. The processing core in the '806 Accused Products is operable to enter the first
7 mode of operation in response to the status information indicating data corresponding to the data
8 stored at the first memory has changed. For example, the Intel i3-5010 Core Processors may enter
9 the first mode of operation to write data to the first memory in response to status information
10 indicating that that the data corresponding to the data in the first memory has changed. One
11 example of entering the first mode of operation in response to the status information is during a
12 write-back operation to update the first memory.

13 45. By making, using, testing, offering for sale, selling, and/or importing integrated
14 circuits, including but not limited to the '806 Accused Products, Intel has injured VLSI and is
15 liable to VLSI for directly infringing one or more claims of the '806 Patent, including but not
16 limited to claim 11 pursuant to 35 U.S.C. § 271(a).

17 46. Intel also infringes the '806 Patent under 35 U.S.C. § 271(b), (c), (f)(1), and (f)(2).

18 47. Intel had had knowledge of the '806 Patent and of its infringement of the '806
19 Patent since at least the date of service of this Complaint or shortly thereafter.

20 48. Intel has intended to induce patent infringement by third-party original equipment
21 manufacturers (OEMs), customers and users of the '806 Accused Products and had knowledge
22 that the inducing acts would cause infringement or were willfully blind to the possibility that their
23 inducing acts would cause infringement. Intel has sold and continues to sell the Accused Products
24 to OEMs making OEM products (e.g., computers, servers, laptops, tablets, etc.), for example,
25 Dell, HP, Acer, Lenovo, and others, knowing that the Accused Products will be included in the
26 OEM products and sold to customers in the United States in violation of U.S. patent law, and/or to
27 original design manufacturers (ODMs), knowing that the Accused Products will ultimately be

1 included in OEM products and sold to customers in the United States. Indeed, Intel’s “Intel
2 Inside” campaign has informed customers through advertising and stickers on the OEM products
3 themselves that the products contain Accused Products. Intel also knows that many such OEM
4 products that contain the Accused Products are made outside the United States and are imported
5 into the United States in violation of U.S. patent law. Intel also knows that U.S. customers of the
6 OEMs use the OEM products containing the Accused Products in the United States in violation of
7 U.S. patent law.

8 49. Intel contributes to the infringement of the ’806 Patent in violation of 35 U.S.C.
9 § 271(c). As stated above, Intel was aware of the ’806 Patent at least as of the time of service of
10 this complaint. Intel thus offers to sell and sells within the United States the ’806 Accused
11 Products knowing that those products constitute a material part of the claimed invention because
12 Intel incorporates the infringing memory circuits described above into the Accused Products. Intel
13 knows that the Accused Products are especially made or especially adapted for use in infringing
14 the ’806 Patent because the Accused Products all contain the infringing memory circuits.
15 Furthermore, because the ’806 Accused Products contain the infringing memory circuits, the
16 Accused Products are not a staple article or commodity of commerce suitable for substantial non-
17 infringing use. In addition, Intel offers to sell and sells the ’806 Accused Products to computer
18 OEMs or ODMs who then incorporate the ’806 Accused Products into infringing products which
19 are used, sold, offered for sale, and/or imported in the United States in an infringing manner.
20 Accordingly, Intel is liable as a contributory infringer.

21 50. To the extent Intel does not meet all of the limitations of the ’806 Patent by making
22 the ’806 Accused Products in the United States, Intel supplies from the United States a substantial
23 portion of the components of the ’806 Accused Products (for example, structures or components
24 contained in semiconductor wafers or dice or the like), and actively induces the combination of
25 components outside the United States in a manner that would infringe the ’806 Patent (for
26 example, by packaging or assembly, or by incorporation into desk-top computers, laptops, servers,
27 tablets, or the like by ODMs or OEMs). Intel further supplies from the United States components

1 which are especially made and especially adapted for use in practicing the '806 Patent, and not
2 staple articles or a commodity of commerce suitable for substantial non-infringing use (for
3 example, structures or components contained in semiconductor wafers or dice or the like). Intel
4 knows the components are especially made and especially adapted to be combined outside of the
5 United States in a manner that would infringe the '806 Patent (for example, by packaging or
6 assembly, or by incorporation into desk-top computers, laptops, servers, tablets, or the like by
7 ODMs or OEMs). Based on these facts and the facts set forth in the paragraphs above, Intel
8 infringes the '806 Patent under 35 U.S.C. § 271(f)(1) and (f)(2).

9 51. As a result of Intel's infringement of the '806 Patent, VLSI has suffered monetary
10 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
11 no event less than a reasonable royalty for the use made of the invention by Intel together with
12 interest and costs as fixed by the Court.

13 THIRD COUNT

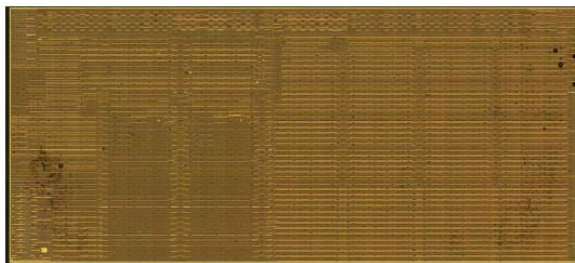
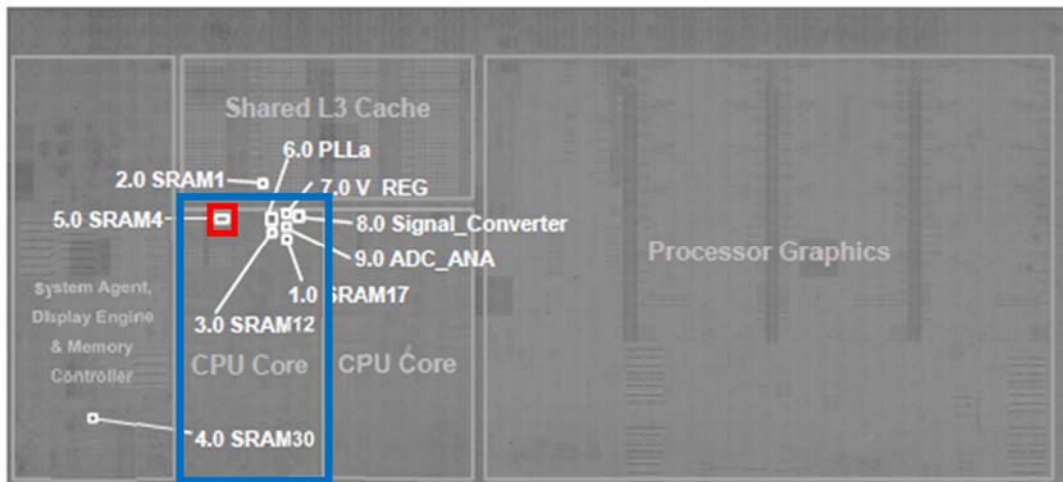
14 (Infringement of U.S. Patent No. 7,706,207)

15 52. U.S. Patent No. 7,706,207, entitled "Memory with Level Shifting Word Line
16 Driver and Method Thereof," was filed on September 12, 2008. The inventors of the '207 Patent
17 are Thomas W. Liston, Shahnaz P. Chowdhury-Nagle, and Perry H. Pelley, III. A true and correct
18 copy of the '207 Patent is attached hereto as Exhibit 3. The '207 Patent is directed to a novel
19 arrangement of voltage level shifters to implement different voltage domains in a memory that
20 decreases substrate area required, increases the speed of the circuitry, and does not impede the
21 performance of memory accesses.

22 53. Intel makes, uses, sells, offers to sell, and/or imports Intel Core i3, i5, and i7
23 microprocessors; Xeon E3, E5, and E7 microprocessors; Atom microprocessors; and other Intel
24 microprocessors that incorporate the infringing features described below (collectively, "the '207
25 Accused Products"), including but not limited to the Intel i3-5010 Core Processors. The '207
26 Accused Products infringe one or more claims of the '207 Patent, including but not limited to
27 claim 9 of the '207 Patent.

1 54. To the extent the preamble of claim 9 of the '207 Patent is limiting, the '207
 2 Accused Products comprise a memory. For example, the '207 Accused Products contain multiple
 3 arrays of cache memory, including at least the cache memory (red) located in a processor core
 4 (blue) of the Intel i3-5010 Core Processors (pictured below in an excerpt from a reverse
 5 engineering report). On information and belief this memory is part of the cache memory for the
 6 Intel i3-5010 Processors. Each of the '207 Accused Products include cache memory implemented
 7 in the same or similar infringing manner as the Intel i3-5010 Core Processors as described below
 8 (collectively "Accused Cache Memory").

9 55. The '207 Accused Products comprise a plurality of global word lines, the global
 10 word line driver circuitry having a plurality of outputs, each output coupled to a corresponding
 11 global word line of the plurality of global word lines. For example, the Accused Cache Memory
 12 found in the core of the Intel i3-5010 Core Processors includes a series of copper conductors
 13 which constitute global word lines. Each global word line is connected to multiple blocks of a
 14 group of interconnected transistors which constitutes local word line driver circuitry. Each global
 15



1 word line is also connected to a group of interconnected transistors which constitutes global word
2 line driver circuitry.

3 56. The '207 Accused Products comprise address decode circuitry having an output to
4 provide a predecode value. For example, the Accused Cache Memory of the Intel i3-5010 Core
5 Processors includes a set of invertor circuits and NAND gate circuits which constitute address
6 decode circuitry. The address decode circuitry provides a predecode value to multiple blocks of
7 word line driver circuitry.

8 57. The '207 Accused Products comprise a local bit cell array comprising a plurality of
9 local word lines. For example, the Accused Cache Memory of the Intel i3-5010 Core includes a
10 bit cell array connected to the plurality of local word lines. Each block of word line driver
11 circuitry is connected to at least one separate local bit cell array.

12 58. The '207 Accused Products comprise local word line driver circuitry having an
13 input coupled to the output of the address decode circuitry, and an input coupled to a
14 corresponding global word line of the plurality of global word lines. For example, Accused Cache
15 Memory of the Intel i3-5010 Core Processors have multiple blocks of word line driver circuitry.
16 Each of these blocks of word line driver circuitry has an input receiving the address predecode
17 value. Each of these blocks of word line driver circuitry also has an input to receive the global
18 word lines.

19 59. The '207 Accused Products comprise a plurality of outputs, each output coupled to
20 a corresponding local word line of the plurality of local word lines, wherein the local word line
21 driver circuitry comprises a plurality of voltage level shifters, each voltage level shifter associated
22 with a corresponding local word line of local bit cell array. For example, the Accused Cache
23 Memory of the Intel i3-5010 Core Processors include multiple blocks of word line driver circuitry
24 with outputs coupled to the local word lines and each local word line driver includes a set of
25 transistors which constitute a voltage level shifter, each voltage level shifter associated with a
26 local word line in the bit cell array. The voltage level shifters operate to shift the voltage of the
27 global word line signal to a different voltage to operate the local bit cell array.

1 60. The global word line driver circuitry and address decode circuitry in the '207
2 Accused Products are operable in a first voltage domain. For example, the global word line driver
3 circuitry and address decode circuitry in the Accused Cache Memory of the Intel i3-5010 Core
4 Processors operate at a particular voltage supplied by the same voltage supply.

5 61. The local bit cell array and local word line driver circuitry in the '207 Accused
6 Products are operable in a second voltage domain different than the first voltage domain. For
7 example, the Accused Cache Memory of the Intel i3-5010 Core Processors operate the local bit
8 cell array and local word line driver circuitry at a different voltage from the global word line driver
9 circuitry and address decode circuitry, with a different voltage supply than the global word line
10 driver circuitry and address decode circuitry.

11 62. By making, using, testing, offering for sale, selling, and/or importing integrated
12 circuits, including but not limited to the '207 Accused Products, Intel has injured VLSI and is
13 liable to VLSI for directly infringing one or more claims of the '207 Patent, including at least
14 claim 9, pursuant to 35 U.S.C. § 271(a).

15 63. Intel also indirectly infringes the '207 Patent by actively inducing and contributing
16 to infringement under 35 U.S.C. § 271(b), (c), (f)(1) and (f)(2)).

17 64. Intel had had knowledge of the '207 Patent and of its infringement of the '207
18 Patent since at least the date of service of this Complaint or shortly thereafter.

19 65. Intel intended to induce patent infringement by third-party original equipment
20 manufacturers (OEMs), customers, and users of the '207 Accused Products and had knowledge
21 that the inducing acts would cause infringement or were willfully blind to the possibility that their
22 inducing acts would cause infringement. Intel has sold and continues to sell the Accused Products
23 to OEMs making OEM products (e.g., computers, servers, laptops, tablets, etc.), for example,
24 Dell, HP, Acer, Lenovo, and others, knowing that the Accused Products will be included in the
25 OEM products and sold to customers in the United States in violation of U.S. patent law, and/or to
26 original design manufacturers (ODMs), knowing that the Accused Products will ultimately be
27 included in OEM products and sold to customers in the United States. Indeed, Intel's "Intel

1 Inside” campaign has informed customers through advertising and stickers on the OEM products
2 themselves that the products contain Accused Products. Intel also knows that many such OEM
3 products that contain the Accused Products are made outside the United States and are imported
4 into the United States in violation of U.S. patent law. Intel also knows that U.S. customers of the
5 OEMs use the OEM products containing the Accused Products in the United States in violation of
6 U.S. patent law.

7 66. Intel contributes to the infringement of the ’207 Patent in violation of 35 U.S.C.
8 § 271(c). As stated above, Intel was aware of the ’207 Patent at least as of the time of service of
9 this Complaint. Intel thus offers to sell and sells within the United States the ’207 Accused
10 Products knowing that those products constitute a material part of the claimed invention because
11 Intel incorporates the infringing Accused Cache Memory into the Accused Products. Intel knows
12 that the Accused Products are especially made or especially adapted for use in infringing the ’207
13 Patent because the Accused Products all contain the infringing Accused Cache Memory.
14 Furthermore, because the ’207 Accused Products contain the infringing Accused Cache Memory,
15 the Accused Products are not a staple article or commodity of commerce suitable for substantial
16 non-infringing use. In addition, Intel offers to sell and sells the ’207 Accused Products to OEMs
17 or ODMs who then incorporate the ’207 Accused Products into infringing products which are
18 used, sold, offered for sale, and/or imported in the United States in an infringing manner.
19 Accordingly, Intel is liable as a contributory infringer.

20 67. To the extent Intel does not meet all of the limitations of the ’207 Patent by making
21 the ’207 Accused Products in the United States, Intel infringes under 35 U.S.C. § 271(f)(1) and
22 (f)(2) by supplying from the United States a substantial portion of the components of the ’207
23 Accused Products (for example, structures or components contained in semiconductor wafers or
24 dice or the like), and actively induces the combination of components outside the United States in
25 a manner that would infringe the ’207 Patent (for example, by packaging or assembly, or by
26 incorporation into desk-top computers, laptops, servers, tablets, or the like by ODMs or
27 OEMs). Intel further supplies from the United States components which are especially made and

1 especially adapted for use in practicing the '207 Patent, and not staple articles or a commodity of
2 commerce suitable for substantial non-infringing use (for example, structures or components
3 contained in semiconductor wafers or dice or the like). Intel knows the components are especially
4 made and especially adapted to be combined outside of the United States in a manner that would
5 infringe the '207 Patent (for example, by packaging or assembly, or by incorporation into desk-top
6 computers, laptops, servers, tablets, or the like by ODMs or OEMs). Based on these facts and the
7 facts set forth in the paragraphs above, Intel infringes the '207 Patent under 35 U.S.C. § 271(f)(1)
8 and (f)(2).

9 68. As a result of Intel's infringement of the '207 Patent, VLSI has suffered monetary
10 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
11 no event less than a reasonable royalty for the use made of the invention by Intel together with
12 interest and costs as fixed by the Court.

13 **FOURTH COUNT**

14 **(Infringement of the U.S. Patent No. 7,709,303)**

15 69. U.S. Patent No. 7,709,303, entitled "Process for Forming an Electronic Device
16 Including a Fin-Type Structure," was filed on January 10, 2006. The inventors of the '303 Patent
17 are James D. Burnett, Leo Matthew, and Byoung W. Min. A true and correct copy of the '303
18 Patent is attached hereto as Exhibit 4. The '303 Patent involves methods to form and alter the
19 height of a semiconductor fin structure to vary the characteristics of fin-type semiconductor
20 transistors.

21 70. Intel makes, uses, sells, offers to sell, and/or imports Intel Core i3, i5, and i7
22 microprocessors; Xeon E3, E5, and E7 microprocessors; Atom processors; and other Intel
23 microprocessors that are manufactured using the infringing process described below (collectively,
24 "the '303 Accused Products"), including but not limited to the Intel Xeon E3-1230 and Intel Core
25 i7-6700 Processors. The '303 Accused Products infringe one or more claims of the '303 Patent,
26 including but not limited to claim 1 of the '303 Patent.

1 71. To the extent the preamble of claim 1 of the '303 Patent is limiting, the '303
2 Accused Products are manufactured using a process for forming an electronic device. For
3 example, the Intel Core i7-6700 Processor is an electronic device manufactured through a series of
4 steps.

5 72. The '303 Accused Products are manufactured using a process that includes a step
6 to form a first semiconductor fin having a first height for a first fin-type transistor structure over a
7 support layer of a substrate. For example, the Intel Core i7-6700 Processor includes a plurality of
8 NMOS and PMOS fin-type transistors. The PMOS fin-type transistors have a semiconductor fin
9 structure that is formed over a support layer of substrate during manufacture. After the formation
10 step, the fin structure of the PMOS fin-type transistor has a first height.

11 73. The '303 Accused Products are manufactured using a process that removes a
12 portion of the first semiconductor fin to provide the first semiconductor fin with a second height,
13 smaller than the first height. For example, the Intel Core i7-6700 Processor a portion of a
14 semiconductor fin structure of a PMOS fin-type transistor is removed during manufacture. After
15 the portion of the fin structure is removed, it has a second height smaller than the first height. For
16 example, a portion of the semiconductor fin structure for a PMOS fin-type transistor is removed to
17 reduce the height of the semiconductor fin structure prior to the formation of a cap on the
18 semiconductor fin structure.

19 74. By manufacturing the '303 Accused Products in the United States Intel has injured
20 VLSI and is liable to VLSI for directly infringing one or more claims of the '303 Patent, including
21 but not limited to claim 1, pursuant to 35 U.S.C. § 271(a).

22 75. By manufacturing the '303 Accused Products outside the United States and
23 importing, offering for sale, selling, and/or testing the '303 Accused Products in the United States,
24 Intel has injured VLSI and is liable to VLSI for infringing one or more claims of the '303 Patent,
25 including at least claim 1 in violation of 35 U.S.C. § 271(g).

26 76. Intel also induces infringement of the '303 Patent contrary to 35 U.S.C. § 271(b).
27 For example, Intel induces infringement of the '303 Patent by selling '303 Accused Products

1 manufactured outside the United States to third-party original equipment manufacturers (OEMs)
2 (e.g., Dell, HP, Acer, Lenovo, etc.) and/or original design manufacturers (ODMs) that
3 manufacture products for OEMs outside the United States. ODMs and/or OEMs incorporate the
4 '303 Accused Products into OEM products (e.g., computers, servers, laptops, tablets, etc.) that
5 OEMs import, offer for sale, sell, and/or test in the United States in violation of 35 U.S.C. §
6 271(g).

7 77. Intel has been aware of the '303 Patent and that it infringes the '303 Patent since at
8 least May 30, 2014. On May 30, 2014, VLSI's predecessor-in-interest to the '303 Patent,
9 Freescale Semiconductor, Inc., provided Intel with a detailed claim chart notifying Intel of the
10 '303 Patent and documenting infringement of the '303 Patent by the Intel Xeon E3-1230V2
11 microprocessor.

12 78. Intel knowingly encourages and intends to induce infringement of the '303 Patent
13 by selling the '303 Accused Products to ODMs and/or OEMs with knowledge and the specific
14 intention that ODMs and/or OEMs will incorporate the '303 Accused Products into OEM products
15 that the OEMs will import, offer for sale, sell, and/or test in the United States in violation of 35
16 U.S.C. § 271(g). Intel is aware that ODMs and/or OEMs routinely assemble OEM products (e.g.,
17 computers, servers, laptops, tablets, etc.) containing the '303 Accused Products outside the United
18 States with the specific intention of importing, offering for sale, selling, and/or testing these OEM
19 products in the United States. Intel enables and specifically intends for ODMs and/or OEMs to
20 manufacture OEM products that contain the '303 Accused Products with knowledge that the OEM
21 products will be imported, offered for sale, sold, and/or tested in the United States, and will be
22 used by customers of the OEMs.

23 79. As a result of Intel's infringement of the '303 Patent, VLSI has suffered monetary
24 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
25 no event less than a reasonable royalty for the use made of the invention by Intel together with
26 interest and costs as fixed by the Court.

FIFTH COUNT

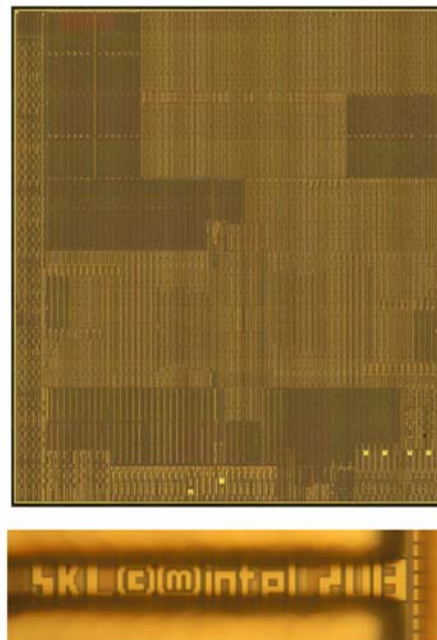
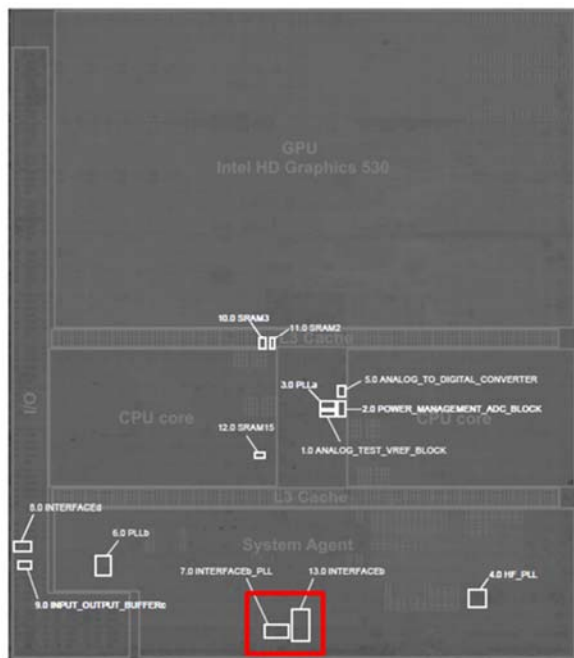
(Infringement of the U.S. Patent No. 8,004,922)

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3 80. U.S. Patent No. 8,004,922 (“the ’922 Patent”), entitled “Power Island with
4 Independent Power Characteristics for Memory and Logic,” was filed on June 5, 2009. The
5 inventors of the ’922 Patent are David R. Evoy, Peter Kapporth, and Pineda De Gyvez. A true and
6 correct copy of the ’922 Patent is attached hereto as Exhibit 5. The ’922 Patent involves altering
7 the power characteristics supplied to a hardware component (for example, memory) and scalable
8 logic portions of a hardware device to optimize the performance of the memory and scalable logic
9 components.

10 81. Intel makes, uses, sells, offers to sell, and/or imports Intel Core i3, i5, and i7
11 microprocessors; Xeon E3, E5, and E7 microprocessors; Atom microprocessors; and other Intel
12 microprocessors that incorporate the infringing features described below (collectively, “the ’922
13 Accused Products”), including but not limited to the Intel i3-6300 Core Processors. The ’922
14 Accused Products infringe one or more claims of the ’922 Patent, including but not limited to
15 claim 1 of the ’922 Patent.

16 82. To the extent the preamble of claim 1 of the ’922 Patent is limiting, the ’922
17 Accused Products contain a power island for a system-on-a-chip (SoC). For example, Intel Core
18 i3-6300 Processors are a system-on-a-chip that includes a power island comprising circuits labeled
19 Interface and Interface PLL segments (red) (pictured below in an excerpt from a reverse
20 engineering report).

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83. The '922 Accused Products include a first segment comprising a hardware device, the first segment to operate the hardware device at first power characteristics indicative of at least a first voltage. For example, the Interface PLL segment of the Intel Core i3-6300 Processor includes a hardware device (e.g., at least one memory element, such as a flip flop) that operates using a power supply (which we will call the first power supply) having a set of power characteristics (e.g., voltage).

84. The '922 Accused Products include a second segment comprising scalable logic, the second segment to operate the scalable logic at second power characteristics indicative of at least a second voltage, wherein the second power characteristics of the scalable logic are different from the first power characteristics of the hardware device. For example, the Interface segment of the Intel Core i3-6300 Processor includes scalable logic (e.g., control logic). The Interface segment supplies the scalable logic (e.g., control logic) with a second power supply that has different power characteristics (e.g., a different voltage) from the first power supply provided to the hardware device.

1 85. The '922 Accused Products include a supply line to receive an external supply
2 signal (VDD) and to direct the external supply signal to both the first segment and the second
3 segment, wherein the second segment is configured to change at least one power characteristic of
4 the external supply signal to operate the scalable logic according to the second power
5 characteristics. For example, the Interface and Interface PLL segments of the Intel Core i3-6300
6 Processor receive the first power supply from an external supply line. The first supply signal is
7 provided to both the Interface and Interface PLL segments. The Interface segment is configured to
8 alter the power characteristics of the first power supply and provide this altered power supply
9 signal (e.g., the second supply) to the scalable logic.
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11 86. The '922 Accused Products include a supply power converter coupled between the
12 supply line and the scalable logic, wherein the supply power converter is configured to convert a
13 supply voltage of the external supply signal from the first power characteristics to the second
14 power characteristics. For example, the Interface segment of the Intel Core i3-6300 Processor
15 includes a power switch coupled between the first power supply line and the scalable logic. The
16 power switch converts the first power supply signal to a second power supply signal having
17 different power characteristics (e.g., a different voltage).
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19 87. The '922 Accused Products include a conversion controller coupled to the supply
20 power converter, wherein the conversion controller is configured to control the supply power
21 converter to change the external supply signal according to the second power characteristics of the
22 scalable logic. For example, the Intel Core i3-6300 Processors include a conversion controller
23 coupled to the power switch of the Interface segment (e.g., a six-bit bus). The conversion
24 controller is operable to control the power switch by modifying a control signal supplied to the
25 power switch. The power switch is operable to modify the power characteristics of the second
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1 power supply signal output from the power switch based on the control signal received from the
2 conversion controller.

3 88. By making, importing, offering to sell, selling, and/or testing the '922 Accused
4 Products in the United States Intel has injured VLSI and is liable to VLSI for directly infringing
5 one or more claims of the '922 Patent, including at least claims 1 and 17, pursuant to 35 U.S.C. §
6 271(a).

7 89. Intel also infringes the '922 Patent under 35 U.S.C. § 271(b), (c), (f)(1), (f)(2), and
8 (g).

9 90. By manufacturing the '922 Accused Products outside the United States and
10 importing, offering for sale, selling, and/or testing the '922 Accused Products in the United States
11 Intel has injured VLSI and is liable to VLSI for directly infringing one or more claims of the '922
12 Patent pursuant to 35 U.S.C. §271(g).

13 91. Intel also induces infringement of the '922 Patent contrary to 35 U.S.C. § 271(b).
14 For example, Intel induces infringement of the '922 Patent by selling '922 Accused Products
15 manufactured outside the United States to third-party original equipment manufacturers (OEMs)
16 (e.g., Dell, HP, Acer, Lenovo, etc.) and/or original design manufacturers (ODMs) that
17 manufacture products for OEMs outside the United States. ODMs and/or OEMs incorporate the
18 '922 Accused Products into OEM products (e.g., computers, servers, laptops, tablets, etc.) that
19 OEMs import, offer for sale, sell, and/or test in the United States in violation of 35 U.S.C.
20 §§ 271(a) and 271(g).

21 92. Intel had had knowledge of the '922 Patent and of its infringement of the '922
22 Patent since at least the date of service of this Complaint or shortly thereafter.

23 93. Intel knowingly encourages and intends to induce infringement of the '922 Patent
24 by selling the '922 Accused Products outside the United States to ODMs and/or OEMs with
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1 knowledge and the specific intention that ODMs and/or OEMs will incorporate the '922 Accused
2 Products into OEM products that the OEMs will import, offer for sale, sell, and/or test in the
3 United States in violation of 35 U.S.C. §§ 271(a) and 271(g). Intel is aware that ODMs and/or
4 OEMs routinely assemble OEM products (e.g., computers, servers, laptops, tablets, etc.)
5 containing the '922 Accused Products outside the United States with the specific intention of
6 importing, offering for sale, selling, and/or testing these OEM products in the United States. Intel
7 enables and specifically encourages ODMs and/or OEMs to manufacture OEM products that
8 contain the '922 Accused Products with knowledge that the OEM products will be imported,
9 offered for sale, sold, and/or tested in the United States to increase sales of the '922 Accused
10 Products that are destined for the United States market. Intel also knows and specifically intends
11 that U.S. customers of the OEMs use the OEM computers containing the Accused Products in the
12 United States in violation of U.S. patent law.

14 94. Intel contributes to the infringement of the '922 Patent in violation of 35 U.S.C.
15 § 271(c). As stated above, Intel was aware of the '922 Patent and of its infringement at least as of
16 the time of service of this Complaint. Intel offers to sell and sells within the United States the
17 '922 Accused Products knowing that those products constitute a material part of the claimed
18 invention because Intel incorporates the infringing power island described above into the Accused
19 Products. Intel knows that the Accused Products are especially made or especially adapted for use
20 in infringing the '922 Patent because the Accused Products all contain the infringing power island.
21 Furthermore, because the '922 Accused Products contain the infringing power island, the Accused
22 Products are not a staple article or commodity of commerce suitable for substantial non-infringing
23 use. In addition, Intel offers to sell and sells the '922 Accused Products to OEMs or ODMs who
24 then incorporate the '922 Accused Products into infringing products which are used, sold, offered
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1 for sale, and/or imported in the United States in an infringing manner. Accordingly, Intel is liable
2 as a contributory infringer.

3 95. To the extent Intel does not meet all of the limitations of the '922 Patent by making
4 the '922 Accused Products in the United States, Intel supplies from the United States a substantial
5 portion of the components of the '922 Accused Products (for example, structures or components
6 contained in semiconductor wafers or dice or the like), and actively induces the combination of
7 components outside the United States in a manner that would infringe the '922 Patent (for
8 example, by packaging or assembly, or by incorporation into desk-top computers, laptops, servers,
9 tablets, or the like by ODMs or OEMs). Intel further supplies from the United States components
10 which are especially made and especially adapted for use in practicing the '922 Patent, and not
11 staple articles or a commodity of commerce suitable for substantial non-infringing use (for
12 example, structures or components contained in semiconductor wafers or dice or the like). Intel
13 knows the components are especially made and especially adapted to be combined outside of the
14 United States in a manner that would infringe the '922 Patent (for example, by packaging or
15 assembly, or by incorporation into desk-top computers, laptops, servers, tablets, or the like by
16 ODMs or OEMs). Based on these facts and the facts set forth in the paragraphs above, Intel
17 infringes the '922 Patent under 35 U.S.C. § 271(f)(1) and (f)(2).
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20 96. As a result of Intel's infringement of the '922 Patent, VLSI has suffered monetary
21 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
22 no event less than a reasonable royalty for the use made of the invention by Intel together with
23 interest and costs as fixed by the Court.
24

25 **SIXTH COUNT**

26 **(Infringement of U.S. Patent No. 8,020,014)**

27 97. U.S. Patent No. 8,020,014, entitled "Method for Power Reduction and a Device
28 Having Power Reduction Capabilities," was filed on May 11, 2005. The inventors of the '014

1 Patent are Michael Priel, Dan Kuzmin, Anton Rozen, and Leonid Smolyanski. VLSI is the owner
2 by assignment of the '014 Patent. A true and correct copy of the '014 Patent is attached hereto as
3 Exhibit 6. The present invention describes a method for power management and especially for
4 power reduction of a memory during a low power mode. This is achieved by determining whether
5 to power down the portion of the memory in response to a relationship between an estimated
6 power gain and an estimated power loss resulting from powering down that portion of the memory
7 during the low power mode.

8 98. Intel makes, uses, sells, offers to sell, and/or imports processors including Intel
9 Core i3, i5, and i7 microprocessors; Xeon E3, E5, and E7 microprocessors; Atom
10 microprocessors; and all other Intel microprocessors that incorporate the infringing features
11 (collectively, "the '014 Accused Products"). The '014 Accused Products infringe one or more
12 claims of the '014 Patent, including but not limited to claim 1 of the '014 Patent.

13 99. To the extent the preamble of claim 1 is limiting, the '014 Accused Products
14 provide power reduction.

15 100. The '014 Accused Products comprise features for selectively providing power to at
16 least a portion of a component of an integrated circuit during a low power mode. For example, the
17 '014 Accused Products operate in certain low power states called "package states," which
18 selectively provide power to at least a portion of a component of an integrated circuit during a low
19 power mode. (*See, e.g.*, 6th Generation Intel® Core™ Processor Datasheet for U/Y-Platforms,
20 Vol. 1, May 2016).

21 101. The '014 Accused Products comprise features for determining whether to power
22 down the at least portion of the component in response to a relationship between an estimated
23 power gain and an estimated power loss resulting from powering down the at least portion of the
24 component during the low power mode. For example, the '014 Accused Products have C-State
25 Auto-Demotion and cache shrinking features which determine whether to power down at least a
26 portion of the component based on, *inter alia*, the expected power savings of a lower power state
27 and the expected energy costs of frequent entry/exit into a lower power state (*i.e.*, in response to a

1 relationship between an estimated power gain and an estimated power loss resulting from
2 powering down the at least portion of the component during the low power mode).

3 102. By making, using, testing, offering for sale, selling, and/or importing integrated
4 circuits, including but not limited to the '014 Accused Products, Intel has injured VLSI and is
5 liable to VLSI for directly infringing one or more claims of the '014 Patent, including at least
6 claim 1 of the '014 Patent, pursuant to 35 U.S.C. § 271(a).

7 103. Intel also infringes the '014 Patent by under 35 U.S.C. § 271(b), (c), (f)(1) and
8 (f)(2)).

9 104. Intel has been aware of the '014 Patent and that it infringed the '014 Patent since
10 at least May 30, 2014 when VLSI's predecessor-in-interest Freescale Semiconductor, Inc.,
11 provided a detailed claim chart demonstrating infringement by Intel. Nevertheless, Intel has
12 continued to sell the '014 Accused Products with knowledge that they infringe or induce or
13 contribute to infringement of the '014 Patent.

14 105. Intel has intended to induce patent infringement by third-party original equipment
15 manufacturers (OEMs), customers and users of the '014 Accused Products and had knowledge
16 that the inducing acts would cause infringement or were willfully blind to the possibility that their
17 inducing acts would cause infringement. Intel has sold and continues to sell the Accused Products
18 to OEMs making OEM products (e.g., computers, servers, laptops, tablets, etc.), for example,
19 Dell, HP, Acer, Lenovo, and others, knowing and specifically intending that the Accused Products
20 will be included in the OEM products and sold to customers in the United States in violation of
21 U.S. patent law, and/or to original design manufacturers (ODMs), knowing and specifically
22 intending that the Accused Products will ultimately be included in OEM products and sold to
23 customers in the United States. Indeed, Intel's "Intel Inside" campaign has informed customers
24 through advertising and stickers on the OEM products themselves that the products contain
25 Accused Products. Intel also knows that many such OEM products that contain the Accused
26 Products are made outside the United States and are imported into the United States in violation of
27

1 U.S. patent law. Intel also knows that U.S. customers of the OEMs use the OEM products
2 containing the Accused Products in the United States in violation of U.S. patent law.

3 106. Intel performed acts that constitute inducement of infringement, and would cause
4 actual infringement, with the knowledge of the '014 Patent. For example, Intel has provided and
5 continues to provide the '014 Accused Products to OEMs or ODMs which incorporate the '014
6 Accused Products into products which infringe the '014 Patent and are made, used, sold, offers to
7 sell, and/or imported in the United States of America. Intel also provides OEMs or ODMs with
8 documentation regarding the Accused Products, including data sheets, which provide information
9 on installing, using, and configuring the Accused Products in the OEM computers. Intel sells the
10 Accused Products to OEMs or ODMs and provides such documentation with the knowledge and
11 the intent that the OEMs or ODMs will install and configure the Accused Products as described
12 and that end customers of the OEMs will use the Accused Products in the manner expected by
13 Intel and as set out in the documentation, and Intel knows that using the Accused Products in this
14 way will constitute infringement of the '014 Patent. Intel further advertises the '014 Accused
15 Products directly to the end-users of the infringing products made by the computer OEMs, further
16 inducing the end-users to infringe the '014 Patent by buying and using infringing products
17 containing the '014 Accused Products. Accordingly, Intel has induced and continues to induce
18 end users of the '014 Accused Products to use the products in their ordinary and customary way to
19 infringe the '014 Patent, knowing that such use constitutes infringement of the '014 Patent.

20 107. Intel contributes to the infringement of the '014 Patent in violation of 35 U.S.C.
21 § 271(c). As stated above, Intel was aware of the '014 Patent and of its infringement of the '014
22 Patent at least as of May 14, 2014. Intel offers to sell and sells within the United States the '014
23 Accused Products knowing that those products constitute a material part of the claimed invention
24 because the Accused Products use the infringing power reduction features described above. Intel
25 knows that the Accused Products are especially made or especially adapted for use in infringing
26 the '014 Patent because the Accused Products all use the infringing power reduction features.
27 Furthermore, because the '014 Accused Products use the infringing power reduction features when

1 operated by an end-user, the Accused Products are not a staple article or commodity of commerce
2 suitable for substantial non-infringing use. In addition, Intel offers to sell and sells the '014
3 Accused Products to OEMs or ODMs who then incorporate the '014 Accused Products into
4 infringing products which are used, sold, offered for sale, and/or imported in the United States in
5 an infringing manner. Accordingly, Intel is liable as a contributory infringer.

6 108. To the extent Intel does not meet all of the limitations of the '014 Patent by making
7 the '014 Accused Products in the United States, Intel supplies from the United States a substantial
8 portion of the components of the '014 Accused Products (for example, structures or components
9 contained in semiconductor wafers or dice or the like), and actively induces the combination of
10 components outside the United States in a manner that would infringe the '014 Patent (for
11 example, by packaging or assembly, or by incorporation into desk-top computers, laptops, servers,
12 tablets, or the like by ODMs or OEMs). Intel further supplies from the United States components
13 which are especially made and especially adapted for use in practicing the '014 Patent, and not
14 staple articles or a commodity of commerce suitable for substantial non-infringing use (for
15 example, structures or components contained in semiconductor wafers or dice or the like). Intel
16 knows the components are especially made and especially adapted to be combined outside of the
17 United States in a manner that would infringe the '014 Patent (for example, by packaging or
18 assembly, or by incorporation into desk-top computers, laptops, servers, tablets, or the like by
19 ODMs or OEMs). Based on these facts and the facts set forth in the paragraphs above, Intel
20 infringes the '014 Patent under 35 U.S.C. § 271(f)(1) and (f)(2).

21 109. As a result of Intel's infringement of the '014 Patent, VLSI has suffered monetary
22 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
23 no event less than a reasonable royalty for the use made of the invention by Intel together with
24 interest and costs as fixed by the Court.

1 **SEVENTH COUNT**

2 **(Infringement of U.S. Patent No. 8,268,672)**

3 110. U.S. Patent No. 8,268,672, entitled “Method of Assembly and Assembly Thus
4 Made” was filed on November 6, 2006. The inventors of the ’672 Patent are Nicolaas Johannes
5 Anthonius Van Veen and Hendrik Pieter Hochstenbach. A true and correct copy of the ’672
6 Patent is attached hereto as Exhibit 7.

7 111. The ’672 Patent describes an improved method and apparatus of electrically
8 connecting multiple semiconductor substrates together into a single packaged chip by using a thin
9 solder layer between the underbump metallization of the chips. This way of connecting the chips
10 has significant advantages over the prior art.

11 112. Intel makes, uses, sells, offers to sell, and/or imports Stratix 10 Field
12 Programmable Gate Arrays (FPGAs), other products that incorporate Embedded Multi-die
13 Interconnect Bridge (“EMIB”) technology, including FPGAs manufactured for third parties, and
14 other products that incorporate the infringing features described below (collectively, “the ’672
15 Accused Products”). The ’672 Accused Products infringe one or more claims of the ’672 Patent,
16 including but not limited to claim 9 of the ’672 Patent.

17 113. To the extent the preamble of claim 9 is limiting, the ’672 Accused Products
18 include an assembly of a first chip and a second chip, both of which comprise a semiconductor
19 substrate and a surface with bond pads that are exposed in apertures in a passivation layer, the
20 surfaces facing each other. For example, the Intel Stratix 10 includes a core fabric chip and an
21 EMIB chip. The core fabric and EMIB chips both include a semiconductor substrate with a surface
22 that has a passivation layer and bond pads that are accessible through the passivation layer. The
23 core fabric and EMIB chips are arranged so that the surfaces with bond pads face each other.

24 114. The ’672 Accused Products include a plurality of bond pads on the first chip being
25 electrically connected to corresponding bond pads at the second chip through a solder
26 interconnection. For example, the Intel Stratix 10 includes a core fabric chip and an EMIB chip.

1 Bond pads of the core fabric chip are electrically connected to corresponding bond pads of the
2 EMIB chip through a solder interconnection.

3 115. The '672 Accused Products include a solder interconnection that is a layer
4 sandwiched between a first underbump metallization and a second metallization, which layer has a
5 thickness that is smaller than that of the metallizations, and an intermetallic compound being
6 present at an interface of the layer and the second metallization. For example, the Intel Stratix 10
7 includes a solder interconnection layer sandwiched between a first underbump metallization of a
8 core fabric chip and a second metallization of an EMIB chip. The solder interconnection layer is
9 thinner than the metallizations. An intermetallic compound (e.g., a copper/tin compound) is
10 formed at the interface of the solder interconnection layer and the metallization of the EMIB chip.

11 116. By manufacturing, importing, offering to sell, selling, and/or testing the '672
12 Accused Products in the United States Intel has injured VLSI and is liable to VLSI for directly
13 infringing one or more claims of the '672 Patent, including but not limited to claim 9, pursuant to
14 35 U.S.C. § 271(a).

15 117. Intel also infringes the '672 Patent under 35 U.S.C. § 271(b), (c), (f)(1), (f)(2), and
16 (g).

17 118. By manufacturing the '672 Accused Products outside the United States and
18 importing, offering for sale, selling, and/or testing the '672 Accused Products in the United States,
19 Intel has injured VLSI and is liable to VLSI for directly infringing one or more claims of the '672
20 Patent, including but not limited to claim 9, pursuant to 35 U.S.C. § 271(g).

21 119. Intel also induces infringement of the '672 Patent contrary to 35 U.S.C. § 271(b).
22 For example, Intel induces infringement of the '672 Patent by selling '672 Accused Products
23 manufactured outside the United States to customers that import, offer for sale, sell, and/or test the
24 '672 Accused Products and/or customer products incorporating the '672 Accused Products in the
25 United States in violation of 35 U.S.C. §§ 271(a) and 271(g).

26 120. Intel had had knowledge of the '672 Patent and of its infringement of the '672
27 Patent since at least the date of service of this Complaint or shortly thereafter.

1 121. Intel knowingly encourages and intends to induce infringement of the '672 Patent
2 by selling the '672 Accused Products outside the United States to customers with knowledge and
3 the specific intention that customers will import, offer for sale, sell, and/or test the '672 Accused
4 Products and/or customer products incorporating the '672 Accused Products in the United States
5 in violation of 35 U.S.C. §§ 271(a) and 271(g). The United States is an important market for Intel,
6 and sales of the '672 Accused Products to customers that ultimately sell the '672 Accused
7 Products and/or customer products incorporating the '672 Accused Products in the United States
8 are a significant market for Intel. Intel knowingly enables and specifically encourages customers
9 to import, offer for sale, sell, and/or test the '672 Accused Products and/or customer products
10 incorporating the '672 Accused Products in the United States to increase sales of the '672 Accused
11 Products that are destined for the United States market.

12 122. Intel contributes to the infringement of the '672 Patent in violation of 35 U.S.C.
13 § 271(c). As stated above, Intel was aware of the '672 Patent and of its infringement at least as of
14 the time of service of this Complaint. Intel offers to sell and sells within the United States the
15 '672 Accused Products knowing that those products constitute a material part of the claimed
16 invention because Intel incorporates the infringing assembly of chips described above into the
17 Accused Products. Intel knows that the Accused Products are especially made or especially
18 adapted for use in infringing the '672 Patent because the Accused Products all contain the
19 infringing assembly of chips. Furthermore, because the '672 Accused Products contain the
20 infringing assembly of chips, the Accused Products are not a staple article or commodity of
21 commerce suitable for substantial non-infringing use. In addition, Intel offers to sell and sells the
22 '672 Accused Products to OEMs or ODMs who then incorporate the '672 Accused Products into
23 infringing products which are used, sold, offered for sale, and/or imported in the United States in
24 an infringing manner. Accordingly, Intel is liable as a contributory infringer.

25 123. Intel infringes 35 U.S.C. § 271(f)(1) and (f)(2) by supplying from the United States
26 components which are combined outside the United States to infringe the '672 Patent (in
27 combination with the facts set forth above). To the extent Intel does not meet all of the limitations

1 of the '672 Patent by making the '672 Accused Products in the United States, Intel supplies from
2 the United States a substantial portion of the components of the '672 Accused Products (for
3 example, structures or components contained in semiconductor wafers or dice or the like), and
4 actively induces the combination of components outside the United States in a manner that would
5 infringe the '672 Patent (for example, by packaging or assembly, or by incorporation into desk-top
6 computers, laptops, servers, tablets, or the like by ODMs or OEMs). Intel further supplies from
7 the United States components which are especially made and especially adapted for use in
8 practicing the '672 Patent, and not staple articles or a commodity of commerce suitable for
9 substantial non-infringing use (for example, structures or components contained in semiconductor
10 wafers or dice or the like). Intel knows the components are especially made and especially
11 adapted to be combined outside of the United States in a manner that would infringe the '672
12 Patent (for example, by packaging or assembly, or by incorporation into desk-top computers,
13 laptops, servers, tablets, or the like by ODMs or OEMs). Based on these facts and the facts set
14 forth in the paragraphs above, Intel infringes the '672 Patent under 35 U.S.C. § 271(f)(1) and
15 (f)(2).

16 124. As a result of Intel's infringement of the '672 Patent, VLSI has suffered monetary
17 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
18 no event less than a reasonable royalty for the use made of the invention by Intel together with
19 interest and costs as fixed by the Court.

20 EIGHTH COUNT

21 (Infringement of U.S. Patent No. 8,566,836)

22 125. U.S. Patent No. 8,566,836, entitled "Multi-Core System on Chip," was filed on
23 November 13, 2009. The inventors of the '836 Patent are Ravindraraj Ramaraju, David R.
24 Bearden, and William C. Moyer. A true and correct copy of the '836 Patent is attached hereto as
25 Exhibit 8. The '836 Patent is directed to methods and systems for determining and optimizing the
26 performance of multi-core processors, for example, measuring the speed of the cores and then
27 selecting the fastest core for a single core task.

1 126. Intel makes, uses, sells, offers to sell, and/or imports processors that use Turbo
2 Boost Max Technology 3.0, including but not limited to Intel's Core i7 Extreme Edition processor
3 and Core i7-69xx/68xx processor families (collectively, "the '836 Accused Products"). The '836
4 Accused Products infringe one or more claims of the '836 Patent, including but not limited to
5 claim 1 of the '836 Patent.

6 127. To the extent the preamble of claim 1 is limiting, the '836 Accused Products are
7 multi-core processing devices.

8 128. The '836 Accused Products comprise features for measuring a processing speed
9 parameter for each of a plurality of cores. For example, the '836 Accused Products incorporating
10 Intel's Turbo Boost Max Technology 3.0 identify the fastest core on the die to provide greater
11 levels of performance. Indeed, Intel's Turbo Boost Max Technology 3.0 identifies the best
12 performing core(s) on a processor.

13 129. The '836 Accused Products comprise features for storing each measured processing
14 speed parameter for each of the plurality of cores in a storage device. For example, Intel
15 advertises the ability of '836 Accused Products incorporating Intel's Turbo Boost Max
16 Technology 3.0 to run targeted applications on a particular, high-performing core. (*See, e.g.,*
17 Intel® Core™ i7 Processor Family for LGA2011-v3 Socket, Volume 1 of 2, August 2016). The
18 '836 Accused Products achieve this feature by storing the speed parameters of the cores for future
19 use in choosing a particular high-performing core.

20 130. The '836 Accused Products comprise features that, upon identifying a processing
21 task that cannot be run across the plurality of cores, selecting a core from the plurality of cores
22 having a fastest measured processing speed parameter at a given voltage to run the processing
23 task. For example, Intel's Turbo Boost Max Technology 3.0 uses a driver coupled with
24 information stored in the CPU to identify and direct workloads to the fastest core on the die first.

25 131. By making, using, testing, offering for sale, selling, and/or importing integrated
26 circuits, including but not limited to the '836 Accused Products, Intel has injured VLSI and is
27

1 liable to VLSI for directly infringing one or more claims of the '836 Patent, including but not
2 limited to claim 1 of the '836 Patent, pursuant to 35 U.S.C. § 271(a).

3 132. Intel also infringes the '836 Patent under 35 U.S.C. § 271(b), (c), (f)(1), (f)(2), and
4 (g).

5 133. Intel has had knowledge of the '836 Patent and of its infringement of the '836
6 Patent since at least the date of service of this Complaint or shortly thereafter.

7 134. Intel has intended to induce patent infringement by third-party original equipment
8 manufacturers (OEMs), customers and users of the '836 Accused Products and had knowledge
9 that the inducing acts would cause infringement or were willfully blind to the possibility that their
10 inducing acts would cause infringement. Intel has sold and continues to sell the '836 Accused
11 Products to OEMs making OEM products (e.g., computers, servers, laptops, tablets, etc.), for
12 example, Dell, HP, Acer, Lenovo, and others, knowing and specifically intending that the Accused
13 Products will be included in the OEM products and sold to customers in the United States in
14 violation of U.S. patent law, and/or to original design manufacturers (ODMs), knowing and
15 specifically intending that the Accused Products will ultimately be included in OEM products and
16 sold to customers in the United States. Indeed, Intel's promotion of its Turbo Boost Max
17 Technology 3.0 has informed customers through advertising materials that products incorporating
18 that feature contain '836 Accused Products. Intel also knows that many such OEM products that
19 contain the '836 Accused Products are made outside the United States and are imported into the
20 United States in violation of U.S. patent law. Intel also knows that U.S. customers of the OEMs
21 use the OEM products containing the '836 Accused Products in the United States in violation of
22 U.S. patent law.

23 135. Intel performed acts that constitute inducement of infringement, and would cause
24 actual infringement, with the knowledge of the '836 Patent. For example, Intel has provided and
25 continues to provide the '836 Accused Products to OEMs or ODMs which incorporate the '836
26 Accused Products into products which infringe the '836 Patent and are made, used, sold, offers to
27 sell, and/or imported in the United States of America. Intel also provides OEMs or ODMs with

1 documentation regarding the '836 Accused Products, including data sheets, which provide
2 information on installing, using, and configuring the '836 Accused Products in the OEM
3 computers. Intel sells the '836 Accused Products to OEMs or ODMs and provides such
4 documentation with the knowledge and intent that the OEMs or ODMs will install and configure
5 the '836 Accused Products as described and that end customers of the OEMs will use the Accused
6 Products in the manner expected by Intel and as set out in the documentation, and Intel knows that
7 using the '836 Accused Products in this way will constitute infringement of the '836 Patent. Intel
8 further advertises the '836 Accused Products directly to the end-users of the infringing products
9 made by the computer OEMs, further inducing the end-users to infringe the '836 Patent by buying
10 and using infringing products containing the '836 Accused Products. Accordingly, Intel has
11 induced and continues to induce end users of the '836 Accused Products to use the products in
12 their ordinary and customary way to infringe the '836 Patent, knowing that such use constitutes
13 infringement of the '836 Patent.

14 136. Intel contributes to the infringement of the '836 Patent in violation of 35 U.S.C.
15 § 271(c). As stated above, Intel was aware of the '836 Patent and of its infringement at least as of
16 the time of service of this Complaint. Intel offers to sell and sells within the United States the
17 '836 Accused Products knowing that those products constitute a material part of the claimed
18 invention because the Accused Products use the infringing multi-core processing features
19 described above. Intel knows that the Accused Products are especially made or especially adapted
20 for use in infringing the '836 Patent because the Accused Products all use the infringing multi-
21 core processing features. Furthermore, because the '836 Accused Products use the infringing
22 multi-core processing features when operated by an end-user, the Accused Products are not a
23 staple article or commodity of commerce suitable for substantial non-infringing use. In addition,
24 Intel offers to sell and sells the '836 Accused Products to OEMs or ODMs who then incorporate
25 the '836 Accused Products into infringing products which are used, sold, offered for sale, and/or
26 imported in the United States in an infringing manner. Accordingly, Intel is liable as a
27 contributory infringer. Intel contributes to the infringement of the '836 Patent. Intel offers to sell

1 and sells within the United States the '836 Accused Products knowing that those products
2 constitute a material part of the claimed invention and are especially made for use in infringement
3 of the '836 Patent. For example, Intel offers to sell and sells the '836 Accused Products to
4 computer OEMs or ODMs who then incorporate the '836 Accused Products into infringing
5 products which are used, sold, offered for sale, and/or imported in the United States in an
6 infringing manner. Furthermore, the '836 Accused Products are not a staple article or commodity
7 of commerce suitable for substantial noninfringing use. Accordingly, Intel is liable as a
8 contributory infringer.

9 137. To the extent Intel does not meet all of the limitations of the '836 Patent by making
10 the '836 Accused Products in the United States, Intel supplies from the United States a substantial
11 portion of the components of the '836 Accused Products (for example, structures or components
12 contained in semiconductor wafers or dice or the like), and actively induces the combination of
13 components outside the United States in a manner that would infringe the '836 Patent (for
14 example, by packaging or assembly, or by incorporation into desk-top computers, laptops, servers,
15 tablets, or the like by ODMs or OEMs). Intel further supplies from the United States components
16 which are especially made and especially adapted for use in practicing the '836 Patent, and not
17 staple articles or a commodity of commerce suitable for substantial non-infringing use (for
18 example, structures or components contained in semiconductor wafers or dice or the like). Intel
19 knows the components are especially made and especially adapted to be combined outside of the
20 United States in a manner that would infringe the '836 Patent (for example, by packaging or
21 assembly, or by incorporation into desk-top computers, laptops, servers, tablets, or the like by
22 ODMs or OEMs). Based on these facts and the facts set forth in the paragraphs above, Intel
23 infringes the '836 Patent under 35 U.S.C. § 271(f)(1) and (f)(2).

24 138. Intel infringes under 35 U.S.C. § 271(g) by importing into the United States and
25 selling and offering for sale within the United States Accused Products made outside the United
26 States by a process covered by the claims of the '836 Patent. Moreover, Intel knowingly
27 encourages and intends to induce infringement of the '836 Patent by selling the '836 Accused

1 Products made outside the United States by a process covered by the '836 Patent to ODMs and/or
2 OEMs with knowledge and the specific intention that ODMs and/or OEMs will incorporate the
3 '836 Accused Products into OEM products that the OEMs will import, offer for sale, sell, and/or
4 test in the United States in violation of 35 U.S.C. § 271(g). Intel is aware that ODMs and/or
5 OEMs routinely assemble OEM products (e.g., computers, servers, laptops, tablets, etc.)
6 containing the '836 Accused Products outside the United States with the specific intention of
7 importing, offering for sale, selling, and/or testing these OEM products in the United States. Intel
8 enables and specifically encourages ODMs and/or OEMs to manufacture OEM products that
9 contain the '836 Accused Products with knowledge that the OEM products will be imported,
10 offered for sale, sold, and/or tested in the United States.

11 139. As a result of Intel's infringement of the '836 Patent, VLSI has suffered monetary
12 damages, and seeks recovery in an amount adequate to compensate for Intel's infringement, but in
13 no event less than a reasonable royalty for the use made of the invention by Intel together with
14 interest and costs as fixed by the Court.

15 **PRAYER FOR RELIEF**

16 WHEREFORE, Plaintiff prays for judgment and seeks relief against Intel as follows:

- 17 (a) For judgment that the patents-in-suit have been and/or continue to be infringed by
18 Intel;
- 19 (b) For an accounting of all damages sustained by Plaintiff as the result of Intel's acts
20 of infringement;
- 21 (c) For enhanced damages pursuant to 35 U.S.C. § 284;
- 22 (d) For a mandatory future royalty payable on each and every product sold by Intel in
23 the future that is found to infringe one or more of the patents-in-suit and on all future products
24 which are not colorably different from products found to infringe;
- 25 (e) For an award of attorneys' fees pursuant to 35 U.S.C. § 285 or otherwise permitted
26 by law;
- 27 (f) For costs of suit and interest; and

1 (g) For such other and further relief as the Court may deem just and proper.

2 **DEMAND FOR JURY TRIAL**

3 Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure and Local Rule CV-38,
4 Plaintiff demands a trial by jury of this action.

5
6
7
8 Dated: October 2, 2017

Respectfully Submitted,

9 By: /s/ Henry Bunsow

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