

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TYLER DIVISION**

Avago Technologies ECBU IP (Singapore)  
Pte. Ltd., Avago Technologies General IP  
(Singapore) Pte. Ltd., Avago Technologies  
Trading Ltd., and Avago Technologies U.S.,  
Inc.

Plaintiffs,

v.

STMicroelectronics, Inc. and  
STMicroelectronics N.V.

Defendants.

Civil Action No. 6:10-cv-92-LED

JURY

**FIRST SUPPLEMENTAL THIRD AMENDED COMPLAINT  
FOR PATENT INFRINGEMENT**

Plaintiffs Avago Technologies ECBU IP (Singapore) Pte. Ltd., Avago Technologies General IP (Singapore) Pte. Ltd., Avago Technologies Trading Ltd., and Avago Technologies U.S., Inc. (collectively, “Avago”) file this first supplemental third amended complaint for patent infringement against STMicroelectronics, Inc. and STMicroelectronics N.V. (collectively, “STMicroelectronics” or “Defendants”) and state as follows:

**THE PARTIES**

1. Plaintiff Avago Technologies ECBU IP (Singapore) Pte., Ltd. is a Singapore corporation, having a place of business at 1 Yishun Avenue 7, Singapore 768923.
2. Plaintiff Avago Technologies General IP (Singapore) Pte. Ltd. is a Singapore corporation, having a place of business at 1 Yishun Avenue 7, Singapore 768923.

3. Plaintiff Avago Technologies Trading Ltd. is a Mauritius corporation, having a place of business at 4<sup>th</sup> Floor, IBL House, Caudan, Port Louis, Mauritius.

4. Plaintiff Avago Technologies U.S., Inc., is a corporation organized under the laws of Delaware with its principal place of business at 350 W. Trimble Road, San Jose, California, 95131.

5. Upon information and belief, Defendant STMicroelectronics, Inc. is a corporation organized and existing under the laws of Delaware with a principal place of business at 1310 Electronics Drive, Carrollton, Texas 75006.

6. Upon information and belief, Defendant STMicroelectronics N.V. is a Netherlands corporation with a principal place of business at 39, Chermin du Champ-des-Filles, 1228 Plan-les-Ouates, Geneva, Switzerland.

7. On information and belief, STMicroelectronics, Inc. and STMicroelectronics N.V. have directly infringed, actively induced infringement of, and/or contributorily infringed United States Patent Nos. 5,686,720, 7,652,661, 7,643,007, 6,172,354 and 7,126,585 (“the Patents-In-Suit” or “the Asserted Patents”) by making, using, selling, offering for sale, and/or importing into the United States and/or actively inducing others to make, use, sell, offer for sale, or import into the United States optical navigation sensors and/or optical navigation devices covered by one or more of the Asserted Patents.

#### **JURISDICTION AND VENUE**

8. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. Jurisdiction as to these claims is conferred on this Court by 28 U.S.C. §§ 1331 and 1338(a). Avago’s patent infringement claims arise under the United States Patent Laws, 35 U.S.C. § 1 *et seq.*

9. Venue is proper in the Eastern District of Texas under 28 U.S.C. §§ 1391 and 1400(b).

10. This Court has personal jurisdiction over STMicroelectronics, Inc. because it conducts and has conducted business within the State of Texas and within this judicial district. STMicroelectronics, Inc., directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises its products in the United States, the State of Texas, and within this judicial district. On information and belief, STMicroelectronics, Inc. has infringed the Patents-in-Suit by, *inter alia*, purposefully and voluntarily selling optical components, including without limitation its VT5366 Optical Navigational Sensor, to others for use in infringing products and/or has actively induced others to make, use, sell, offer for sale, or import into the United States infringing products containing such optical components with the expectation that those products will be purchased by consumers in the Eastern District of Texas. On information and belief, these infringing products have been and continue to be purchased by consumers in the Eastern District of Texas. On information and belief, consumers within this judicial district have purchased infringing products, such as the Steelseries Kinzu Optical Mouse Model PN 62011, containing ST Microelectronic's optical components at stores in this judicial district and/or have purchased the products containing infringing optical components via the internet, for example through online retailers, and have had the products shipped into this judicial district. On information and belief, STMicroelectronics, Inc. has thereby committed acts of patent infringement within the State of Texas and, more particularly, within the Eastern District of Texas. Furthermore, on information and belief, STMicroelectronics, Inc. has purposely availed itself of this forum by instituting actions within this judicial district against alleged infringers of its patents.

11. This Court has personal jurisdiction over STMicroelectronics N.V. because it conducts and has conducted business within the State of Texas and within this judicial district. STMicroelectronics N.V., directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises its products in the United States, the State of Texas, and within this judicial district. On information and belief, STMicroelectronics N.V. has infringed the Patents-in-Suit by, *inter alia*, purposefully and voluntarily selling optical components, including without limitation its VT5366 Optical Navigational Sensor, to others for use in infringing products and/or has actively induced others to make, use, sell, offer for sale, or import into the United States infringing products containing such optical components with the expectation that those products will be purchased by consumers in the Eastern District of Texas. On information and belief, these infringing products have been and continue to be purchased by consumers in the Eastern District of Texas. On information and belief, consumers within this judicial district have purchased infringing products, such as the Steelseries Kinzu Optical Mouse Model PN 62011, containing ST Microelectronic's optical components at stores in this judicial district and/or have purchased the products containing infringing optical components via the internet, for example through online retailers, and have had the products shipped into this judicial district. On information and belief, STMicroelectronics N.V. has thereby committed acts of patent infringement within the State of Texas and, more particularly, within the Eastern District of Texas. Furthermore, on information and belief, STMicroelectronics N.V. has willingly litigated patent issues in this judicial district before.

12. Upon information and belief, STMicroelectronics N.V., as the principal and/or alter ego of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or

indirectly involved in the infringing acts complained of herein and/or through its own actions, which include its exercise of control over the management, policies, and operations of its agent STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein, is making, using, selling, offering for sale and/or importing into the United States optical navigation sensors, including its VT5366 Optical Navigation Sensor, that infringe, literally and/or through equivalence, and/or are used to infringe, literally and/or through equivalence, directly and/or indirectly, claims of the Asserted Patents. Upon information and belief, STMicroelectronics N.V. is liable for these infringing acts and the infringing acts of STMicroelectronics, Inc.

### **BACKGROUND**

13. Avago is a worldwide technology leader in the field of optical navigational sensors. Optical navigational sensors are used in computer input navigational devices such as mice and are used to produce positional signals by comparing images of a work surface as the navigational device and work surface shift positions in relation to each other. Typically such navigational sensors contain an imaging array for capturing images of a work surface, and computational logic for processing two or more of these images in order to determine a relative motion between the work surface and the input device. Optical navigational devices eliminate the need for mouse pads and offer high precision navigation, pointing and movement.

14. Avago through its predecessors, Hewlett Packard Company and Agilent Technologies, Inc., and through its own work, is a pioneer in the field of navigational sensors. Avago has expended many millions of dollars researching and developing such navigation sensors. These research and development efforts have made Avago a leader in the field of optical navigation sensor technology, having created the first LED mouse in 1999 and the first

laser mouse in 2005. The United States Patent and Trademark Office (“USPTO”) has recognized Avago’s and its predecessors’ achievements by awarding numerous patents to Avago and its inventors for product and process innovation in this field.

15. In addition to these Avago patents, Avago also owns other patents in this field. In 2006, Avago acquired ownership of a Microsoft patent relating to navigation sensors.

16. On January 20, 2011, and May 26, 2011, Avago Technologies ECBU IP (Singapore) Pte. Ltd., Avago Technologies General IP (Singapore) Pte. Ltd., Avago Technologies Trading Ltd., Avago Technologies International Sales Pte. Ltd., and Avago Technologies U.S., Inc. entered into agreements whereby Avago Technologies Trading Ltd., and Avago Technologies U.S., Inc. were granted exclusive rights with respect to one or more of the Patents-In-Suit.

17. In this action Avago asserts that STMicroelectronics N.V. and STMicroelectronics, Inc. are infringing United States Patent No. 5,686,720, United States Patent No. 7,652,661, United States Patent No. 7,643,007, United States Patent No. 6,172,354 and United States Patent No. 7,126,585, directly and/or indirectly, literally and/or by equivalence. The inventions described and claimed in the Asserted Patents cover a variety of novel improvements in the field of optical navigation technology. In particular, the inventions in the Asserted Patents include fundamental enabling technology for, as well as improvements in the design of, optical navigation sensors and navigation devices comprising such optical navigation sensors that do not require use of a mouse pad, including but not limited to optical mice and optical finger navigation (OFN) devices. These inventions permit the construction of navigation devices that can accurately detect and measure navigation movements using a wide variety of

work surfaces and under a wide variety of conditions and which do not have the shortcomings of mechanical navigation devices.

18. Upon information and belief, and without limitation, STMicroelectronics N.V.: (1) owns 100% of the stock of ST Microelectronics, Inc. and a majority of the stock of various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein; (2) prepares and submits consolidated financial statements for itself, its wholly owned subsidiary STMicroelectronics, Inc., and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein, such consolidated financial statements including the assets, liabilities, results of operations and cash flows of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein; (3) shares common officers and/or directors with STMicroelectronics, Inc., wherein such officers and/or directors supervise the research, development, manufacturing, sales, marketing, product groups, and corporate staff functions of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein; (4) conducts its business through its subsidiaries, including ST Microelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein, as a single, global semiconductor company that designs, manufactures, and markets a broad range of semiconductor products, including the infringing products complained of herein; (5) manages this single, global semiconductor company under the direction and control of a Management Board that is supervised by a Supervisory Board, wherein such Supervisory Board controls and directs the policies pursued by the Management Board and the general course of the affairs of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly

involved in the infringing acts complained of herein, and wherein such Supervisory Board has adopted and enforces a charter whereby STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein must seek approval for various management decisions from the Supervisory Board before taking action; (6) prepares product literature and technical manuals for this single, global semiconductor company under the name of “STMicroelectronics”, evidencing a purposeful lack of distinction between STMicroelectronics N.V., STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein, including product literature and technical manuals for the products accused of infringement herein, such product literature and such technical manuals being readily available to the public at <http://www.st.com>; (7) issues and/or directs the issuance of press releases introducing new products, including the infringing products complained of herein under the name “STMicroelectronics” or “ST”, further evidencing a purposeful lack of distinction between STMicroelectronics N.V., STMicroelectronics, Inc., and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein; (8) (a) is an alter ego of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein and thereby controls the conduct of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein; (b) is the principal of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein and effectively controls the conduct of those subsidiaries, which act on STMicroelectronics N.V.’s behalf as its agents, (c) formulates, directs or controls STMicroelectronics, Inc.’s operations and the operations of various other related subsidiaries



directly and/or indirectly involved in the infringing acts complained of herein; and/or (d) controls the management, policies, and operations of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein. On information and belief, in April of 2006, STMicroelectronics N.V. issued a press release from its corporate headquarters in Geneva, Switzerland, announcing that it was soon to begin selling optical sensors for use in “LED- and laser-based mice,” including the VT5366.

19. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), marketing brochures, stating “the VT53xx family of optical mouse sensors [are] for wired and wireless laser or LED mice . . .” and “[t]he VT53xx family from STMicroelectronics enables customers to produce high-performance low-cost mice.” (Exhibit F). On information and belief, STMicroelectronics N.V.’s brochure also provided a long list of products, including optical sensors, reference designs, development boards, and evaluation kits, and referred customers and potential customers to STMicroelectronics N.V.’s website for “[f]ull product information.” On information and belief, this product information was prepared by or on behalf of ST Microelectronics N.V. for its customers and potential customers and taught those customers and potential customers how to incorporate the accused optical sensors into optical navigation devices that infringe the patents in suit. On information and belief, STMicroelectronics N.V.’s brochure provided the Order Code: “FLVT536X0608,” and invited customers and potential customers interested in additional information or in purchasing optical sensors to contact its United States sales representatives at 1 (781) 861-2678.

20. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), the Application Note AN2473 (Exhibit

G), which “describes the typical architectures used in wireless optical mice and describes how the STMicroelectronics VT5366 can be used to realize such a mouse.” This Application Note provides a functional block diagram, showing how the VT5366 optical sensor, which “is the heart of the system,” fits in. The Application Note directs the user to “read [it] in conjunction with the VT5366 Datasheet.” The Application Note AN2473 states that “*STMicroelectronics NV . . . reserve[s] the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.*” (emphasis added).

21. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), the VT5366 data sheet (Exhibit H). The VT5366 data sheet describes the VT5366 as an “Optical mouse sensor” that is “STMicroelectronics first generally available chip for use in all optical mice applications (USB/PS2, Wireless - 27MHz/2.4GHz and BlueTooth).” The VT5366 data sheet includes a detailed circuit schematic and an I<sup>2</sup>C register map that shows users how to interface the VT5366 with their own MCU controllers. The VT5366 Datasheet states that “*STMicroelectronics NV . . . reserve[s] the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.*” (emphasis added).

22. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), the User Manual UM0257 (Exhibit I), which is the User Manual for the VT5366 wireless reference design mouse. This User Manual states that it, “along with the VT5366 datasheet[,] will enable you to evaluate the 27MHz VT5366 Reference Design mouse and *assist you in the design of your own VT5366 wireless*

*mouse.*” It also states that “support can be obtained through the normal regional sales/support groups.” The User Manual UM0257 provides circuit schematics for each of several major components necessary to build a wireless optical mouse using the VT5366 optical sensor. The User Manual UM0257 provides a bill of materials listing the components used to build a wireless optical mouse using the VT5366 optical sensor, fashioned after the reference design mouse available from STMicroelectronics. The User Manual also states that “STMicroelectronics has worked with optical component suppliers to produce a single piece light guide with integrated lens,” and directs the reader to where it may be purchased. The User Manual UM0257 also includes drawings that provide graphic detail to the reader to assist in incorporating the optical component into a wireless optical mouse. Some of these drawings state that they were prepared by “STMicroelectronics Home, Personal & Communications Sector – Imaging Division,” and that they are “the property of STMicroelectronics and will not be copied or loaned without the written permission of STMicroelectronics,” again without distinction between STMicroelectronics N.V. and its subsidiaries. The User Manual UM0257 states that “*STMicroelectronics NV . . . reserve[s] the right to make changes, corrections, modifications or improvements, to this document, **and the products and services described herein** at any time, without notice.*” (emphasis added).

23. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), User Manual UM0503 (Exhibit J), which is the User Manual for the VT5376 evaluation kit. This user manual states that it, “along with the VT5376 datasheet enables you to evaluate the VT5376 high-speed imaging system.” User Manual UM0503 includes detailed circuit schematics of the evaluation mouse included in the VT5376 evaluation kit, including schematics of the VT5376 optical sensor. It also provides a

bill of materials for the components necessary to make an optical mouse using the VT5376 sensor. The User Manual UM0503 states that “*STMicroelectronics NV . . . reserve[s] the right to make changes, corrections, modifications or improvements, to this document, **and the products and services described** herein at any time, without notice.*” (emphasis added).

24. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), the VT5376 data sheet (Exhibit K). The VT5376 data sheet describes the VT5376 as an “Ultra-low power motion sensor for optical finger navigation and laser mice.” The data sheet includes an I<sup>2</sup>C register map and interface protocols for using the VT5376 in connection with optical navigation devices. The VT5376 Data sheet states that “*STMicroelectronics NV . . . reserve[s] the right to make changes, corrections, modifications or improvements, to this document, **and the products and services described herein** at any time, without notice.*” (emphasis added).

25. On information and belief, STMicroelectronics N.V. disseminates or has disseminated, including through its website [www.st.com](http://www.st.com), the Application Note AN2473, the VT5366 Data Sheet, the User Manual UM0257, the VT5376 Datasheet, and the User Manual UM0503. On information and belief, thousands of customers or potential customers of STMicroelectronics N.V., have downloaded these documents and other similar documents disseminated by STMicroelectronics N.V., including through its website [www.st.com](http://www.st.com). On information and belief, many of these STMicroelectronics customers or potential customers have used these documents and materials provided by STMicroelectronics N.V. to design and develop optical navigation devices that infringe the patents in suit. On information and belief, through

the acts complained of herein and others acts that will be discovered in this action, STMicroelectronics N.V. has actively induced infringement of the patents in suit.<sup>1</sup>

26. Upon information and belief, STMicroelectronics N.V., as the principal and/or alter ego of STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein and/or through its own actions, which include its exercise of control over the management, policies, and operations of its agent STMicroelectronics, Inc. and/or various other related subsidiaries directly and/or indirectly involved in the infringing acts complained of herein, is making, using, selling, offering for sale and/or importing into the United States optical navigation sensors, including its VT5366 Optical Navigation Sensor, that infringe, literally and/or through equivalence, and/or are used to infringe, literally and/or through equivalence, directly and/or indirectly, claims of the Asserted Patents. Upon information and belief, STMicroelectronics N.V. is liable for these infringing acts and the infringing acts of STMicroelectronics, Inc..

27. Upon information and belief, STMicroelectronics, Inc. is making, using, selling, offering for sale and/or importing into the United States optical navigation sensors, including its VT5366 Optical Navigation Sensor, that infringe, literally and/or through equivalence, and/or are used to infringe, literally and/or through equivalence, directly and/or indirectly, claims of the Asserted Patents. Upon information and belief, STMicroelectronics, Inc. is liable for these infringing acts, and, as a result of STMicroelectronics N.V.'s direction, control, policy formulation, and/or facilitation of these acts, STMicroelectronics N.V. is also liable for these acts.

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<sup>1</sup> STMicroelectronics, Inc. and STMicroelectronics N.V. have already received detailed notice of the manner in which the accused instrumentalities infringe Avago's patents under this Court's Local Patent Rule 3-1.

28. Upon information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc. are inducing and/or contributing to the infringement of the Asserted Patents by providing, at a minimum, components that they intend for use in and that are adapted for use in optical navigation devices, by instructing others on how to incorporate such components into infringing optical navigation devices, and/or by promoting those components as ideally suited for use in infringing optical navigation devices.

### **FIRST CLAIM**

#### **INFRINGEMENT OF U.S. PATENT No. 5,686,720**

29. Avago incorporates by reference paragraphs 1 - 28 as if fully set forth herein.

30. Avago Technologies ECBU IP (Singapore) Pte. Ltd. ("Avago ECBU") is the owner by assignment of, and Avago Technologies General IP (Singapore) Pte. Ltd. ("Avago General"), Avago Technologies Trading Ltd. ("Avago Trading"), and Avago Technologies U.S., Inc. ("Avago U.S.") own certain exclusive rights to, United States Patent No. 5,686,720 ("the '720 patent").

31. The '720 patent is entitled "Method and Device for Achieving High Contrast Surface Illumination." A true and correct copy of the '720 patent is attached hereto as Exhibit A. On November 11, 1997, the USPTO duly and legally issued the '720 patent, and it was assigned to Hewlett Packard Company. The '720 patent was subsequently assigned to Avago ECBU, which granted certain exclusive rights to the '720 patent to Avago General, which granted certain exclusive rights to the '720 patent to Avago Trading, which granted certain exclusive rights to the '720 patent to Avago Technologies International Sales Pte. Ltd. ("Avago Sales"), which granted certain exclusive rights to the '720 patent to Avago U.S.

32. By virtue of Avago ECBU's ownership of the '720 patent, and Avago General's, Avago Trading's, and Avago U.S.'s ownership of exclusive rights to the '720 patent, Avago ECBU, Avago General, Avago Trading, and Avago U.S. have the right to sue for infringement of the '720 patent and to recover damages for infringement of such patent.

33. Avago is informed and believes, and on that basis alleges, that STMicroelectronics N.V. and STMicroelectronics, Inc. have directly infringed, actively induced infringement of, and/or contributorily infringed the '720 patent in violation of 35 U.S.C. § 271 by making, using, selling, offering for sale, and/or importing into the United States and/or actively inducing others to make, use, sell, offer for sale, or import into the United States navigational devices and/or optical sensor components for navigation devices covered by the '720 patent.

34. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '720 patent has been willful.

35. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc. will continue to infringe and willfully infringe the '720 patent unless they are enjoined from doing so by this Court.

36. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '720 patent is irreparably injuring and damaging Avago, and such injury and damage will continue unless STMicroelectronics N.V. and STMicroelectronics, Inc. are permanently enjoined by this Court from further infringement and willful infringement of the '720 patent.

**SECOND CLAIM**

**INFRINGEMENT OF U.S. PATENT NO. 7,652,661**

37. Avago incorporates by reference paragraphs 1 - 36 as if fully set forth herein.

38. Avago ECBU is the owner by assignment of, and Avago General, Avago Trading, and Avago U.S. own certain exclusive rights to, United States Patent No. 7,652,661 (“the ‘661 patent”).

39. The ‘661 patent is entitled “‘Seeing Eye’ Mouse for Computer System.” A true and correct copy of the ‘661 patent is attached hereto as Exhibit B. On January 26, 2010, the USPTO duly and legally issued the ‘661 patent and it is assigned to Avago ECBU, which granted certain exclusive rights to the ‘661 patent to Avago General, which granted certain exclusive rights to the ‘661 patent to Avago Trading, which granted certain exclusive rights to the ‘661 patent to Avago Sales, which granted certain exclusive rights to the ‘661 patent to Avago U.S.

40. By virtue of Avago ECBU’s ownership of the ‘661 patent, and Avago General’s, Avago Trading’s, and Avago U.S.’s ownership of exclusive rights to the ‘661 patent, Avago ECBU, Avago General, Avago Trading, and Avago U.S. have the right to sue for infringement of the ‘661 patent and to recover damages for infringement of such patent.

41. Avago is informed and believes, and on that basis alleges, that STMicroelectronics N.V. and STMicroelectronics, Inc. have directly infringed, actively induced infringement of, and/or contributorily infringed the ‘661 patent in violation of 35 U.S.C. § 271 by making, using, selling, offering for sale, and/or importing into the United States and/or actively inducing others to make, use, sell, offer for sale, or import into the United States



navigation devices and/or optical sensor components for navigation devices covered by the ‘661 patent.

42. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.’s infringement of the ‘661 patent has been willful.

43. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc. will continue to infringe and willfully infringe the ‘661 patent unless they are enjoined from doing so by this Court.

44. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.’s infringement of the ‘661 patent is irreparably injuring and damaging Avago, and such injury and damage will continue unless STMicroelectronics N.V. and STMicroelectronics, Inc. are permanently enjoined by this Court from further infringement and willful infringement of the ‘661 patent.

### **THIRD CLAIM**

#### **INFRINGEMENT OF U.S. PATENT NO. 7,643,007**

45. Avago incorporates by reference paragraphs 1 - 44 as if fully set forth herein.

46. Avago ECBU is the owner by assignment of, and Avago General, Avago Trading, and Avago U.S. own certain exclusive rights to, United States Patent No. 7,643,007 (“the ‘007 patent”).

47. The ‘007 patent is entitled “Method of Operating An Optical Mouse.” A true and correct copy of the ‘007 patent is attached hereto as Exhibit C. On January 5, 2010, the USPTO duly and legally issued the ‘007 patent and it is assigned to Avago ECBU, which granted certain exclusive rights to the ‘007 patent to Avago General, which granted certain exclusive rights to

the '007 patent to Avago Trading, which granted certain exclusive rights to the '007 patent to Avago Sales, which granted certain exclusive rights to the '007 patent to Avago U.S.

48. By virtue of Avago ECBU's ownership of the '007 patent, and Avago General's, Avago Trading's, and Avago U.S.'s ownership of exclusive rights to the '007 patent, Avago ECBU, Avago General, Avago Trading, and Avago U.S. have the right to sue for infringement of the '007 patent and to recover damages for infringement of such patent.

49. Avago is informed and believes, and on that basis alleges, that STMicroelectronics N.V. and STMicroelectronics, Inc. have directly infringed, actively induced infringement of, and/or contributorily infringed the '007 patent in violation of 35 U.S.C. § 271 by making, using, selling, offering for sale, and/or importing into the United States and/or actively inducing others to make, use, sell, offer for sale, or import into the United States navigational devices and/or optical sensor components for navigation devices covered by the '007 patent.

50. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '007 patent has been willful.

51. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc. will continue to infringe and willfully infringe the '007 patent unless they are enjoined from doing so by this Court.

52. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '007 patent is irreparably injuring and damaging Avago, and such injury and damage will continue unless STMicroelectronics N.V. and STMicroelectronics, Inc. are permanently enjoined by this Court from further infringement and willful infringement of the '007 patent.

**FOURTH CLAIM**

**INFRINGEMENT OF U.S. PATENT NO. 6,172,354**

53. Avago incorporates by reference paragraphs 1 - 53 as if fully set forth herein.

54. Avago General is the owner by assignment of, and Avago Trading and Avago U.S. own certain exclusive rights to, United States Patent No. 6,172,354 (“the ‘354 patent”).

55. The ‘354 patent is entitled “Operator Input Device.” A true and correct copy of the ‘354 patent is attached hereto as Exhibit D. On January 9, 2001, the USPTO duly and legally issued the ‘354 patent and it was assigned to Microsoft Corporation. In November 2006, Microsoft Corporation assigned all right, title and interests in the ‘354 patent to Avago General, which granted certain exclusive rights to the ‘354 patent to Avago Trading, which granted certain exclusive rights to the ‘354 patent to Avago Sales, which granted certain exclusive rights to the ‘354 patent to Avago U.S.

56. By virtue of Avago General’s ownership of the ‘354 patent, and Avago Trading’s and Avago U.S.’s ownership of exclusive rights to the ‘354 patent, Avago General, Avago Trading, and Avago U.S. have the right to sue for infringement of the ‘354 patent and to recover damages for infringement of such patent.

57. Avago is informed and believes, and on that basis alleges, that STMicroelectronics N.V. and STMicroelectronics, Inc. have directly infringed, actively induced infringement of, and/or contributorily infringed the ‘354 patent in violation of 35 U.S.C. § 271 by making, using, selling, offering for sale, and/or importing into the United States and/or actively inducing others to make, use, sell, offer for sale, or import into the United States navigational devices and/or optical sensor components for navigation devices covered by the ‘354 patent.

58. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '354 patent has been willful.

59. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc. will continue to infringe and willfully infringe the '354 patent unless they are enjoined from doing so by this Court.

60. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '354 patent is irreparably injuring and damaging Avago, and such injury and damage will continue unless STMicroelectronics N.V. and STMicroelectronics, Inc. are permanently enjoined by this Court from further infringement and willful infringement of the '354 patent.

#### **FIFTH CLAIM**

#### **INFRINGEMENT OF U.S. PATENT NO. 7,126,585**

61. Avago incorporates by reference paragraphs 1 - 60 as if fully set forth herein.

62. Avago ECBU is the owner by assignment of, and Avago General, Avago Trading, and Avago U.S. own certain exclusive rights to, United States Patent No. 7,126,585 ("the '585 patent").

63. The '585 patent is entitled "One Chip USB Optical Mouse Sensor Solution." A true and correct copy of the '585 patent is attached hereto as Exhibit E. On October 24, 2006, the USPTO duly and legally issued the '585 patent and it is assigned to Avago ECBU, which granted certain exclusive rights to the '585 patent to Avago General, which granted certain exclusive rights to the '585 patent to Avago Trading, which granted certain exclusive rights to the '585 patent to Avago Sales, which granted certain exclusive rights to the '585 patent to Avago U.S.

64. By virtue of of Avago ECBU's ownership of the '585 patent, and Avago General's, Avago Trading's, and Avago U.S.'s ownership of exclusive rights to the '585 patent, Avago ECBU, Avago General, Avago Trading, and Avago U.S. have the right to sue for infringement of the '585 patent and to recover damages for infringement of such patent.

65. Avago is informed and believes, and on that basis alleges, that STMicroelectronics N.V. and STMicroelectronics, Inc. have directly infringed, actively induced infringement of, and/or contributorily infringed the '585 patent in violation of 35 U.S.C. § 271 by making, using, selling, offering for sale, and/or importing into the United States and/or actively inducing others to make, use, sell, offer for sale, or import into the United States optical navigation sensors covered by the '585 patent, and/or navigational devices and/or optical sensor components for navigation devices covered by the '585 patent.

66. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '585 patent has been willful.

67. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc. will continue to infringe and willfully infringe the '585 patent unless they are enjoined from doing so by this Court.

68. On information and belief, STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '585 patent is irreparably injuring and damaging Avago, and such injury and damage will continue unless STMicroelectronics N.V. and STMicroelectronics, Inc. are permanently enjoined by this Court from further infringement and willful infringement of the '585 patent.

**PRAYER FOR RELIEF**

WHEREFORE, Avago prays for judgment:

1. a judicial determination that STMicroelectronics N.V. and STMicroelectronics, Inc. have each infringed, induced the infringement of and/or contributed to the infringement of and each infringes, induces the infringement of and/or contributes to the infringement of the '720 patent, the '661 patent, the '007 patent, the '354 patent and the '585 patent;
2. an order permanently enjoining STMicroelectronics N.V. and STMicroelectronics, Inc. and their officers, directors, agents, assigns and others acting in concert with any of them from infringing, inducing the infringement of and contributing to the infringement of the '720 patent, the '661 patent, the '007 patent, the '354 patent and the '585 patent;
3. an award of damages adequate to compensate Avago for STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '720 patent, the '661 patent, the '007 patent, the '354 patent and the '585 patent;
4. an award of prejudgment interest and post-judgment interest on the damages awarded for STMicroelectronics N.V. and STMicroelectronics, Inc.'s infringement of the '720 patent, the '661 patent, the '007 patent, the '354 patent and the '585 patent;
5. a judicial determination that STMicroelectronics N.V. and STMicroelectronics, Inc. have each willfully infringed the '720 patent, the '661 patent, the '007 patent, the '354 patent and the '585 patent, and that treble damages for such willful infringement should be awarded pursuant to 35 U.S.C. § 284;
6. that this be deemed an exceptional case and Avago be awarded its attorneys' fees and costs pursuant to 35 U.S.C. § 285; and

7. awarding Avago such other and further relief as the Court deems just and proper.

**JURY DEMAND**

Pursuant to Fed. R. Civ. P. 38 and Local Rule CV-38, Avago demands a jury trial on all issues triable to the jury.

Dated: September 9, 2011

Respectfully submitted,

/s/ Duane-David Hough with  
permission by Michael Jones

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**CERTIFICATE OF SERVICE**

I hereby certify that all counsel of record who have consented to electronic service and are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on September 9, 2011. Any other counsel of record will be served by First Class U.S. mail on this same date.

/s/ Michael Jones  
Michael Jones