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**IN THE UNITED STATES DISTRICT COURT  
FOR THE CENTRAL DISTRICT OF CALIFORNIA**

BELL SEMICONDUCTOR, LLC

Plaintiff,

v.

NVIDIA CORPORATION; DELL  
TECHNOLOGIES INC.; G.B.T.  
INC.; GIGA-BYTE TECHNOLOGY  
CO., LTD.; MICRO-STAR  
INTERNATIONAL CO., LTD.;  
NINTENDO OF AMERICA INC.;  
BEST BUY CO. INC.; and  
AMAZON.COM, INC.

Defendants.

**Case No. 2:22-CV-5747**

**ORIGINAL COMPLAINT**

**JURY TRIAL DEMANDED**

1 Plaintiff Bell Semiconductor, LLC (“Bell Semiconductor” or “Plaintiff”) brings  
2 this Complaint against Defendant NVIDIA Corporation (“NVIDIA”) for infringement  
3 of U.S. Patent Nos. 8,049,340;<sup>1</sup> 8,288,269;<sup>2</sup> 7,646,091;<sup>3</sup> 7,345,245;<sup>4</sup> and 7,180,011.<sup>5</sup>  
4 Plaintiff also brings this Complaint against the remaining Defendants, who are  
5 customers of NVIDIA and/or retailers of the products of NVIDIA and/or its  
6 customers, for infringement of one or more of the Asserted Patents. Plaintiff, on  
7 personal knowledge of its own acts, and on information and belief as to all others  
8 based on investigation, alleges as follows:

9 **SUMMARY OF THE ACTION**

10 1. This is a patent infringement suit relating to NVIDIA’s unauthorized and  
11 unlicensed use of the Asserted Patents. The semiconductor packaging technology  
12 claimed in the Asserted Patents is used by NVIDIA in the production of one or more  
13 of its semiconductor chips and packages, including the ODNX02 (and other Maxwell  
14 2.0 architecture) system-on-a-chip (“SoC”) products; the GA104 and Turing  
15 architecture GPU products (including but not limited to the TU106, TU116, and  
16 TU117); and its ConnectX series (including the ConnectX-4 LX, and on information  
17 and belief, the ConnectX-5, ConnectX-6, and ConnectX-7 series) ethernet chip  
18 products, (each an “NVIDIA Accused Product”) used in, among other things, graphics  
19 cards, ethernet cards and computers incorporating such cards manufactured, sold,  
20 used, and/or offered for sale by NVIDIA’s downstream customers, including the other  
21 Defendants.

22 2. Bell Semiconductor brings this action to put a stop to the Defendants’  
23 unauthorized and unlicensed use of the inventions claimed in the Asserted Patents.

24  
25 <sup>1</sup> “’340 patent”.

26 <sup>2</sup> “’269 patent”.

27 <sup>3</sup> “’091 patent”.

28 <sup>4</sup> “’245 patent”.

<sup>5</sup> “’011 patent”. The ’340 patent, ’269 patent, ’091 patent, ’245 patent, and ’011 patent, collectively, are the “Asserted Patents.”

**THE PARTIES**

1  
2 3. Plaintiff Bell Semiconductor is a limited liability company organized  
3 under the laws of the State of Delaware with a place of business at One West Broad  
4 Street, Suite 901, Bethlehem, PA 18018.

5 4. Bell Semiconductor stems from a long pedigree that began at Bell Labs.  
6 Bell Labs sprung out of the Bell System as a research and development laboratory,  
7 and eventually became known as one of America’s greatest technology incubators.  
8 Bell Labs employees invented the transistor in 1947 in Murray Hill, New Jersey. It  
9 was widely considered one of the most important technological breakthroughs of the  
10 time, earning the inventors the Nobel Prize in Physics. Bell Labs made the first  
11 commercial transistors at a plant in Allentown, Pennsylvania. For decades, Bell Labs  
12 licensed its transistor patents to companies throughout the world, creating a  
13 technological boom that led to the use of transistors in the semiconductor devices  
14 prevalent in most electronic devices today.

15 5. Bell Semiconductor, a successor to Bell Labs’ pioneering efforts, owns  
16 over 1,900 worldwide patents and applications, approximately 1,500 of which are  
17 active United States patents. This patent portfolio of semiconductor–related  
18 inventions was developed over many years by some of the world’s leading  
19 semiconductor companies, including Bell Labs, Lucent Technologies, Agere Systems,  
20 and LSI Logic and LSI Corporation (“LSI”). This portfolio reflects technology that  
21 underlies many important innovations in the development of semiconductors and  
22 integrated circuits for high–tech products, including smartphones, computers,  
23 wearables, digital signal processors, IoT devices, automobiles, broadband carrier  
24 access, switches, network processors, and wireless connectors.

25 6. The principals of Bell Semiconductor all worked at Bell Labs’ Allentown  
26 facility, and have continued the rich tradition of innovating, licensing, and helping the  
27 industry at large since those early days at Bell Labs. For example, Bell  
28 Semiconductor’s CTO was an LSI Fellow and Broadcom Fellow. He is known

1 throughout the world as an innovator with more than 300 patents to his name, and he  
2 has a sterling reputation for helping semiconductor fabs improve their efficiency. Bell  
3 Semiconductor’s CEO took a brief hiatus from the semiconductor world to work with  
4 Nortel Networks in the telecom industry during its bankruptcy. His efforts saved the  
5 pensions of tens of thousands of Nortel retirees and employees. In addition, several  
6 Bell Semiconductor executives previously served as engineers at many of these  
7 companies and were personally involved in creating the ideas claimed throughout Bell  
8 Semiconductor’s extensive patent portfolio.

9         7. On information and belief, NVIDIA Corporation (“NVIDIA”) is a public  
10 corporation organized and existing under the laws of Delaware with its principal place  
11 of business and headquarters at 2701 San Tomas Expressway, Santa Clara, CA 95050.  
12 NVIDIA has a registered agent for service of process at 1226 Tiros Way, Sunnyvale,  
13 CA 94086.

14         8. On information and belief, Defendant Dell Technologies Inc. (“Dell”) is  
15 a corporation incorporated under the laws of Delaware with its principal place of  
16 business at One Dell Way, Round Rock, TX 78682.

17         9. On information and belief, Defendant GIGA-BYTE Technology Co.,  
18 Ltd. (“Gigabyte Taiwan”) is a public corporation organized and existing under the  
19 laws of Taiwan with a principal place of business at No. 6, Baoqiang Road, Xindian  
20 District, New Taipei City, Taiwan. Defendant G.B.T. Inc. (collectively with Gigabyte  
21 Taiwan, “Gigabyte”) is a corporation organized and existing under the laws of  
22 California with a principal place of business and agent for services of process (Eric C.  
23 Lu) at 17358 Railroad St, City of Industry, CA 91748. On information and belief,  
24 G.B.T. Inc. is wholly owned, directly or indirectly, by Gigabyte Taiwan. Gigabyte  
25 Taiwan has failed to register an agent for service of process in the State of California  
26 as required by Cal. Corp. Code § 2105 and may be served with process pursuant to the  
27 provisions of the Hague Convention or pursuant to Cal. Corp. Code § 2110 *et seq.*—  
28

1 including by service upon the Secretary of State of California or its domestic  
2 subsidiary G.B.T. Inc.

3 10. On information and belief, Micro-Star International Co., Ltd. (“MSI”) is  
4 a public corporation organized and existing under the laws of Taiwan with its  
5 principal place of business at No. 69, Lide St., Zhonghe Dist., New Taipei City 235,  
6 Taiwan. MSI has failed to register an agent for service of process in the State of  
7 California as required by Cal. Corp. Code § 2105 and may be served with process  
8 pursuant to the provisions of the Hague Convention or pursuant to Cal. Corp. Code §  
9 2110 *et seq.*—including by service upon the Secretary of State of California.

10 11. On information and belief, Nintendo of America Inc. (“Nintendo”) is a  
11 corporation organized and existing under the laws of the state of Washington with its  
12 principal place of business and headquarters at 635 E. Old Second Street, San Jacinto,  
13 CA 92583. Nintendo has a registered agent for service of process (Christopher  
14 Columbus D. Ward) at the same address.

15 12. On information and belief, Best Buy Co. Inc. (“Best Buy”) is a public  
16 corporation organized and existing under the laws of Minnesota, with a principal  
17 place of business at 7601 Penn Ave. S, Richfield, MN 55423. Best Buy has a  
18 registered agent for service of process at CT Corporation System, Inc., 818 W  
19 Seventh St, Ste 930, Los Angeles, CA 90017.

20 13. On information and belief, Amazon.com, Inc. (“Amazon”) is a public  
21 corporation organized and existing under the laws of Delaware, with a principal place  
22 of business at 410 Terry Avenue North, Seattle, Washington 98109. Amazon has a  
23 registered agent for service of process at Corporation Service Company, 251 Little  
24 Falls Drive, Wilmington, DE 19808.

25 14. On information and belief, Defendant NVIDIA, develops, designs,  
26 and/or manufactures products in the United States, including in this District, that use  
27 the structures and/or methods of the Asserted Patents; and/or use structures and/or  
28 methods of the Asserted Patents in the United States, including in this District, to

1 make products; and/or distribute, market, sell, or offer to sell in the United States  
2 and/or import products into the United States, including in this District, that were  
3 manufactured using the patented methods or include the patented structures.  
4 Additionally, NVIDIA introduces those products into the stream of commerce  
5 knowing that they will be sold and/or used in this District and elsewhere in the United  
6 States.

7 15. On information and belief, each of Defendants Dell, Gigabyte, MSI, and  
8 Nintendo (collectively, “Downstream Product Defendants”) makes, uses, sells, offers  
9 for sale, and/or imports into the United States and this District products that  
10 incorporate NVIDIA Accused Products (“Downstream Accused Products”) and  
11 thereby infringes at least one of the Asserted Patents.<sup>6</sup> Each Downstream Product  
12 Defendant knows that by doing so, it introduces its Downstream Accused Products  
13 and the NVIDIA Accused Products incorporated therein into the stream of commerce  
14 and that those products will be used and sold in this District and elsewhere throughout  
15 the United States. On information and belief, the primary (but not exclusive) method  
16 by which Downstream Product Defendants infringe the Asserted Patents is by  
17 incorporating at least one of the NVIDIA Accused Products into one or more of the  
18 branded products of each Downstream Product Defendant, which each Downstream  
19 Product Defendant then offers for sale and sells both directly and indirectly.

20 16. On information and belief, each of Defendants Amazon, Best Buy, and  
21 Dell<sup>7</sup> (collectively, “Retailer Defendants”) makes, uses, sells, offers for sale, and/or  
22 imports into the United States and this District NVIDIA Accused Products and/or  
23 Downstream Accused Products and other products that incorporate NVIDIA Accused  
24 Products (collectively, “Retailed Products”), and thereby infringes one or more of the

25 \_\_\_\_\_  
26 <sup>6</sup> As detailed further below, Dell and Gigabyte both infringe each of the ’340 patent,  
27 the ’269 patent, the ’091 patent, and the ’011 patent; MSI infringes the ’340 patent, the  
28 the ’269 patent, and the ’011 patent; Nintendo infringes the ’245 patent.

<sup>7</sup> Defendant Dell is both a Downstream Product Defendant and a Retailer Defendant.

1 Asserted Patents.<sup>8</sup> Each Retailer Defendant knows that by doing so, it introduces its  
2 Retailed Products and the NVIDIA Accused Products incorporated therein into the  
3 stream of commerce and that those products will be used and sold in this District and  
4 elsewhere throughout the United States. On information and belief, the primary (but  
5 not exclusive) method by which each Retailer Defendant infringe the Asserted Patents  
6 is by the sale or re-sale of Retailed Products, comprising: (1) NVIDIA-branded  
7 products containing NVIDIA Accused Products; (2) Downstream Accused Products;  
8 and (3) other products made or branded by third parties that contain or incorporate  
9 one or more NVIDIA Accused Products.

10 **JURISDICTION AND VENUE**

11 17. This is an action for patent infringement arising under the patent laws of  
12 the United States, Title 35 of the United States Code. Accordingly, this Court has  
13 subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

14 18. This Court has personal jurisdiction over Defendants under the laws of  
15 the State of California, due at least to their substantial business in California and in  
16 this District. Defendants have purposefully and voluntarily availed themselves of the  
17 privileges of conducting business in the United States, in the State of California, and  
18 in this District by continuously and systematically placing goods into the stream of  
19 commerce through an established distribution channel with the expectation that they  
20 will be purchased by consumers in this District. In the State of California and in this  
21 District, Defendants each, directly and/or through intermediaries: (i) perform at least a  
22 portion of the infringements alleged herein; (ii) develop, design, and/or manufacture  
23 products according to claims of each Asserted Patent; (iii) distribute, market, sell, or  
24 offer to sell products that embody the Asserted Patent; and/or (iv) import products

25  
26 <sup>8</sup> As detailed further below, Amazon infringes every Asserted Patent; Dell (as Retailer  
27 Defendant) infringes each of the '340 patent, the '269 patent, the '091 patent, and the  
28 '011 patent; and Best Buy infringes each of the '340 patent, the '269 patent, and the  
'011 patent.

1 formed according to the '269 patented processes/methodologies and/or the structures  
2 of the other Asserted Patents.

3 19. On information and belief, venue is proper in this Court pursuant to 28  
4 U.S.C. §§ 1391 and 1400 with respect to NVIDIA because NVIDIA has committed,  
5 and continues to commit, acts of infringement in this District (including, but not  
6 limited to, offers for sale and, on information and belief, sales of NVIDIA Accused  
7 Products and NVIDIA-branded products containing or incorporating NVIDIA  
8 Accused Products from its store.nvidia.com/en-us/ website and from its physical  
9 location) and has a regular and established place of business in this District. For  
10 example, NVIDIA has an office in San Dimas, California, which is located within this  
11 District. See Contact NVIDIA – Our Locations, [https://www.nvidia.com/en-](https://www.nvidia.com/en-us/contact/)  
12 [us/contact/](https://www.nvidia.com/en-us/contact/) (last accessed Aug. 12, 2022) (listing San Dimas, California location).

13 20. On information and belief, venue is proper in this Court pursuant to 28  
14 U.S.C. §§ 1391 and 1400 with respect to Dell because Dell has committed, and  
15 continues to commit, acts of infringement in this District (including, but not limited  
16 to, offers for sale and, on information and belief, sales of Retailed Products from itself  
17 and other manufacturers via dell.com and from one or more of its physical locations)  
18 and has a regular and established place of business in this District. For example, Dell  
19 has offices in this District at 135 Technology Drive, Irvine, CA 92618; 2201 Dupont  
20 Drive, Irvine, CA 92612; 135 Technology Drive, Irvine, CA 92618; and 2101  
21 Rosecrans Avenue, El Segundo, CA, 90245. Dell currently advertises more than 100  
22 job openings in the State of California, including engineering positions in this District  
23 of potential relevance to the claims in this suit.

24 21. On information and belief, venue is proper in this Court pursuant to 28  
25 U.S.C. §§ 1391 and 1400 with respect to Gigabyte because Gigabyte has committed,  
26 and continues to commit, acts of infringement in this District (including, but not  
27 limited to, offers for sale and, on information and belief, sales of Downstream  
28 Accused Products via its store.gigabyte.us website, and, on information and belief,



1 from its physical location) and has a regular and established place of business in this  
2 District. For example, Gigabyte has its principal domestic location in this District at  
3 17358 Railroad St, City of Industry, CA 91748.

4 22. On information and belief, venue is proper in this Court pursuant to 28  
5 U.S.C. §§ 1391 and 1400 with respect to MSI because MSI has committed, and  
6 continues to commit, acts of infringement in this District (including, but not limited  
7 to, offers for sale and, on information and belief, sales of Downstream Accused  
8 Products via its us-store.msi.com website and from its physical location) and has a  
9 regular and established place of business in this District. For example, MSI has its  
10 principal domestic location in this District at 901 Canada Court, City of Industry, CA  
11 91748, which is the only “company location” in the United States listed on MSI’s  
12 website.<sup>9</sup> See Company Location, <http://msi.com/about/contact-us-select> (last  
13 accessed Aug. 12, 2022).

14 23. On information and belief, venue is proper in this Court pursuant to 28  
15 U.S.C. §§ 1391 and 1400 with respect to Nintendo because Nintendo has committed,  
16 and continues to commit, acts of infringement in this District (including, but not  
17 limited to, offers for sale of Downstream Accused Products via Nintendo.com) and  
18 has a regular and established place of business in this District. For example, Nintendo  
19 has, according to information that it submitted to the California Secretary of State, its  
20 principal place of business and headquarters in this District at 635 E. Old Second  
21 Street, San Jacinto, CA 92583.

22 24. On information and belief, venue is proper in this Court pursuant to 28  
23 U.S.C. §§ 1391 and 1400 with respect to Best Buy because Best Buy has committed,  
24 and continues to commit, acts of infringement in this District (including, but not  
25 limited to, offers for sale of Retail Products via Bestbuy.com and at its physical  
26

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27 <sup>9</sup> MSI’s website also lists a “Service Location” at 902 Canada Court, City of Industry,  
28 CA 91748, which is likewise located within this District. See Service Location,  
<https://www.msi.com/page/service-location-new> (last accessed Aug. 12, 2022).

1 locations and, on information and belief, actual sales of Retailed Products at its  
2 physical locations) and has a regular and established place of business in this District.  
3 For example, Best Buy has five stores in Los Angeles and many other stores in the  
4 surrounding area among its 143 California locations. See Exhibits K & L.

5 25. On information and belief, venue is proper in this Court pursuant to 28  
6 U.S.C. §§ 1391 and 1400 with respect to Amazon because Amazon has committed,  
7 and continues to commit, acts of infringement in this District (including, but not  
8 limited to, offers for sale and, on information and belief, sales of Downstream  
9 Accused Products via Amazon.com) and has at least one regular and established place  
10 of business in this District. In fact, Amazon maintains numerous regular and  
11 established places of business in this judicial district, including but not limited to: (1)  
12 Amazon Fresh stores in Irvine, Long Beach, Huntington Beach, Whittier, and Los  
13 Angeles, among others; (2) an Amazon Style store at 889 Americana Way in  
14 Glendale; and (3) Amazon fulfillment centers in Beaumont, Eastvale, Fontana, Jurupa  
15 Valley, Moreno Valley, Perris, Redlands, Riverside, and San Bernadino, among  
16 others.

17 26. Venue is also convenient for all parties in this District. This is at least  
18 true because of this District's close ties to this case—including the technology,  
19 relevant witnesses, and sources of proof noted above—and its ability to quickly and  
20 efficiently move this case to resolution.

21 **U.S. PATENT NO. 8,049,340**

22 27. Bell Semiconductor owns by assignment the entire right, title, and  
23 interest in the '340 patent, entitled "Device for Avoiding Parasitic Capacitance in an  
24 Integrated Circuit Package," which issued on November 1, 2011.

25 28. The '340 patent issued to inventors Jeffrey Hall, Shawn Nikoukary,  
26 Amar Amin, and Michael Jenkins from United States Patent Application No.  
27 11/277,188, filed March 22, 2006. A true and correct copy of the '340 patent is  
28 attached as Exhibit A.

1           29. The '340 patent is directed to solving the problem of signal deterioration  
2 in integrated circuits such as a serializer/deserializer. At high frequencies, “the  
3 parasitic capacitance between transmit (Tx) and receive (Rx) contact pads in the  
4 contact pad layer and nearby metal layers of the integrated circuit package may result  
5 in a deterioration of the signal waveform and a correspondingly reduced circuit  
6 performance.” Ex. A at 2:52-60.

7           30. Parasitic capacitance results when parts in an electronic circuit are  
8 proximate one another, potentially leading to interference with the input or output to a  
9 device. Reducing parasitic capacitance has become increasingly necessary as  
10 integrated circuit devices, particularly high-speed devices, have included more  
11 external connections.

12           31. The '340 patent identifies the shortcomings of the prior art. More  
13 specifically, the specifications describe that “metal layers that have a relatively large  
14 metal area may produce significant parasitic capacitance.” Parasitic capacitance  
15 between, e.g., the ball pad and the routing metal layer or between the underlying ball  
16 pad and the ground return metal layer can produce “distortion of the switching  
17 waveform of high-frequency signals used, for example, in serializing/deserializing  
18 devices (SERDES). As a result, the maximum operating frequency that may be used  
19 in the integrated circuit is disadvantageously limited . . . .” *Id.* at 3:21-25.

20           32. To reduce parasitic capacitance in the multi-layer packages, the '340  
21 patent teaches the use of cutouts over the electrical contacts in electrically conductive  
22 layers to substantially avoid overlap between the electrical contacts and metal in the  
23 electrically conductive layers.

24           33. The '340 patent contains 3 independent claims and 19 total claims,  
25 covering an integrated circuit substrate. Claim 1 reads:

26           1. An integrated circuit package substrate comprising:  
27  
28

1 a first and a second electrically conductive layer separated  
2 from each other by an electrically insulating layer with no  
intermediate conductive layer therebetween;

3 a plurality of rows of contact pads formed in the first  
4 electrically conductive layer for making a direct connection  
5 between the integrated circuit package substrate and a printed  
circuit board; and

6 a plurality of cutouts formed in the second electrically  
7 conductive layer for reducing parasitic capacitance between  
8 the second electrically conductive layer and the first  
electrically conductive layer,

9 wherein each cutout encloses an electrically insulating area  
10 within the second electrically conductive layer, and

11 wherein each electrically insulating area completely overlaps  
12 a corresponding one of the contact pads formed in the first  
13 electrically conductive layer such that there is substantially no  
overlap of the rows of contact pads with metal in the second  
electrically conductive layer.

14 34. This claim, as a whole, provides significant benefits and improvements  
15 to the function of the semiconductor device, e.g., increasing the maximum operating  
16 frequency that may be used in integrated circuits relative to prior art designs.

17 **U.S. PATENT NO. 8,288,269**

18 35. Bell Semiconductor owns by assignment the entire right, title, and  
19 interest in the '269 patent, entitled "Methods for Avoiding Parasitic Capacitance in an  
20 Integrated Circuit Package," which issued on October 16, 2012.

21 36. The '269 patent issued to inventors Jeffrey Hall, Shawn Nikoukary,  
22 Amar Amin, and Michael Jenkins from United States Patent Application No.  
23 13/252,632, filed October 4, 2011. A true and correct copy of the '269 patent is  
24 attached as Exhibit B.

25 37. The '269 patent is related to and shares an identical specification with the  
26 '340 patent. Where the '340 patent claims apparatuses for minimizing parasitic  
27 capacitance, the '269 patent claims methods for directed to the same general problem.  
28 More particularly, in order to reduce parasitic capacitance in the multi-layer packages,

1 the '269 patent teaches the use of cutouts over the electrical contacts in electrically  
2 conductive layers to eliminate substantial overlap between the electrical contacts and  
3 metal in the electrically conductive layers.

4 38. The '269 patent contains 2 independent claims and 20 total claims,  
5 covering an integrated circuit substrate. Claim 1 reads:

6 1. A method, comprising steps of:

7 forming a first electrically conductive layer including a  
8 plurality of rows of contact pads;

9 forming an electrically insulating layer on the first electrically  
10 conductive layer; and

11 forming a second electrically conductive layer over the  
12 electrically insulating layer such that there is no intermediate  
13 conductive layer between the first and second electrically  
14 conductive layers, the second electrically conductive layer  
15 comprising metal and a plurality of cutouts wherein each  
16 cutout encloses an electrically insulating area within the  
17 second electrically conductive layer and wherein each  
18 electrically insulating area completely overlaps a  
19 corresponding one of the contact pads such that there is  
20 substantially no overlap of the rows of contact pads with  
21 metal in the second electrically conductive layer.

22 39. Similar to the '340 patent, this claim, as a whole, provides significant  
23 benefits and improvements to the function of the semiconductor device, e.g.,  
24 increasing the maximum operating frequency that may be used in integrated circuits  
25 relative to prior art designs

26 **U.S. PATENT NO. 7,646,091**

27 40. Bell Semiconductor owns by assignment the entire right, title, and  
28 interest in the '091 patent, entitled "Semiconductor Package and Method Using  
Isolated Vss Plane to Accommodate High Speed Circuitry Ground Isolation," which  
issued on January 12, 2010.

1 41. The '091 patent issued to inventors Maurice Othieno, Chok Chia, and  
2 Amar Amin from United States Patent Application No. 11/399,723, filed April 6,  
3 2006. A true and correct copy of the '091 patent is attached as Exhibit C.

4 42. Modern integrated circuits require both low-speed and high-speed  
5 circuitry. Excessive noise generated by the high-speed circuitry interferes with the  
6 operation of the low-speed circuitry sharing the same ground plane. At high data rates  
7 this is a serious problem. Additionally, at high system performance the problem of  
8 ground bounce is magnified.

9 43. In order to eliminate those problems, the '091 patent teaches the use of a  
10 dedicated high-speed ground plane that is electrically isolated from the ground plane  
11 used to ground the low-speed circuitry. As described in the '091 patent, a  
12 semiconductor integrated circuit package includes a substrate which can have an  
13 integrated circuit die attached to it. The package may include a dedicated high-speed  
14 ground plane that is electrically isolated from the ground plane used to ground the  
15 low-speed circuitry of the package.

16 44. The '091 patent contains 1 independent claim and 14 total claims,  
17 covering an integrated circuit substrate. Claim 1 of the '091 patent reads:

- 18 1. A semiconductor integrated circuit (IC) package which comprises:  
19 a substrate having a first surface and a second surface  
20 wherein;  
21 a first layer of the substrate includes,  
22 a first ground plane enabling electrical connection with low  
23 speed electronic circuitry, and  
24 a second ground plane that is spatially separated and  
25 electrically isolated from the first ground plane, the second  
26 ground plane enabling electrical connection with high speed  
27 electronic circuitry;  
28 a second layer of the substrate includes,  
a third ground plane configured for electrical connection with  
low speed electronic circuitry, and

1 a fourth ground plane that is spatially separated and  
2 electrically isolated from the third ground plane, the third  
3 ground plane configured for electrical connection with high  
4 speed electronic circuitry;

5 a plurality of electrical connections that electrically connect  
6 the first ground plane with solder balls mounted on the second  
7 surface of the substrate;

8 a plurality of additional electrical connections that electrically  
9 connect the second ground plane with solder balls mounted  
10 on the second surface of the substrate; and

11 peripheral electrical contacts arranged on the substrate and  
12 configured for connection with electronic circuitry external to  
13 the package; and

14 at least one reference plane associated with each layer of the  
15 substrate and the ground planes included thereon.

16 45. This claim, as a whole, provides significant benefits and improvements  
17 to the function of the semiconductor device, e.g., improving system performance by  
18 reducing cross-talk and ground-bounce.

19 **U.S. PATENT NO. 7,345,245**

20 46. Bell Semiconductor owns by assignment the entire right, title, and  
21 interest in the '245 patent, entitled "Robust High Density Substrate Design for  
22 Thermal Cycling Reliability," which issued on March 18, 2008.

23 47. The '245 patent issued to inventors Anand Govind, Zafer Kutlu, and  
24 Farsad Ghangahi from United States Patent Application No. 10/681,554, filed  
25 October 8, 2003. A true and correct copy of the '245 patent is attached as Exhibit D.

26 48. Recent silicon technology advances have placed increased demand for  
27 high density signal routing on organic BGA substrates. Increased signal routing  
28 density in the substrate is obtained by using fine pitch vias through the core so that  
routing layers below the core can be efficiently utilized. The via pitch reduction  
requires the use of thin core substrates which are susceptible to warpage during  
thermal excursions. Typically, the regions are under the die corner are regions of

1 stress concentration. Under cycled thermal excursions, cracks can initiate from the  
2 ball pad edges and spread into the layers above the ball pad layer.

3 49. The '245 patent is generally related to a semiconductor package for a die  
4 with improved thermal cycling reliability. To eliminate package failures and  
5 occurrences cracks in signal traces, the '245 patent teaches routing of signals away  
6 from the high stress area associated with the ball pads and the corner of the die.

7 50. The '245 patent contains 2 independent claims and 12 total claims,  
8 covering an integrated circuit substrate. Claim 1 of the '245 patent reads:

9 1. A semi-conductor package comprising:

10 a top layer having a die mounted thereon, said die having a  
11 corner; and

12 a plurality of layers under the top layer, said plurality of layers  
13 comprising a bottom routing layer having signal traces  
14 thereon, and a ball pad layer under the bottom routing layer,  
15 said ball pad layer having a plurality of ball pads, wherein  
16 none of the signal traces of the bottom routing layer are  
located over ball pads of the ball pad layer which are disposed  
in an area within two ball pad pitches of the corner of the die.

17 51. This claim, as a whole, provides significant benefits and improvements  
18 to the function of the semiconductor device, e.g., improving system reliability by  
19 avoiding functional failures from cracks in the signal traces caused by thermal cycling  
20 stresses under the die corner.

21 **U.S. PATENT NO. 7,180,011**

22 52. Bell Semiconductor owns by assignment the entire right, title, and  
23 interest in the '011 patent, entitled "Device for Minimizing Differential Pair Length  
24 Mismatch and Impedance Discontinuities in an Integrated Circuit Package," which  
25 issued on February 20, 2007.

26 53. The '011 patent issued to inventors Jeffrey Hall and Shawn Nikoukary,  
27 from United States patent Application No. 11/276,938, filed March 17, 2006. A true  
28 and correct copy of the '011 patent is attached as Exhibit I.



1 54. The '011 patent is directed to solving the problem of signal distortion in  
2 integrated circuits. In integrated circuit package design, signals may be transmitted in  
3 the integrated circuit package over differential pairs. A differential pair includes two  
4 electrically conductive traces routed generally parallel to each other. Any length  
5 mismatch between each pair of the differential pair conductors may result in  
6 significant phase shift of the signal transmitted. Also, the shorter length conductive  
7 trace introduces impedance discontinuity, resulting in signal distortion.

8 55. The '011 patent identifies the shortcomings of the prior art. More  
9 specifically, the specifications describe that while “an extra trace length is added in  
10 the routing of the shorter differential pair connectors . . . before reaching the ball  
11 pads” to resolve length mismatch, “the problem of impedance discontinuity in the  
12 routing path” is not addressed which causes the signals to be “degraded at the base  
13 pads” when utilizing the prior art. *See* '011 patent, 4:6-15.

14 56. To simultaneously correct length mismatch and impedance discontinuity,  
15 , the '011 patent teaches the routing of the added trace length entirely inside an area  
16 surrounded by a contact pad that electrically terminates the shorter one of the two  
17 electrical conductors.

18 57. The '011 patent contains 1 independent claim and 3 total claims,  
19 covering an integrated circuit substrate. Claim 1 reads:

- 20 1. An integrated circuit package comprising:  
21 a differential pair of two electrical conductors; and  
22 an added trace length that extends a shorter one of the two  
23 electrical conductors by routing the added trace length  
24 entirely inside an area Surrounded by a contact pad that  
25 electrically terminates the shorter one of the two electrical  
26 conductors to compensate for an impedance dis continuity of  
27 the shorter one of the two electrical conductors.  
28

1 58. This claim, as a whole, provides significant benefits and improvements  
2 to the function of the semiconductor device, e.g., improving signal integrity compared  
3 to previous methods for correcting length mismatch in differential pairs.

4 **COUNT I – INFRINGEMENT OF U.S. PATENT NO. 8,049,340**

5 **(NVIDIA)**

6 59. Bell Semiconductor re-alleges and incorporates by reference the  
7 allegations of the foregoing paragraphs as if fully set forth herein.

8 60. The '340 patent is valid and enforceable under the United States patent  
9 laws.

10 61. Bell Semiconductor owns, by assignment, all right, title, and interest in  
11 and to the '340 patent, including the right to collect for past damages.

12 62. On information and belief, NVIDIA has and continues to directly  
13 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
14 271(a) one or more claims of the '340 patent by making, using, offering to sell, and/or  
15 selling within the United States, or importing into the United States, one or more  
16 semiconductor devices, including as one example the TU117 GPU, in the United  
17 States.

18 63. A claim chart demonstrating NVIDIA's infringement of the '340 patent  
19 is attached hereto as Exhibit E.

20 64. NVIDIA's Accused Products infringed and continue to infringe one or  
21 more claims of the '340 patent during the pendency of the '340 patent.

22 65. NVIDIA's infringement of the '340 patent was, and continues to be,  
23 done with knowledge of the '340 patent and with knowledge of Bell Semiconductor's  
24 contention that NVIDIA is infringing the '340 patent. On June 3, 2022, a  
25 representative of Bell Semiconductor provided actual notice to NVIDIA of the '340  
26 patent. NVIDIA's infringement of the '340 patent is thus willful and deliberate,  
27 entitling Bell Semiconductor to enhanced damages and attorneys' fees.

28

1 66. NVIDIA’s infringement of the ’340 patent is exceptional and entitles  
2 Bell Semiconductor to attorneys’ fees and costs incurred in prosecuting this action  
3 under 35 U.S.C. § 285.

4 67. Bell Semiconductor has been damaged by NVIDIA’s infringement of the  
5 ’340 patent and will continue to be damaged unless NVIDIA is enjoined by this  
6 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
7 which there is no adequate remedy at law. The balance of hardships favors Bell  
8 Semiconductor, and public interest is not disserved by an injunction.

9 68. Bell Semiconductor is entitled to recover from NVIDIA all damages that  
10 Bell Semiconductor has sustained as a result of NVIDIA’s infringement of the ’340  
11 patent, including without limitation and/or not less than a reasonable royalty.

12 **COUNT II – INFRINGEMENT OF U.S. PATENT NO. 7,180,011**

13 **(NVIDIA)**

14 69. Bell Semiconductor re-alleges and incorporates by reference the  
15 allegations of the foregoing paragraphs as if fully set forth herein.

16 70. The ’011 patent is valid and enforceable under the United States patent  
17 laws.

18 71. Bell Semiconductor owns, by assignment, all right, title, and interest in  
19 and to the ’011 patent, including the right to collect for past damages.

20 72. On information and belief, NVIDIA has and continues to directly  
21 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
22 271(a) one or more claims of the ’011 patent by making, using, offering to sell, and/or  
23 selling within the United States, or importing into the United States, one or more  
24 semiconductor devices, including as one example the GA104 GPU, in the United  
25 States.

26 73. A claim chart demonstrating NVIDIA’s infringement of the ’011 patent  
27 is attached hereto as Exhibit J.  
28

1 74. NVIDIA's Accused Products infringed and continue to infringe one or  
2 more claims of the '011 patent during the pendency of the '011 patent.

3 75. NVIDIA's infringement of the '011 patent was, and continues to be,  
4 done with knowledge of the '011 patent and with knowledge of Bell Semiconductor's  
5 contention that NVIDIA is infringing the '011 patent. On August 16, 2021, a  
6 representative of Bell Semiconductor provided actual notice to NVIDIA of the '011  
7 patent. NVIDIA's infringement of the '011 patent is thus willful and deliberate,  
8 entitling Bell Semiconductor to enhanced damages and attorneys' fees.

9 76. NVIDIA's infringement of the '011 patent is exceptional and entitles  
10 Bell Semiconductor to attorneys' fees and costs incurred in prosecuting this action  
11 under 35 U.S.C. § 285.

12 77. Bell Semiconductor has been damaged by NVIDIA's infringement of the  
13 '011 patent and will continue to be damaged unless NVIDIA is enjoined by this  
14 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
15 which there is no adequate remedy at law. The balance of hardships favors Bell  
16 Semiconductor, and public interest is not disserved by an injunction.

17 78. Bell Semiconductor is entitled to recover from NVIDIA all damages that  
18 Bell Semiconductor has sustained as a result of NVIDIA's infringement of the '011  
19 patent, including without limitation and/or not less than a reasonable royalty.

20 **COUNT III – INFRINGEMENT OF U.S. PATENT NO. 7,646,091**

21 **(NVIDIA)**

22 79. Bell Semiconductor re-alleges and incorporates by reference the  
23 allegations of the foregoing paragraphs as if fully set forth herein.

24 80. The '091 patent is valid and enforceable under the United States patent  
25 laws.

26 81. Bell Semiconductor owns, by assignment, all right, title, and interest in  
27 and to the '091 patent, including the right to collect for past damages.  
28

1 82. On information and belief, NVIDIA has and continues to directly  
2 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
3 271(a) one or more claims of the '091 patent by making, using, offering to sell, and/or  
4 selling within the United States, or importing into the United States, one or more  
5 semiconductor devices, including as one example the ConnectX-4 Lx (MT27711A0-  
6 FDCF-GE), in the United States.

7 83. A claim chart demonstrating NVIDIA's infringement of the '091 patent  
8 is attached hereto as Exhibit G.

9 84. NVIDIA's Accused Products infringe and continue to infringe one or  
10 more claims of the '091 patent during the pendency of the '091 patent.

11 85. NVIDIA's infringement of the '091 patent was, and continues to be,  
12 done with knowledge of the '091 patent and with knowledge of Bell Semiconductor's  
13 contention that NVIDIA is infringing the '091 patent. On July 30, 2021, a  
14 representative of Bell Semiconductor provided actual notice to NVIDIA of the '091  
15 patent. NVIDIA's infringement of the '091 patent is thus willful and deliberate,  
16 entitling Bell Semiconductor to enhanced damages and attorneys' fees.

17 86. NVIDIA's infringement of the '091 patent is exceptional and entitles  
18 Bell Semiconductor to attorneys' fees and costs incurred in prosecuting this action  
19 under 35 U.S.C. § 285.

20 87. Bell Semiconductor has been damaged by NVIDIA's infringement of the  
21 '091 patent and will continue to be damaged unless NVIDIA is enjoined by this  
22 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
23 which there is no adequate remedy at law. The balance of hardships favors Bell  
24 Semiconductor, and public interest is not disserved by an injunction.

25 88. Bell Semiconductor is entitled to recover from NVIDIA all damages that  
26 Bell Semiconductor has sustained as a result of NVIDIA's infringement of the '091  
27 patent, including without limitation and/or not less than a reasonable royalty.  
28

**COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 7,345,245**

**(NVIDIA)**

89. Bell Semiconductor re-alleges and incorporates by reference the allegations of the foregoing paragraphs as if fully set forth herein.

90. The '245 patent is valid and enforceable under the United States patent Laws.

91. Bell Semiconductor owns, by assignment, all right, title, and interest in and to the '245 patent, including the right to collect for past damages.

92. On information and belief, NVIDIA has and continues to directly infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one or more claims of the '245 patent by making, using, offering to sell, or selling within the United States, or importing into the United States, one or more semiconductor devices, including as one example of those fabricated with the Maxwell 2.0 Architecture, the ODNX02-A2, in the United States.

93. A claim chart demonstrating NVIDIA's infringement of the '245 patent is attached hereto as Exhibit H.

94. NVIDIA's Accused Products infringe and continue to infringe one or more claims of the '245 patent during the pendency of the '245 patent.

95. NVIDIA's infringement of the '245 patent was, and continues to be, done with knowledge of the '245 patent and with knowledge of Bell Semiconductor's contention that NVIDIA is infringing the '245 patent. On July 30, 2021, a representative of Bell Semiconductor provided actual notice to NVIDIA of the '245 patent. NVIDIA's infringement of the '245 patent is thus willful and deliberate, entitling Bell Semiconductor to enhanced damages and attorneys' fees.

96. NVIDIA's infringement of the '245 patent is exceptional and entitles Bell Semiconductor to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

1 97. Bell Semiconductor has been damaged by NVIDIA's infringement of the  
2 '245 patent and will continue to be damaged unless NVIDIA is enjoined by this  
3 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
4 which there is no adequate remedy at law. The balance of hardships favors Bell  
5 Semiconductor, and public interest is not disserved by an injunction.

6 98. Bell Semiconductor is entitled to recover from NVIDIA all damages that  
7 Bell Semiconductor has sustained as a result of NVIDIA's infringement of the '245  
8 patent, including without limitation and/or not less than a reasonable royalty.

9 **COUNT V – INFRINGEMENT OF U.S. PATENT NO. 8,288,269**

10 **(NVIDIA)**

11 99. Bell Semiconductor re-alleges and incorporates by reference the  
12 allegations of the foregoing paragraphs as if fully set forth herein.

13 100. The '269 patent is valid and enforceable under the United States patent  
14 laws.

15 101. Bell Semiconductor owns, by assignment, all right, title, and interest in  
16 and to the '269 patent, including the right to collect for past damages.

17 102. On information and belief, NVIDIA has and continues to directly  
18 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
19 271(a) one or more claims of the '269 patent by making, using, offering to sell, or  
20 selling within the United States, or importing into the United States, one or more  
21 semiconductor devices, including as one example the TU106, TU116, and TU117  
22 GPUs, in the United States.

23 103. A claim chart demonstrating NVIDIA's infringement of the '269 patent  
24 is attached hereto as Exhibit F.

25 104. NVIDIA's Accused Products infringe and continue to infringe one or  
26 more claims of the '269 patent during the pendency of the '269 patent.

27 105. NVIDIA's infringement of the '269 patent was, and continues to be,  
28 done with knowledge of the '269 patent and with knowledge of Bell Semiconductor's

1 contention that NVIDIA is infringing the '269 patent. On March 26, 2020, a  
2 representative of Bell Semiconductor provided actual notice to NVIDIA of the '269  
3 patent. NVIDIA's infringement of the '269 patent is thus willful and deliberate,  
4 entitling Bell Semiconductor to enhanced damages and attorneys' fees.

5 106. NVIDIA's infringement of the '269 patent is exceptional and entitles  
6 Bell Semiconductor to attorneys' fees and costs incurred in prosecuting this action  
7 under 35 U.S.C. § 285.

8 107. Bell Semiconductor has been damaged by NVIDIA's infringement of the  
9 '269 patent and will continue to be damaged unless NVIDIA is enjoined by this  
10 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
11 which there is no adequate remedy at law. The balance of hardships favors Bell  
12 Semiconductor, and public interest is not disserved by an injunction.

13 108. Bell Semiconductor is entitled to recover from NVIDIA all damages that  
14 Bell Semiconductor has sustained as a result of NVIDIA's infringement of the '269  
15 patent, including without limitation and/or not less than a reasonable royalty.

16 **COUNT VI – INFRINGEMENT OF U.S. PATENT NO. 8,049,340**

17 **(DELL)**

18 109. Bell Semiconductor re-alleges and incorporates by reference the  
19 allegations of the foregoing paragraphs as if fully set forth herein.

20 110. On information and belief, Dell has and continues to directly infringe,  
21 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
22 or more claims of the '340 patent by making, using, offering to sell, and/or selling  
23 within the United States, or importing into the United States, one or more  
24 semiconductor devices in the United States. By way of example and not limitation,  
25 the products giving rise to claims of infringement include graphics cards with the  
26 NVIDIA TU106, TU116, and TU117 GPUs and computers incorporating such cards,  
27 including but not limited to the Dell Precision 5540 incorporating the Quadro T1000  
28 graphics card.



1 111. At least as of the date of this Complaint, Dell’s infringement of the ’340  
2 patent is and continues to be done with knowledge of the ’340 patent and with  
3 knowledge of Bell Semiconductor’s contention that Dell is infringing the ’340 patent.  
4 Dell’s infringement of the ’340 patent is thus willful and deliberate, entitling Bell  
5 Semiconductor to enhanced damages and attorneys’ fees incurred in prosecuting this  
6 action under 35 U.S.C. § 285.

7 112. Bell Semiconductor has been damaged by Dell’s infringement of the  
8 ’340 patent and will continue to be damaged unless Dell is enjoined by this Court.  
9 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
10 there is no adequate remedy at law. The balance of hardships favors Bell  
11 Semiconductor, and public interest is not disserved by an injunction.

12 113. Bell Semiconductor is entitled to recover from Dell all damages that Bell  
13 Semiconductor has sustained as a result of Dell’s infringement of the ’340 patent,  
14 including without limitation and/or not less than a reasonable royalty.

15 **COUNT VII – INFRINGEMENT OF U.S. PATENT NO. 8,288,269**

16 **(DELL)**

17 114. Bell Semiconductor re-alleges and incorporates by reference the  
18 allegations of the foregoing paragraphs as if fully set forth herein.

19 115. On information and belief, Dell has and continues to directly infringe,  
20 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
21 or more claims of the ’269 patent by making, using, offering to sell, and/or selling  
22 within the United States, or importing into the United States, one or more  
23 semiconductor devices in the United States. By way of example and not limitation,  
24 the products giving rise to claims of infringement include graphics cards with the  
25 NVIDIA TU106, TU116, and TU117 GPUs and computers incorporating such cards,  
26 including but not limited to the Dell Precision 5540 incorporating the Quadro T1000  
27 graphics card.  
28

1 116. At least as of the date of this Complaint, Dell’s infringement of the ’269  
2 patent is and continues to be done with knowledge of the ’269 patent and with  
3 knowledge of Bell Semiconductor’s contention that Dell is infringing the ’269 patent.  
4 Dell’s infringement of the ’269 patent is thus willful and deliberate, entitling Bell  
5 Semiconductor to enhanced damages and attorneys’ fees incurred in prosecuting this  
6 action under 35 U.S.C. § 285.

7 117. Bell Semiconductor has been damaged by Dell’s infringement of the  
8 ’269 patent and will continue to be damaged unless Dell is enjoined by this Court.  
9 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
10 there is no adequate remedy at law. The balance of hardships favors Bell  
11 Semiconductor, and public interest is not disserved by an injunction.

12 118. Bell Semiconductor is entitled to recover from Dell all damages that Bell  
13 Semiconductor has sustained as a result of Dell’s infringement of the ’269 patent,  
14 including without limitation and/or not less than a reasonable royalty.

15 **COUNT VIII – INFRINGEMENT OF U.S. PATENT NO. 7,180,011**

16 **(DELL)**

17 119. Bell Semiconductor re-alleges and incorporates by reference the  
18 allegations of the foregoing paragraphs as if fully set forth herein.

19 120. On information and belief, Dell has and continues to directly infringe,  
20 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
21 or more claims of the ’011 patent by making, using, offering to sell, and/or selling  
22 within the United States, or importing into the United States, one or more  
23 semiconductor devices. By way of example, the products giving rise to claims of  
24 infringement include graphics cards with the NVIDIA GA104 GPUs and computers  
25 incorporating such cards, including but not limited to the Dell RTX 3070 OEM  
26 graphics card and the Alienware Aurora R10 incorporating the GeForce RTX 3060  
27 graphics card.  
28

1 121. At least as of the date of this Complaint, Dell’s infringement of the ’011  
2 patent is and continues to be done with knowledge of the ’011 patent and with  
3 knowledge of Bell Semiconductor’s contention that Dell is infringing the ’011 patent.  
4 Dell’s infringement of the ’011 patent is thus willful and deliberate, entitling Bell  
5 Semiconductor to enhanced damages and attorneys’ fees incurred in prosecuting this  
6 action under 35 U.S.C. § 285.

7 122. Bell Semiconductor has been damaged by Dell’s infringement of the  
8 ’011 patent and will continue to be damaged unless Dell is enjoined by this Court.  
9 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
10 there is no adequate remedy at law. The balance of hardships favors Bell  
11 Semiconductor, and public interest is not disserved by an injunction.

12 123. Bell Semiconductor is entitled to recover from Dell all damages that Bell  
13 Semiconductor has sustained as a result of Dell’s infringement of the ’011 patent,  
14 including without limitation and/or not less than a reasonable royalty.

15 **COUNT IX – INFRINGEMENT OF U.S. PATENT NO. 7,646,091**

16 **(DELL)**

17 124. Bell Semiconductor re-alleges and incorporates by reference the  
18 allegations of the foregoing paragraphs as if fully set forth herein.

19 125. On information and belief, Dell has and continues to directly infringe,  
20 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
21 or more claims of the ’091 patent by making, using, offering to sell, and/or selling  
22 within the United States, or importing into the United States one or more  
23 semiconductor devices. By way of example, the products giving rise to claims of  
24 infringement include the Dell PowerEdge R750XA Server incorporating the  
25 NVIDIA/Mellanox ConnectX-4 Lx Ethernet chip.

26 126. At least as of the date of this Complaint, Dell’s infringement of the ’091  
27 patent is and continues to be done with knowledge of the ’091 patent and with  
28 knowledge of Bell Semiconductor’s contention that Dell is infringing the ’091 patent.

1 Dell's infringement of the '091 patent is thus willful and deliberate, entitling Bell  
2 Semiconductor to enhanced damages and attorneys' fees incurred in prosecuting this  
3 action under 35 U.S.C. § 285.

4 127. Bell Semiconductor has been damaged by Dell's infringement of the  
5 '091 patent and will continue to be damaged unless Dell is enjoined by this Court.  
6 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
7 there is no adequate remedy at law. The balance of hardships favors Bell  
8 Semiconductor, and public interest is not disserved by an injunction.

9 128. Bell Semiconductor is entitled to recover from Dell all damages that Bell  
10 Semiconductor has sustained as a result of Dell's infringement of the '091 patent,  
11 including without limitation and/or not less than a reasonable royalty.

12 **COUNT X – INFRINGEMENT OF U.S. PATENT NO. 8,049,340**

13 **(GIGABYTE)**

14 129. Bell Semiconductor re-alleges and incorporates by reference the  
15 allegations of the foregoing paragraphs as if fully set forth herein.

16 130. On information and belief, Gigabyte has and continues to directly  
17 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
18 271(a) one or more claims of the '340 patent by making, using, offering to sell, and/or  
19 selling within the United States, or importing into the United States, one or more  
20 semiconductor devices. By way of example and not limitation, the products giving  
21 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
22 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
23 limited to the Gigabyte GTX 1650 OC graphics card and the AERO 15 OLED SA-  
24 7US5130SH PC incorporating the GeForce GTX 1660 Ti graphics card.

25 131. At least as of the date of this Complaint, Gigabyte's infringement of the  
26 '340 patent continues to be done with knowledge of the '340 patent and with  
27 knowledge of Bell Semiconductor's contention that Gigabyte is infringing the '340  
28 patent. Gigabyte's infringement of the '340 patent is thus willful and deliberate,

1 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
2 prosecuting this action under 35 U.S.C. § 285.

3 132. Bell Semiconductor has been damaged by Gigabyte's infringement of the  
4 '340 patent and will continue to be damaged unless Gigabyte is enjoined by this  
5 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
6 which there is no adequate remedy at law. The balance of hardships favors Bell  
7 Semiconductor, and public interest is not disserved by an injunction.

8 133. Bell Semiconductor is entitled to recover from Gigabyte all damages that  
9 Bell Semiconductor has sustained as a result of Gigabyte's infringement of the '340  
10 patent, including without limitation and/or not less than a reasonable royalty.

11 **COUNT XI – INFRINGEMENT OF U.S. PATENT NO. 8,288,269**

12 **(GIGABYTE)**

13 134. Bell Semiconductor re-alleges and incorporates by reference the  
14 allegations of the foregoing paragraphs as if fully set forth herein.

15 135. On information and belief, Gigabyte has and continues to directly  
16 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
17 271(a) one or more claims of the '269 patent by making, using, offering to sell, and/or  
18 selling within the United States, or importing into the United States, one or more  
19 semiconductor devices. By way of example and not limitation, the products giving  
20 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
21 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
22 limited to the Gigabyte GTX 1650 OC graphics card and the AERO 15 OLED SA-  
23 7US5130SH PC incorporating the GeForce GTX 1660 Ti graphics card.

24 136. At least as of the date of this Complaint, Gigabyte's infringement of the  
25 '269 patent is and continues to be done with knowledge of the '269 patent and with  
26 knowledge of Bell Semiconductor's contention that Gigabyte is infringing the '269  
27 patent. Gigabyte's infringement of the '269 patent is thus willful and deliberate,  
28

1 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
2 prosecuting this action under 35 U.S.C. § 285.

3 137. Bell Semiconductor has been damaged by Gigabyte's infringement of the  
4 '269 patent and will continue to be damaged unless Gigabyte is enjoined by this  
5 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
6 which there is no adequate remedy at law. The balance of hardships favors Bell  
7 Semiconductor, and public interest is not disserved by an injunction.

8 138. Bell Semiconductor is entitled to recover from Gigabyte all damages that  
9 Bell Semiconductor has sustained as a result of Gigabyte's infringement of the '269  
10 patent, including without limitation and/or not less than a reasonable royalty.

11 **COUNT XII – INFRINGEMENT OF U.S. PATENT NO. 7,180,011**

12 **(GIGABYTE)**

13 139. Bell Semiconductor re-alleges and incorporates by reference the  
14 allegations of the foregoing paragraphs as if fully set forth herein.

15 140. On information and belief, Gigabyte has and continues to directly  
16 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
17 271(a) one or more claims of the '011 patent by making, using, offering to sell, and/or  
18 selling within the United States, or importing into the United States, one or more  
19 semiconductor devices. By way of example, the products giving rise to claims of  
20 infringement include graphics cards with the NVIDIA GA104 GPUs and computers  
21 incorporating such cards, including but not limited to the Gigabyte RTX 3070 Eagle  
22 graphics card and the Aorus 15 PC incorporating the GeForce RTX 3070 Ti graphics  
23 card.

24 141. At least as of the date of this Complaint, Gigabyte's infringement of the  
25 '011 patent is and continues to be done with knowledge of the '011 patent and with  
26 knowledge of Bell Semiconductor's contention that Gigabyte is infringing the '011  
27 patent. Gigabyte's infringement of the '011 patent is thus willful and deliberate,  
28

1 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
2 prosecuting this action under 35 U.S.C. § 285.

3 142. Bell Semiconductor has been damaged by Gigabyte's infringement of the  
4 '011 patent and will continue to be damaged unless Gigabyte is enjoined by this  
5 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
6 which there is no adequate remedy at law. The balance of hardships favors Bell  
7 Semiconductor, and public interest is not disserved by an injunction.

8 143. Bell Semiconductor is entitled to recover from Gigabyte all damages that  
9 Bell Semiconductor has sustained as a result of Gigabyte's infringement of the '011  
10 patent, including without limitation and/or not less than a reasonable royalty.

11 **COUNT XIII – INFRINGEMENT OF U.S. PATENT NO. 7,646,091**

12 **(GIGABYTE)**

13 144. Bell Semiconductor re-alleges and incorporates by reference the  
14 allegations of the foregoing paragraphs as if fully set forth herein.

15 145. On information and belief, Gigabyte has and continues to directly  
16 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
17 271(a) one or more claims of the '091 patent by making, using, offering to sell, and/or  
18 selling within the United States, or importing into the United States one or more  
19 semiconductor devices. By way of example, the products giving rise to claims of  
20 infringement include the Gigabyte G292 GPU Server incorporating the  
21 NVIDIA/Mellanox ConnectX-4 Lx Ethernet chip.

22 146. At least as of the date of this Complaint, Gigabyte's infringement of the  
23 '091 patent is and continues to be done with knowledge of the '091 patent and with  
24 knowledge of Bell Semiconductor's contention that Gigabyte is infringing the '091  
25 patent. Gigabyte's infringement of the '091 patent is thus willful and deliberate,  
26 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
27 prosecuting this action under 35 U.S.C. § 285.

1 147. Bell Semiconductor has been damaged by Gigabyte’s infringement of the  
2 ’091 patent and will continue to be damaged unless Gigabyte is enjoined by this  
3 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
4 which there is no adequate remedy at law. The balance of hardships favors Bell  
5 Semiconductor, and public interest is not disserved by an injunction.

6 148. Bell Semiconductor is entitled to recover from Gigabyte all damages that  
7 Bell Semiconductor has sustained as a result of Gigabyte’s infringement of the ’091  
8 patent, including without limitation and/or not less than a reasonable royalty.

9 **COUNT XIV – INFRINGEMENT OF U.S. PATENT NO. 8,049,340**

10 **(MSI)**

11 149. Bell Semiconductor re-alleges and incorporates by reference the  
12 allegations of the foregoing paragraphs as if fully set forth herein.

13 150. On information and belief, MSI has and continues to directly infringe,  
14 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
15 or more claims of the ’340 patent by making, using, offering to sell, and/or selling  
16 within the United States, or importing into the United States, one or more  
17 semiconductor devices. By way of example and not limitation, the products giving  
18 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
19 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
20 limited to the MSI GTX 1650 GAMING graphics card and the Trident X  
21 JOJO202106241207 PC incorporating the GeForce GTX 1660 SUPER graphics card.

22 151. At least as of the date of this Complaint, MSI’s infringement of the ’340  
23 patent is and continues to be done with knowledge of the ’340 patent and with  
24 knowledge of Bell Semiconductor’s contention that MSI is infringing the ’340 patent.  
25 MSI’s infringement of the ’340 patent is thus willful and deliberate, entitling Bell  
26 Semiconductor to enhanced damages and attorneys’ fees incurred in prosecuting this  
27 action under 35 U.S.C. § 285.  
28



1 152. Bell Semiconductor has been damaged by MSI's infringement of the  
2 '340 patent and will continue to be damaged unless MSI is enjoined by this Court.  
3 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
4 there is no adequate remedy at law. The balance of hardships favors Bell  
5 Semiconductor, and public interest is not disserved by an injunction.

6 153. Bell Semiconductor is entitled to recover from MSI all damages that Bell  
7 Semiconductor has sustained as a result of MSI's infringement of the '340 patent,  
8 including without limitation and/or not less than a reasonable royalty.

9 **COUNT XV – INFRINGEMENT OF U.S. PATENT NO. 8,288,269**

10 **(MSI)**

11 154. Bell Semiconductor re-alleges and incorporates by reference the  
12 allegations of the foregoing paragraphs as if fully set forth herein.

13 155. On information and belief, MSI has and continues to directly infringe,  
14 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
15 or more claims of the '269 patent by making, using, offering to sell, and/or selling  
16 within the United States, or importing into the United States, one or more  
17 semiconductor devices. By way of example and not limitation, the products giving  
18 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
19 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
20 limited to the MSI GTX 1650 GAMING graphics card and the Trident X  
21 JOJO202106241207 PC incorporating the GeForce GTX 1660 SUPER graphics card.

22 156. At least as of the date of this Complaint, MSI's infringement of the '269  
23 patent is and continues to be done with knowledge of the '269 patent and with  
24 knowledge of Bell Semiconductor's contention that MSI is infringing the '269 patent.  
25 MSI's infringement of the '269 patent is thus willful and deliberate, entitling Bell  
26 Semiconductor to enhanced damages and attorneys' fees incurred in prosecuting this  
27 action under 35 U.S.C. § 285.  
28

1 157. Bell Semiconductor has been damaged by MSI's infringement of the  
2 '269 patent and will continue to be damaged unless MSI is enjoined by this Court.  
3 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
4 there is no adequate remedy at law. The balance of hardships favors Bell  
5 Semiconductor, and public interest is not disserved by an injunction.

6 158. Bell Semiconductor is entitled to recover from MSI all damages that Bell  
7 Semiconductor has sustained as a result of MSI's infringement of the '269 patent,  
8 including without limitation and/or not less than a reasonable royalty.

9 **COUNT XVI – INFRINGEMENT OF U.S. PATENT NO. 7,180,011**

10 **(MSI)**

11 159. Bell Semiconductor re-alleges and incorporates by reference the  
12 allegations of the foregoing paragraphs as if fully set forth herein.

13 160. On information and belief, MSI has and continues to directly infringe,  
14 either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. § 271(a) one  
15 or more claims of the '011 patent by making, using, offering to sell, and/or selling  
16 within the United States, or importing into the United States, one or more  
17 semiconductor devices. By way of example and not limitation, the products giving  
18 rise to claims of infringement include graphics cards with the NVIDIA GA104 GPUs  
19 and computers incorporating such cards, including but not limited to the MSI RTX  
20 3070 SUPRIM graphics card and the Titan GT77 PC incorporating the GeForce RTX  
21 3080 Ti graphics card.

22 161. At least as of the date of this Complaint, MSI's infringement of the '011  
23 patent is and continues to be done with knowledge of the '011 patent and with  
24 knowledge of Bell Semiconductor's contention that MSI is infringing the '011 patent.  
25 MSI's infringement of the '011 patent is thus willful and deliberate, entitling Bell  
26 Semiconductor to enhanced damages and attorneys' fees incurred in prosecuting this  
27 action under 35 U.S.C. § 285.  
28

1 162. Bell Semiconductor has been damaged by MSI's infringement of the  
2 '011 patent and will continue to be damaged unless MSI is enjoined by this Court.  
3 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
4 there is no adequate remedy at law. The balance of hardships favors Bell  
5 Semiconductor, and public interest is not disserved by an injunction.  
6 Bell Semiconductor is entitled to recover from MSI all damages that Bell  
7 Semiconductor has sustained as a result of MSI's infringement of the '011 patent,  
8 including without limitation and/or not less than a reasonable royalty.

9 **COUNT XVI – INFRINGEMENT OF U.S. PATENT NO. 7,345,245**

10 **(NINTENDO)**

11 163. Bell Semiconductor re-alleges and incorporates by reference the  
12 allegations of the foregoing paragraphs as if fully set forth herein.

13 164. On information and belief, Nintendo has and continues to directly  
14 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
15 271(a) one or more claims of the '245 patent by making, using, offering to sell, and/or  
16 selling within the United States, or importing into the United States, one or more  
17 semiconductor devices. By way of example and not limitation, the products giving  
18 rise to claims of infringement include products incorporating the ODNX01 and  
19 ODNX02 series SoCs, including but not limited to the Nintendo Switch.

20 165. At least as of the date of this Complaint, Nintendo's infringement of the  
21 '245 patent is and continues to be done with knowledge of the '245 patent and with  
22 knowledge of Bell Semiconductor's contention that Nintendo is infringing the '245  
23 patent. Nintendo's infringement of the '245 patent is thus willful and deliberate,  
24 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
25 prosecuting this action under 35 U.S.C. § 285.

26 166. Bell Semiconductor has been damaged by Nintendo's infringement of the  
27 '245 patent and will continue to be damaged unless Nintendo is enjoined by this  
28 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for

1 which there is no adequate remedy at law. The balance of hardships favors Bell  
2 Semiconductor, and public interest is not disserved by an injunction.

3 167. Bell Semiconductor is entitled to recover from Nintendo all damages that  
4 Bell Semiconductor has sustained as a result of Nintendo's infringement of the '245  
5 patent, including without limitation and/or not less than a reasonable royalty.

6 **COUNT XIV – INFRINGEMENT OF U.S. PATENT NO. 8,049,340**

7 **(BEST BUY)**

8 168. Bell Semiconductor re-alleges and incorporates by reference the  
9 allegations of the foregoing paragraphs as if fully set forth herein.

10 169. On information and belief, Best Buy has and continues to directly  
11 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
12 271(a) one or more claims of the '340 patent by making, using, offering to sell, and/or  
13 selling within the United States, or importing into the United States, one or more  
14 semiconductor devices. By way of example and not limitation, the products giving  
15 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
16 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
17 limited to GTX 1650 graphics cards and the Lenovo 16" ThinkPad P1 Gen 4 Laptop  
18 (SKU 6505401) incorporating an NVIDIA Quadro T1000 graphics card.

19 170. At least as of the date of this Complaint, Best Buy's infringement of the  
20 '340 patent is and continues to be done with knowledge of the '340 patent and with  
21 knowledge of Bell Semiconductor's contention that Best Buy is infringing the '340  
22 patent. Best Buy's infringement of the '340 patent is thus willful and deliberate,  
23 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
24 prosecuting this action under 35 U.S.C. § 285.

25 171. Bell Semiconductor has been damaged by Best Buy's infringement of the  
26 '340 patent and will continue to be damaged unless Best Buy is enjoined by this  
27 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
28

1 which there is no adequate remedy at law. The balance of hardships favors Bell  
2 Semiconductor, and public interest is not disserved by an injunction.

3 172. Bell Semiconductor is entitled to recover from Best Buy all damages that  
4 Bell Semiconductor has sustained as a result of Best Buy's infringement of the '340  
5 patent, including without limitation and/or not less than a reasonable royalty.

6 **COUNT XV – INFRINGEMENT OF U.S. PATENT NO. 8,288,269**

7 **(BEST BUY)**

8 173. Bell Semiconductor re-alleges and incorporates by reference the  
9 allegations of the foregoing paragraphs as if fully set forth herein.

10 174. On information and belief, Best Buy has and continues to directly  
11 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
12 271(a) one or more claims of the '269 patent by making, using, offering to sell, and/or  
13 selling within the United States, or importing into the United States, one or more  
14 semiconductor devices. By way of example and not limitation, the products giving  
15 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
16 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
17 limited to GTX 1650 graphics cards and the Lenovo 16" ThinkPad P1 Gen 4 Laptop  
18 (SKU 6505401) incorporating an NVIDIA Quadro T1000 graphics card.

19 175. At least as of the date of this Complaint, Best Buy's infringement of the  
20 '269 patent is and continues to be done with knowledge of the '269 patent and with  
21 knowledge of Bell Semiconductor's contention that Best Buy is infringing the '269  
22 patent. Best Buy's infringement of the '269 patent is thus willful and deliberate,  
23 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
24 prosecuting this action under 35 U.S.C. § 285.

25 176. Bell Semiconductor has been damaged by Best Buy's infringement of the  
26 '269 patent and will continue to be damaged unless Best Buy is enjoined by this  
27 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
28

1 which there is no adequate remedy at law. The balance of hardships favors Bell  
2 Semiconductor, and public interest is not disserved by an injunction.

3 177. Bell Semiconductor is entitled to recover from Best Buy all damages that  
4 Bell Semiconductor has sustained as a result of Best Buy's infringement of the '269  
5 patent, including without limitation and/or not less than a reasonable royalty.

6 **COUNT XVI – INFRINGEMENT OF U.S. PATENT NO. 7,180,011**

7 **(BEST BUY)**

8 178. Bell Semiconductor re-alleges and incorporates by reference the  
9 allegations of the foregoing paragraphs as if fully set forth herein.

10 179. On information and belief, Best Buy has and continues to directly  
11 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
12 271(a) one or more claims of the '011 patent by making, using, offering to sell, or  
13 selling within the United States, or importing into the United States, one or more  
14 semiconductor devices. By way of example and not limitation, the products giving  
15 rise to claims of infringement include graphics cards with the NVIDIA GA104 GPUs  
16 and computers incorporating such cards, including but not limited to GeForce RTX  
17 3070 graphics cards (e.g., SKU 6480307) and the Precision 7000 17.3" Laptop (SKU  
18 6477524) incorporating an NVIDIA RTX A3000 graphics card.

19 180. At least as of the date of this Complaint, Best Buy's infringement of the  
20 '011 patent is and continues to be done with knowledge of the '011 patent and with  
21 knowledge of Bell Semiconductor's contention that Best Buy is infringing the '011  
22 patent. Best Buy's infringement of the '011 patent is thus willful and deliberate,  
23 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
24 prosecuting this action under 35 U.S.C. § 285.

25 181. Bell Semiconductor has been damaged by Best Buy's infringement of the  
26 '011 patent and will continue to be damaged unless Best Buy is enjoined by this  
27 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
28

1 which there is no adequate remedy at law. The balance of hardships favors Bell  
2 Semiconductor, and public interest is not disserved by an injunction.

3 182. Bell Semiconductor is entitled to recover from Best Buy all damages that  
4 Bell Semiconductor has sustained as a result of Best Buy's infringement of the '011  
5 patent, including without limitation and/or not less than a reasonable royalty.

6 **COUNT XVII – INFRINGEMENT OF U.S. PATENT NO. 7,345,245**

7 **(BEST BUY)**

8 183. Bell Semiconductor re-alleges and incorporates by reference the  
9 allegations of the foregoing paragraphs as if fully set forth herein.

10 184. On information and belief, Best Buy has and continues to directly  
11 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
12 271(a) one or more claims of the '245 patent by making, using, offering to sell, and/or  
13 selling within the United States, or importing into the United States, one or more  
14 semiconductor devices. By way of example and not limitation, the products giving  
15 rise to claims of infringement include products incorporating the ODNX01 and  
16 ODNX02 series SoCs, including but not limited to the Nintendo Switch (SKU  
17 6364255).

18 185. At least as of the date of this Complaint, Best Buy's infringement of the  
19 '245 patent continues to be done with knowledge of the '245 patent and with  
20 knowledge of Bell Semiconductor's contention that Best Buy is infringing the '245  
21 patent. Best Buy's infringement of the '245 patent is thus willful and deliberate,  
22 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
23 prosecuting this action under 35 U.S.C. § 285.

24 186. Bell Semiconductor has been damaged by Best Buy's infringement of the  
25 '245 patent and will continue to be damaged unless Best Buy is enjoined by this  
26 Court. Bell Semiconductor has suffered and continues to suffer irreparable injury for  
27 which there is no adequate remedy at law. The balance of hardships favors Bell  
28 Semiconductor, and public interest is not disserved by an injunction.

1 187. Bell Semiconductor is entitled to recover from Best Buy all damages that  
2 Bell Semiconductor has sustained as a result of Best Buy's infringement of the '245  
3 patent, including without limitation and/or not less than a reasonable royalty.

4 **COUNT XVIII – INFRINGEMENT OF U.S. PATENT NO. 8,049,340**

5 **(AMAZON)**

6 188. Bell Semiconductor re-alleges and incorporates by reference the  
7 allegations of the foregoing paragraphs as if fully set forth herein.

8 189. On information and belief, Amazon has and continues to directly  
9 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
10 271(a) one or more claims of the '340 patent by making, using, offering to sell, and/or  
11 selling within the United States, or importing into the United States, one or more  
12 semiconductor devices. By way of example and not limitation, the products giving  
13 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
14 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
15 limited to NVIDIA GeForce GTX 1650 graphics cards and the HP Pavilion Gaming  
16 Desktop (TG01-1120) incorporating such a card.

17 190. At least as of the date of this Complaint, Amazon's infringement of the  
18 '340 patent is and continues to be done with knowledge of the '340 patent and with  
19 knowledge of Bell Semiconductor's contention that Amazon is infringing the '340  
20 patent. Amazon's infringement of the '340 patent is thus willful and deliberate,  
21 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
22 prosecuting this action under 35 U.S.C. § 285.

23 191. Bell Semiconductor has been damaged by Amazon's infringement of the  
24 '340 patent and will continue to be damaged unless Amazon is enjoined by this Court.  
25 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
26 there is no adequate remedy at law. The balance of hardships favors Bell  
27 Semiconductor, and public interest is not disserved by an injunction.

28



1 192. Bell Semiconductor is entitled to recover from Amazon all damages that  
2 Bell Semiconductor has sustained as a result of Amazon’s infringement of the ’340  
3 patent, including without limitation and/or not less than a reasonable royalty.

4 **COUNT XIX – INFRINGEMENT OF U.S. PATENT NO. 8,288,269**

5 **(AMAZON)**

6 193. Bell Semiconductor re-alleges and incorporates by reference the  
7 allegations of the foregoing paragraphs as if fully set forth herein.

8 194. On information and belief, Amazon has and continues to directly  
9 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
10 271(a) one or more claims of the ’269 patent by making, using, offering to sell, and/or  
11 selling within the United States, or importing into the United States, one or more  
12 semiconductor devices. By way of example and not limitation, the products giving  
13 rise to claims of infringement include graphics cards with the NVIDIA TU106,  
14 TU116, and TU117 GPUs and computers incorporating such cards, including but not  
15 limited to NVIDIA GeForce GTX 1650 graphics cards and the HP Pavilion Gaming  
16 Desktop (TG01-1120) incorporating such a card.

17 195. At least as of the date of this Complaint, Amazon’s infringement of the  
18 ’269 patent is and continues to be done with knowledge of the ’269 patent and with  
19 knowledge of Bell Semiconductor’s contention that Amazon is infringing the ’269  
20 patent. Amazon’s infringement of the ’269 patent is thus willful and deliberate,  
21 entitling Bell Semiconductor to enhanced damages and attorneys’ fees incurred in  
22 prosecuting this action under 35 U.S.C. § 285.

23 196. Bell Semiconductor has been damaged by Amazon’s infringement of the  
24 ’269 patent and will continue to be damaged unless Amazon is enjoined by this Court.  
25 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
26 there is no adequate remedy at law. The balance of hardships favors Bell  
27 Semiconductor, and public interest is not disserved by an injunction.

28

1 197. Bell Semiconductor is entitled to recover from Amazon all damages that  
2 Bell Semiconductor has sustained as a result of Amazon’s infringement of the ’269  
3 patent, including without limitation and/or not less than a reasonable royalty.

4 **COUNT XX – INFRINGEMENT OF U.S. PATENT NO. 7,180,011**

5 **(AMAZON)**

6 198. Bell Semiconductor re-alleges and incorporates by reference the  
7 allegations of the foregoing paragraphs as if fully set forth herein.

8 199. On information and belief, Amazon has and continues to directly  
9 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
10 271(a) one or more claims of the ’011 patent by making, using, offering to sell, and/or  
11 selling within the United States, or importing into the United States, one or more  
12 semiconductor devices. By way of example and not limitation, the products giving  
13 rise to claims of infringement include graphics cards with the NVIDIA GA104 GPUs,  
14 and computers incorporating such cards, including but not limited to NVIDIA  
15 GeForce RTX 3070 graphics cards and the Acer Predator Orion 3000 computer  
16 (Model Number DG.E2GAA.00A) incorporating such a card.

17 200. At least as of the date of this Complaint, Amazon’s infringement of the  
18 ’011 patent is and continues to be done with knowledge of the ’011 patent and with  
19 knowledge of Bell Semiconductor’s contention that Amazon is infringing the ’011  
20 patent. Amazon’s infringement of the ’011 patent is thus willful and deliberate,  
21 entitling Bell Semiconductor to enhanced damages and attorneys’ fees incurred in  
22 prosecuting this action under 35 U.S.C. § 285.

23 201. Bell Semiconductor has been damaged by Amazon’s infringement of the  
24 ’011 patent and will continue to be damaged unless Amazon is enjoined by this Court.  
25 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
26 there is no adequate remedy at law. The balance of hardships favors Bell  
27 Semiconductor, and public interest is not disserved by an injunction.

28

1 202. Bell Semiconductor is entitled to recover from Amazon all damages that  
2 Bell Semiconductor has sustained as a result of Amazon’s infringement of the ’011  
3 patent, including without limitation and/or not less than a reasonable royalty.

4 **COUNT XXI – INFRINGEMENT OF U.S. PATENT NO. 7,345,245**

5 **(AMAZON)**

6 203. Bell Semiconductor re-alleges and incorporates by reference the  
7 allegations of the foregoing paragraphs as if fully set forth herein.

8 204. On information and belief, Amazon has and continues to directly  
9 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
10 271(a) one or more claims of the ’245 patent by making, using, offering to sell, and/or  
11 selling within the United States, or importing into the United States, one or more  
12 semiconductor devices. By way of example and not limitation, the products giving  
13 rise to claims of infringement include products incorporating the ODNX01 and  
14 ODNX02 system-on-chip devices, including but not limited to the Nintendo Switch.

15 205. At least as of the date of this Complaint, Amazon’s infringement of the  
16 ’245 patent is and continues to be done with knowledge of the ’245 patent and with  
17 knowledge of Bell Semiconductor’s contention that Amazon is infringing the ’245  
18 patent. Amazon’s infringement of the ’245 patent is thus willful and deliberate,  
19 entitling Bell Semiconductor to enhanced damages and attorneys’ fees incurred in  
20 prosecuting this action under 35 U.S.C. § 285.

21 206. Bell Semiconductor has been damaged by Amazon’s infringement of the  
22 ’245 patent and will continue to be damaged unless Amazon is enjoined by this Court.  
23 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
24 there is no adequate remedy at law. The balance of hardships favors Bell  
25 Semiconductor, and public interest is not disserved by an injunction.

26 207. Bell Semiconductor is entitled to recover from Amazon all damages that  
27 Bell Semiconductor has sustained as a result of Amazon’s infringement of the ’245  
28 patent, including without limitation and/or not less than a reasonable royalty.

1                   **COUNT XXII – INFRINGEMENT OF U.S. PATENT NO. 7,646,091**  
2   **(AMAZON)**

3           208. Bell Semiconductor re-alleges and incorporates by reference the  
4 allegations of the foregoing paragraphs as if fully set forth herein.

5           209. On information and belief, Amazon has and continues to directly  
6 infringe, either literally or under the doctrine of equivalents, pursuant to 35 U.S.C. §  
7 271(a) one or more claims of the '091 patent by making, using, offering to sell, and/or  
8 selling within the United States, or importing into the United States one or more  
9 semiconductor devices. By way of example, the products giving rise to claims of  
10 infringement include ConnectX-4 Lx, ConnectX-5, ConnectX-6, and ConnectX-7  
11 ethernet chips and products such as ethernet adapters incorporating such chips. On  
12 information and belief, Amazon additionally uses one or more servers incorporating  
13 infringing ethernet adapters, including but not limited to its installation at an AWS  
14 Local Zone in Los Angeles.

15           210. At least as of the date of this Complaint, Amazon's infringement of the  
16 '091 patent is and continues to be done with knowledge of the '091 patent and with  
17 knowledge of Bell Semiconductor's contention that Amazon is infringing the '091  
18 patent. Amazon's infringement of the '091 patent is thus willful and deliberate,  
19 entitling Bell Semiconductor to enhanced damages and attorneys' fees incurred in  
20 prosecuting this action under 35 U.S.C. § 285.

21           211. Bell Semiconductor has been damaged by Amazon's infringement of the  
22 '091 patent and will continue to be damaged unless Amazon is enjoined by this Court.  
23 Bell Semiconductor has suffered and continues to suffer irreparable injury for which  
24 there is no adequate remedy at law. The balance of hardships favors Bell  
25 Semiconductor, and public interest is not disserved by an injunction.

26           212. Bell Semiconductor is entitled to recover from Amazon all damages that  
27 Bell Semiconductor has sustained as a result of Amazon's infringement of the '091  
28 patent, including without limitation and/or not less than a reasonable royalty.

1 **PRAYER FOR RELIEF**

2 WHEREFORE, Bell Semiconductor respectfully requests that this Court enter  
3 judgment in its favor as follows and award Bell Semiconductor the following relief:

4 (a) a judgment declaring that each Defendant has, respectively,  
5 infringed one or more claims of the Asserted Patents in this litigation  
6 pursuant to 35 U.S.C. § 271, *et seq.*;

7 (b) an award of damages adequate to compensate Bell Semiconductor  
8 for infringement of the Asserted Patents by each Defendant, respectively,  
9 in an amount to be proven at trial, including supplemental post-verdict  
10 damages until such time as each Defendant ceases its infringing conduct;

11 (c) a permanent injunction, pursuant to 35 U.S.C. § 283, prohibiting  
12 each Defendant and its officers, directors, employees, agents, consultants,  
13 contractors, suppliers, distributors, all affiliated entities, and all others  
14 acting in privity with each Defendant, from committing further acts of  
15 infringement;

16 (d) a judgment requiring each Defendant to make an accounting of  
17 damages resulting from its infringement of the respective Asserted  
18 Patents;

19 (e) enhanced damages for willful infringement;

20 (f) the costs of this action, as well as attorneys' fees as provided by 35  
21 U.S.C. § 285;

22 (g) pre-judgment and post-judgment interest at the maximum amount  
23 permitted by law;

24 (h) all other relief, in law or equity, to which Bell Semiconductor is  
25 entitled.

26 **DEMAND FOR JURY TRIAL**

27 Plaintiff hereby demands a jury trial for all issues so triable.

28

1 Dated: August 12, 2022

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13 \*Pro Hac Application forthcoming  
14 *Attorneys for Plaintiff Bell Semiconductor,*  
15 *LLC*

16  
17  
18 Exhibits:

- 19 • Ex. A – '340 patent
- 20 • Ex. B – '269 patent
- 21 • Ex. C – '091 patent
- 22 • Ex. D – '245 patent
- 23 • Ex. E – '340 Claim Chart
- 24 • Ex. F – '269 Claim Chart
- 25 • Ex. G – '091 Claim Chart
- 26 • Ex. H – '245 Claim Chart
- 27 • Ex. I – '011 patent
- 28 • Ex. J – '011 Claim Chart
- Ex. K – Best Buy Store Directory (California locations)
- Ex. L – Best Buy Store Directory (Los Angeles, California locations)