

IN THE UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

Inventergy, Inc., Plaintiff, v. Apple Inc., Defendant.	C.A. No. _____ JURY TRIAL DEMANDED
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COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Inventergy, Inc. (“Inventergy”) files this Complaint against Defendant Apple Inc. (“Apple” or “Defendant”). Inventergy alleges as follows:

NATURE OF THE ACTION

1. Inventergy brings this patent infringement action to protect its intellectual property and stop Defendant from continuing its wrongful and unlicensed use of Inventergy’s patented technologies within and in conjunction with Defendant’s mobile phones, and tablets, among other devices.
2. Inventergy is an investment and licensing company that helps industry leaders protect their most valuable intellectual property. Inventergy has been repeatedly recognized for its ability to create value through its strategic insight into the development, creation, and management of intellectual property.
3. Inventergy owns a robust patent portfolio comprising hundreds of patents embodying decades of innovation, investment and effort by numerous companies, inventors, and engineers. Inventergy encourages innovation through proper channels

by licensing its intellectual property within the marketplace, but enforces its patent rights when necessary to protect its own investment, along with the hard work of the inventors of that intellectual property, from unauthorized use.

4. Inventergy's patent portfolio includes patents related to mobile telecommunications and wireless technology, including, but not limited to EDGE/3G/LTE user devices, routers, infrastructure, telecommunications management services, and IMS/VoIP core networks.

5. Defendant provides certain products and services, including but not limited to its mobile phones, and tablets, among other devices. Products sold by Defendant include, but are not limited to, the devices listed in Appendix A. Defendant's products and related services make use of Inventergy's patented technology and infringe the following United States patents ("the Asserted Patents"):

- a. U.S. Patent No. 6,466,563 ("the '563 Patent"), titled "CDMA Mobile Station and CDMA Transmission Method" (Exhibit A attached hereto);
- b. U.S. Patent No. 6,611,676 ("the '676 Patent"), titled "Radio Communication Apparatus and Transmission Rate Control Method" (Exhibit B attached hereto);
- c. U.S. Patent No. 7,206,587 ("the '587 Patent"), titled "Communication Terminal Apparatus, Base Station Apparatus, and Radio Communication Method" (Exhibit C attached hereto);
- d. U.S. Patent No. 7,760,815 ("the '815 Patent"), titled "Apparatus and Method for Transmission/Reception" (Exhibit D attached hereto);

- e. U.S. Patent No. 7,764,711 (“the ‘711 Patent”), titled “CDMA Transmission Apparatus and CDMA Transmission Method” (Exhibit E attached hereto);
- f. U.S. Patent No. 7,848,439 (“the ‘439 Patent”), titled “Communication Apparatus, Communication System, and Communication Method” (Exhibit F attached hereto); and
- g. U.S. Patent No. 6,760,590 (“the ‘590 Patent”), titled “Communication Terminal Apparatus, Base Station Apparatus, and Radio Communication Method” (Exhibit G attached hereto).

6. Accordingly, Inventergy seeks damages in an amount adequate to compensate them for Defendant’s infringement, including trebled damages based on Defendant’s willful infringement of the Asserted Patents, a permanent injunction barring Defendant from continuing to infringe the Asserted Patents, and Inventergy’s attorneys’ fees and costs associated with this action.

JURISDICTION AND VENUE

7. This lawsuit is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 101 *et seq.* This Court has subject-matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. The Court has personal jurisdiction over Defendant because, on information and belief, Defendant Apple Inc. is present within or has minimum contacts within the State of Delaware and the District of Delaware; Defendant has purposefully availed itself of the privileges of conducting business in the State of Delaware and the District of

Delaware; Defendant has sought protection and benefit from the laws of the State of Delaware; Defendant regularly conducts business within the State of Delaware and within the District of Delaware; and Inventergy's cause of action arises directly from Defendant's business contacts and other activities in the State of Delaware and the District of Delaware.

9. More specifically, this Court has personal jurisdiction over Defendant because Defendant directly and/or through intermediaries, ships, distributes, uses, offers for sale, sells, and/or advertises products and services in the United States, the State of Delaware, and the District of Delaware. This Court also has personal jurisdiction over Defendant because Defendant has committed, contributed to, and induced acts of patent infringement and has regularly and systematically conducted and solicited business in this District by and through at least the sales and offers for sale of Defendant's products and services, and other contractual arrangements with Defendant's customers, developers, distributors and third-parties using Defendant's products and services located in and/or doing business in this District.

10. Upon information and belief, Defendant provides and/or directs its products and services at customers living in cities served by the United States District Court for the District of Delaware. Defendant owns, manages, and/or operates a retail store within the District of Delaware that sells Defendant's products to customers in this District. By way of example, employees of the Apple store located at 125 Stanton

Christiana Road, Newark, DE 19702, have publicly stated: “We sell more iPhones than anyone.”¹

11. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b). On information and belief, Defendant has transacted business in this District, and has directly committed acts of patent infringement in this District.

THE PARTIES

A. Plaintiff Inventergy

12. Inventergy is a Delaware corporation whose principal place of business is located in Campbell, California.

13. Inventergy was founded by Joe Beyers – the former head of intellectual property and global strategy at Hewlett-Packard. Throughout his career, Mr. Beyers has worked extensively with innovative and emerging technologies, including through the identification, acquisition, and licensing of patented technologies for fair value. Collectively, Inventergy’s management team has more than 100 years of experience working for global companies, handling more than \$15 billion in intellectual property and technology transactions worldwide.

14. Inventergy owns, through assignments originating with Panasonic Corporation (“Panasonic”), a patent portfolio (“the Panasonic portfolio”) related to mobile telecommunications and wireless technology, including, but not limited to

¹ ABCNews.com, *Apple’s (AAPL) Delaware Store Claims Title for Selling Most iPhones* (Nov. 12, 2013), available at <http://abcnews.go.com/Business/apples-delaware-store-claims-title-selling-iphones/story?id=20650009> (last accessed Feb. 24, 2017).

EDGE/3G/LTE user devices, equipment, and base stations. The portfolio includes approximately 500 patents including the Asserted Patents. Implementation of mandatory portions of various 3GPP technical specifications, including at least TS 25.133, 25.212, 25.213, 25.214, 25.308, 25.319, 25.321, 36.133, 36.211, 36.212, 36.213, 36.300, 36.331, 45.001, 45.003, and 45.004, infringe one or more of the Asserted Patents.

Inventergy also owns hundreds of other patents related to mobile telecommunications and wireless technology acquired from Huawei Technologies Co., Ltd. (“Huawei”) and Nokia Corporation (“Nokia”).

15. The Panasonic portfolio assets cover, among other things, key technologies in EDGE/3G/LTE communications, an industry in which Panasonic has been an early technology innovator and standards setter.

B. Defendant Apple

16. Defendant Apple Inc. (“Apple”) is a California corporation with its principal place of business at 1 Infinite Loop, Cupertino, California 95014. Defendant Apple has designated The Corporation Trust Company, located at Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801, as its registered agent in Delaware.

17. Defendant Apple is involved in the development, manufacture, import and/or sale of certain products that make use of Inventergy’s patented technology. Products sold by Apple include, but are not limited to, the devices listed in Appendix A.

18. Defendant Apple is one of the largest providers of consumer electronics in the country and one of the world's largest manufacturers of EDGE/3G/LTE user devices.

BACKGROUND OF THE TECHNOLOGY

19. The technology at issue in this case pertains generally to the field of mobile telecommunications, including, but not limited to EDGE/3G/LTE user devices.

20. Mobile telecommunications devices allow users to make or receive telephone calls and transmit and receive data wirelessly over a wide geographical area.

21. Around 1980, first generation ("1G") mobile phones were introduced to the public. These phones used analog modulation techniques, specifically frequency division multiple access, to transmit voice calls.

22. In the 1990s, second generation ("2G") phones emerged. These phones used digital technology, which permitted more efficient use of the radio spectrum than their 1G predecessor. While second generation systems were originally designed only for voice, they were later enhanced to include data transmission, but could only achieve low data rates.

23. During the same time period of growth for 2G communications systems, overall use of the Internet also increased. In response to user demand for higher data rates, third generation ("3G") phones emerged.

24. While voice calls traditionally dominated the traffic in mobile communications, the increasing number of mobile devices and the advancement of mobile device technology with increased features and data-hungry applications drove

demand for faster and more reliable data transmissions. Data traffic over cellular networks has therefore increased dramatically since the mid to late 2000s.

25. Given the increased demand for data, coupled with limited available radio spectrum, mobile communication developers were required to create a standard that, compared with 3G, offered much higher data rates, lower latency, and improved overall user experience. LTE is the result of this development.

26. Global standards establish precise specifications for the essential components of telecommunications systems. Global standards are fundamental in allowing products and services from unrelated competitors to be compatible and to operate seamlessly with a telecommunications network. These standards include General Packet Radio Service (“GPRS”), Enhanced Data rates for GSM Evolution (“EDGE”), “Universal Mobile Telecommunications System (“UMTS”), the High Speed Downlink Packet Access (“HSDPA”) and High Speed Uplink Packet Access (“HSUPA”) mobile protocols that combine to form High Speed Packet Access (“HSPA”), and Long-Term Evolution (“LTE”).

27. Each of the standards consists of a series of technical specifications (“TS”). The 25, 36, and 45 series of technical specifications cover various aspects of the above wireless technologies, including at least TS 25.133, 25.212, 25.214, 25.302, 25.303, 25.308, 25.319, 25.321, 36.211, 36.212, 36.213, 36.300, 45.001, 45.003, and 45.004.

NOTICE AND COMPLIANCE WITH FRAND OBLIGATIONS

28. On January 16, 2015, Inventergy first contacted Defendant regarding a potential license to a number of patents in Inventergy’s patent portfolio, including the

'563, '676, '587, '815, '439, and '590 Asserted Patents. Inventergy's letter to Defendant described the portfolio on 3G (WDCMA) and 4G (LTE) communications and identified 34 patent families, consisting of 347 patents, with claims directed to end user devices. Inventergy explained that a number of these patents and patent families related to "WCDMA and LTE standards enabled in Apple Products" and were therefore subject to FRAND licensing commitments. Inventergy further explained that it was "prepared to grant Apple a worldwide, nonexclusive license " and offered specific royalty rates for Apple's products. Inventergy also attached a number of claim charts, including charts for the '590 and '439 Patents.

29. Inventergy contacted Defendant on February 13, 2015 to further discuss the possibility of granting Defendant a worldwide, nonexclusive license for its patent portfolio, including for the Asserted Patents.

30. Inventergy sent additional claim charts to Defendant on March 6, 2015, including for the '563 Patent.

31. On March 31, 2015, Inventergy sent Defendant additional details relating to its Panasonic patent portfolio.

32. After a period of discussion, the parties' met on or around August 4, 2015. At that meeting, Inventergy presented Defendant with additional details of Defendant's infringement of the Asserted Patents, including with claim charts for at least the '590 and '439 Patents. Inventergy reiterated its proposal for granting Defendant a worldwide, nonexclusive license for its patent portfolio, including for the Asserted Patents.

33. On August 25, 2015, Inventergy sent Defendant additional details regarding several of the Asserted Patents, along with several claim charts including an updated chart for the '563 Patent.

34. Throughout the events described above, Inventergy continuously offered Defendant a license to its Panasonic Portfolio, including the Asserted Patents, on FRAND terms. To date, Defendant has refused to enter into such a licensing agreement.

35. Throughout the above, Inventergy continued to discuss with Defendant its infringement of the Asserted Patents, and propose a potential patent license to resolve claims relating to infringement.

36. Defendant has been on notice of its infringement of at least U.S. Pat. No. 6,466,563 since at least January 16, 2015, when Inventergy provided actual notice of the Asserted Patents to Defendant.

37. Defendant has been on notice of its infringement of at least U.S. Pat. No. 6,611,676 since at least January 16, 2015, when Inventergy provided actual notice of the Asserted Patents to Defendant.

38. Defendant has been on notice of its infringement of at least U.S. Pat. No. 7,206,587 since at least January 16, 2015, when Inventergy provided actual notice of the Asserted Patents to Defendant.

39. Defendant has been on notice of its infringement of at least U.S. Pat. No. 7,760,815 since at least January 16, 2015, when Inventergy provided actual notice of the Asserted Patents to Defendant.

40. Defendant has been on notice of its infringement of at least U.S. Pat. No. 7,848,439 since at least January 16, 2015, when Inventergy provided actual notice of the Asserted Patents to Defendant.

41. Defendant has been on notice of its infringement of at least U.S. Pat. No. 6,760,590 since at least January 16, 2015, when Inventergy provided actual notice of the Asserted Patents to Defendant.

FIRST CLAIM FOR RELIEF

Infringement of U.S. Patent No. 6,466,563

42. Inventergy incorporates by reference the foregoing paragraphs.

43. The '563 Patent issued on October 15, 2002, and is titled "CDMA Mobile Station and CDMA Transmission Method."

44. Inventergy is the owner by assignment of all rights, title, and interest in the '563 Patent.

45. The '563 Patent is valid and enforceable.

46. The '563 patented technology is directed generally to Code Division Multiple Access ("CDMA") mobile station apparatuses and CDMA transmission methods. One objective of the invention was to provide a CDMA mobile stations apparatus and CDMA transmission method which can maintain established synchronization with a base station apparatus while reducing power consumption when there is no data to be transmitted. This particular objective can be achieved, among other ways, by controlling the transmission interval of burst data to N slots (N: a natural number) when a certain time has elapsed after the end of data transmission.

47. The use of mandatory portions of the HSPA standard infringes the '563 Patent. For example, the 3GPP standard TS 25.308 requires use of discontinuous uplink transmission for transmitting DPCCH in a controllable burst pattern when a user device is not transmitting data (on an Enhanced Dedicated Channel ("E-DCH")) or High-Speed Dedicated Physical Control Channel ("HS-DPCCH").

48. On information and belief, Defendant's mobile devices, tablets, and other devices with HSPA capabilities use the mandatory portions of the HSPA standard covered by the '563 Patent, including but not limited to Claim 12.

49. Defendant has infringed, and is currently infringing, the '563 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '563 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, including at least TS 25.308. For instance, these Defendant devices include, but are not limited to, the iPhone 7, iPhone 7 Plus, and equivalents, and the HSPA devices listed in Appendix A.

50. More specifically, Defendant's mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards infringe at least Claim 12 of the '563 Patent because they generate and transmit frames for uplink transmission by inserting pilot and Transmit Power Control (TPC) symbols without data using discontinuous uplink transmission techniques.

51. Defendant was provided one or more claim charts for the '563 Patent on at least March 6, 2015, and those charts are hereby incorporated by reference.

52. Defendant has had actual knowledge of the '563 Patent and Defendant's infringement of the '563 Patent since at least January 16, 2015, before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

53. Defendant induces third parties, including customers, to infringe the '563 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '563 Patent. Upon information and belief, Defendant knows that the use of its mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, constitutes infringement of the '563 Patent, including at least Claim 12. Defendant advertises the infringing products and services, publishes specifications and promotional literature encouraging customers to operate the accused products and services, creates and/or distributes user manuals for the accused products and services that provide instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

54. For instance, Defendant encourages and facilitates its customers to infringe the '563 Patent by instructing customers that purchase its iPhone 7 and 7 Plus mobile

phones that such devices have “HSPA+” capability, and providing various indicators within those devices of the same.² Customers, pursuant to Defendant’s instructions, indicators, and advertisements, each directly infringe the ’563 Patent, including at least Claim 12.

55. Defendant also contributes to the infringement of the ’563 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the ’563 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the ’563 Patent, including at least Claim 12. The accused components constitute a material part of the invention claimed by the ’563 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the ’563 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, to perform, among other things, the discontinuous transmission of an uplink control channel when data transmission is not scheduled for transmission. The accused components are separable from Defendant’s products and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the ’563 Patent. Further, because the ’563 Patent is essential to the HSPA standards Defendant’s devices with LTE, HSPA, and/or

² See iPhone 7 Technical Specifications, *available at* <http://www.apple.com/iphone-7/specs/> (last accessed Feb. 21, 2017); iPhone 7 Plus Technical Specification, *available at* https://support.apple.com/kb/SP744?locale=en_US (last accessed Feb. 21, 2017).

EDGE capabilities and comply with HSPA standard are material in practicing the '563 Patent, are especially made to infringe the '563 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '563 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '563 Patent by users of Defendant's services, products, and/or features, including at least Claim 12.

56. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

57. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

SECOND CLAIM FOR RELIEF

Infringement of U.S. Patent No. 6,611,676

58. Inventergy incorporates by reference the foregoing paragraphs.

59. The '676 Patent issued on August 26, 2003, and is titled "Radio Communication Apparatus and Transmission Rate Control Method."

60. Inventergy is the owner by assignment of all rights, title, and interest in the '676 Patent.

61. The '676 Patent is valid and enforceable.

62. The '676 patented technology is directed generally to a radio communication apparatus with a variable transmission rate and a transmission rate control method. One objective of the invention was to provide a radio communication apparatus and transmission rate control method capable of controlling transmission power of a base station directed to a mobile station appropriately without being affected by the environment of the mobile station or transmission rate. This particular objective can be achieved, among other ways, by a radio communication apparatus and transmission rate control method that switch the transmission rate of a transmission signal based on reception quality information from the other end of communication, or according to the environment of the other end of communication and transmit the signals at the switched transmission rate. Among other applications, this control method can also be applied to the uplink to reduce interference, and to achieve power saving or to navigate hardware restrictions. This can be accomplished in various embodiments, some of which are further described in column 15, lines 1-8 of the '676 Patent.

63. The use of mandatory portions of the WCDMA/HSPA standard infringes the '676 Patent. For example, the 3GPP standard TS 25.214 requires use of Transmit Power Control ("TPC") command to control the transmit power of the user device. The value of TPC command sent to a certain device is based on the comparison result of the estimated signal-to-interference ratio ("SIR") and the received uplink SIR on the frequency of the user device. Furthermore, the 3GPP standard requires the user device to select E-TFC to change the uplink transmission rate, as specified in the 3GPP TS 25.319 standard. Additionally, the 3GPP standard TS 25.321 requires use of the user

device to determine the state of each E-TFC for every MAC-d flow based on its required transmit power versus the maximum remaining power allowed.

64. Upon information and belief, Defendant's mobile devices, tablets, and other devices with WCDMA/HSPA capabilities use the mandatory portions of the WCDMA/HSPA standard covered by the '676 Patent, including but not limited to Claim 7.

65. Defendant has infringed, and is currently infringing, the '676 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '676 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with HSPA capabilities and comply with HSUPA portions of the WCDMA/HSPA standards, including at least TS 25.214, TS 25.319, and/or TS 25.321. For instance, these Defendant devices include, but are not limited to, the iPhone 7, iPhone 7 Plus, and equivalents and the HSPA devices listed in Appendix A.

66. More specifically, Defendant's mobile devices, tablets, and other devices with HSPA capabilities and comply with HSUPA portions of the WCDMA/HSPA standards infringe at least Claim 7 of the '676 Patent because they contain a transmission power controller capable of modifying transmission power based on certain transmission rate of the device's uplink data in response to calculations comparing average transmission power needed for certain transmission rate with maximum allowable transmission power.

67. Defendant has had actual knowledge of the '676 Patent and Defendant's infringement of the '676 Patent since at least January 16, 2015, before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

68. Defendant induces third parties, including customers, to infringe the '676 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '676 Patent, including at least Claim 7. Upon information and belief, Defendant knows that the use of its mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, constitutes infringement of the '676 Patent. Defendant advertises the infringing products and services, publishes specifications and promotional literature encouraging customers to operate the accused products and services, creates and/or distributes user manuals for the accused products and services that provide instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

69. For instance, Defendant encourages and facilitates its customers to infringe the '676 Patent by instructing customers that purchase its iPhone 7 and iPhone 7 Plus mobile phones that such devices have "HSPA+" capability, and providing various

indicators within those devices of the same.³ Customers, pursuant to Defendant's instructions and advertisements, each directly infringe the '676 Patent, including at least Claim 7.

70. Defendant also contributes to the infringement of the '676 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '676 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the '676 Patent, including at least Claim 7. The accused components constitute a material part of the invention claimed by the '676 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '676 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, to communicate with other radio devices while satisfying an allowable transmission power constraint. The accused components are separable from Defendant's products and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the '676 Patent. Further, because the '676 Patent is essential to the LTE, HSPA, and/or EDGE standards, Defendant's devices with HSPA capabilities and comply with the HSPA standard are material in practicing the '676 Patent, are especially made to infringe the

³ See iPhone 7 Technical Specifications, *available at* <http://www.apple.com/iphone-7/specs/> (last accessed Feb. 21, 2017); iPhone 7 Plus Technical Specification, *available at* https://support.apple.com/kb/SP744?locale=en_US (last accessed Feb. 21, 2017).

'676 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with HSPA capabilities and comply with HSPA standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '676 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '676 Patent by users of Defendant's services, products, and/or features, including at least Claim 7.

71. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

72. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

THIRD CLAIM FOR RELIEF

Infringement of U.S. Patent No. 7,206,587

73. Inventergy incorporates by reference the foregoing paragraphs.

74. The '587 Patent issued on April 17, 2007, and is titled "Communication Terminal Apparatus, Base Station Apparatus, and Radio Communication Method."

75. Inventergy is the owner by assignment of all rights, title, and interest in the '587 Patent.

76. The '587 Patent is valid and enforceable.

77. The '587 patented technology is directed generally to a communication terminal apparatus, base station apparatus, and radio communication method to be

used in a cellular communication system. One objective of the invention was to provide a communication terminal apparatus, base station apparatus, and radio communication method that make it possible to prevent a fall in downlink throughput in a communication system in which communication resources are allocated to communication terminals based on downlink channel quality. This particular objective can be achieved, among other ways, when, among information indicative of downlink channel quality, which has a possibility of decreasing the downlink throughput when the information is received erroneously in a base station, a communication terminal provides such information with less susceptibility to errors in the propagation path to transmit, and it is thereby possible to prevent the downlink throughput from decreasing.

78. The use of mandatory portions of the UMTS standard infringes the '587 Patent. For example, the 3GPP standard TS 25.212 requires use of a (20,5) code to code the Channel Quality Indicator ("CQI"). Furthermore, the 3GPP standard requires the coding for HS-DPCCH to code the CQI through the channel coding module, as specified in the 3GPP TS 25.213 standard. Additionally, the 3GPP standard TS 25.214 requires a user device to report CQI on the uplink channel.

79. Upon information and belief, Defendant's mobile devices, tablets, and other devices with UMTS and/or HSPA capabilities use the mandatory portions of the UMTS and/or HSPA standards covered by the '587 Patent, including but not limited to Claim 4.

80. Defendant has infringed, and is currently infringing, the '587 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '587 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with UMTS and/or HSPA capabilities and comply with UMTS and/or HSPA standards, including at least TS 25.212, 25.213, and 25.214. For instance, these Defendant devices include, but are not limited to, the iPhone 7, iPhone 7 Plus, and equivalents and the UMTS and/or HSPA devices listed in Appendix A.

81. More specifically, Defendant's mobile devices, tablets, and other devices with UMTS and/or HSPA capabilities and comply with UMTS and/or HSPA standards infringe at least Claim 4 of the '587 Patent because the devices estimate a Channel Quality Estimate (CQI) value, which is a representation of downlink channel quality. The infringing devices encode the CQI values using an encoding method wherein the most significant bit is better protected from channel errors than other information bits of the CQI.

82. Defendant has had actual knowledge of the '587 Patent and Defendant's infringement of the '587 Patent since at least January 16, 2015, before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been

known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

83. Defendant also contributes to the infringement of the '587 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '587 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the '587 Patent, including at least Claim 4. The accused components constitute a material part of the invention claimed by the '587 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '587 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with UMTS and/or HSPA capabilities and comply with UMTS and/or HSPA standards, to transmit channel quality information from user devices to a base station in a cellular network. The accused components are separable from Defendant's products and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the '587 Patent. Further, because the '587 Patent is essential to the UMTS and/or HSPA standards, Defendant's devices with UMTS and/or HSPA capabilities and comply with UMTS and/or HSPA standards are material in practicing the '587 Patent, are especially made to infringe the '587 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with UMTS and/or HSPA capabilities and comply with UMTS and/or

HSPA standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '587 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '587 Patent by users of Defendant's services, products, and/or features, including at least Claim 4.

84. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

85. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

FOURTH CLAIM FOR RELIEF

Infringement of U.S. Patent No. 7,760,815

86. Inventergy incorporates by reference the foregoing paragraphs.

87. The '815 Patent issued on July 20, 2010, and is titled "Apparatus and Method for Transmission/Reception."

88. Inventergy is the owner by assignment of all rights, title, and interest in the '815 Patent.

89. The '815 Patent is valid and enforceable.

90. The '815 patented technology is directed generally to a transmission/reception apparatus, and in particular, to a transmission/reception apparatus for an Orthogonal Frequency Division Multiplexing ("OFDM") system. One objective of the invention was to provide a transmission/reception apparatus that will improve the transmission efficiency while maintaining the transmission quality of

important information. This particular objective can be achieved, among other ways, in a modulation system that expresses 1 symbol of 8 PSK or 16 PSK, etc. using 3 or more bits by placing information selected from all information to be communicated on at least one of the 1st bit or 2nd bit only.

91. The use of mandatory portions of the EGPRS standard infringes the '815 Patent. For example, the 3GPP standard TS 45.001 requires use of independent coding for the header part and data part of the Radio Block for the EGPRS and EGPRS2 PDTCH channel coding. Furthermore, the 3GPP standard requires describes the specific algorithms for the header coding and data coding for the Radio Block of the EGPRS and EGPRS2 PDTCH, as specified in the 3GPP TS 45.003 standard. Additionally, the 3GPP standard TS 45.004 requires use of a 8PSK symbol for mapping modulation bits.

92. Upon information and belief, Defendant's mobile devices, tablets, and other devices with EGPRS capabilities use the mandatory portions of the EGPRS standard covered by the '815 Patent, including but not limited to Claim 10.

93. Defendant has infringed, and is currently infringing, the '815 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '815 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with EGPRS capabilities and comply with EGPRS standards, including at least TS 45.001, TS 45.003, and/or TS 45.004. For instance, these Defendant devices include, but are not limited to,

the iPhone 7, iPhone 7 Plus, and equivalents and the EGPRS devices listed in Appendix A.

94. More specifically, Defendant's mobile devices, tablets, and other devices with EGPRS capabilities and comply with EGPRS standards infringe at least Claim 10 of the '815 Patent because the devices generate a sequence of bits, including at least one bit containing control information and one bit containing data information that modulates a sequence of at least three bits so that the first bits contain header control information and the second bit that contains related data control bits.

95. Defendant has had actual knowledge of the '815 Patent and Defendant's infringement of the '815 Patent since at least January 16, 2015, before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

96. Defendant induces third parties, including customers, to infringe the '815 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '815 Patent, including at least Claim 10. Upon information and belief, Defendant knows that the use of its mobile devices, tablets, and other devices with EGPRS capabilities and comply with EGPRS standards, constitutes infringement of the '815 Patent. Defendant advertises the infringing products and services, publishes specifications and promotional literature

encouraging customers to operate the accused products and services, creates and/or distributes user manuals for the accused products and services that provide instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

97. For instance, Defendant encourages and facilitates its customers to infringe the '815 Patent by instructing customers that purchase its iPhone 7 and iPhone 7 Plus mobile phones that such devices have "EDGE" capability, and providing various indicators within those devices of the same.⁴ Customers, pursuant to Defendant's instructions and advertisements, each directly infringe the '815 Patent, including at least Claim 10.

98. Defendant also contributes to the infringement of the '815 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '815 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the '815 Patent, including at least Claim 10. The accused components constitute a material part of the invention claimed by the '815 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '815 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with EGPRS capabilities and comply with EGPRS standards, to map

⁴ See iPhone 7 Technical Specifications, *available at* <http://www.apple.com/iphone-7/specs/> (last accessed Feb. 21, 2017); iPhone 7 Plus Technical Specification, *available at* https://support.apple.com/kb/SP744?locale=en_US (last accessed Feb. 21, 2017).

two related sequences of bits, one having more important information, onto bit position of modulation symbols. The accused components are separable from Defendant's products and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the '815 Patent. Further, because the '815 Patent is essential to the EGPRS standard, Defendant's devices with EGPRS capabilities and comply with the EGPRS standard are material in practicing the '815 Patent, are especially made to infringe the '815 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with EGPRS capabilities and comply with EGPRS standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '815 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '815 Patent by users of Defendant's services, products, and/or features, including at least Claim 10.

99. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

100. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

FIFTH CLAIM FOR RELIEF

Infringement of U.S. Patent No. 7,764,711

101. Inventergy incorporates by reference the foregoing paragraphs.

102. The '711 Patent issued on July 27, 2010, and is titled "CDMA Transmission Apparatus and CDMA Transmission Method."

103. Inventergy is the owner by assignment of all rights, title, and interest in the '711 Patent.

104. The '711 Patent is valid and enforceable.

105. The '711 patented technology is directed generally to a transmission apparatus and transmission method which transmits signals from a plurality of transmission antennas like a Multi-Input/Multi-Output ("MIMO") communication and adopts a CDMA scheme. One objective of the invention was to improve reception performance of specific data on a receiving side while maintaining the transmission efficiency of a communication system. This particular objective can be achieved, among other ways, with a CDMA transmission apparatus which transmits different code division multiplexed signals from a plurality of transmission antennas by apportioning specific data to a plurality of antennas and spreading/modulating the specific data with different spreading codes assigned thereto before being transmitted. Among other applications, the CDMA transmission apparatus can also be applied to a transmission apparatus using a multicarrier scheme such as OFDM. In this embodiment, a transmission scheme using multicarriers has a symbol rate set to a low level (long symbol length) and has the effect of reducing interference among codes due to multipaths in a multipath environment. Further, by inserting guard intervals in this embodiment, it is also possible to remove interference among codes due to multipaths.

106. The use of mandatory portions of the LTE standard infringes the '711 Patent. For example, the 3GPP standard TS 36.211 requires use of precoding used in combination with layer mapping for spatial multiplexing that supports multiple antenna ports.

107. Upon information and belief, Defendant's mobile devices, tablets, and other devices with MIMO structure that use the mandatory portions of the LTE Advanced standard covered by the '711 Patent, including but not limited to Claim 1.

108. Defendant has infringed, and is currently infringing, the '711 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '711 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with MIMO structure and comply with LTE Advanced standards, including at least TS 36.211. For instance, these Defendant devices include, but are not limited to, the iPhone 7, iPhone 7 Plus, and equivalents and the LTE devices listed in Appendix A.

109. More specifically, Defendant's mobile devices, tablets, and other devices with MIMO structure and comply with LTE Advanced standards infringe at least Claim 1 of the '711 Patent because they utilize a multi-input, multi-output transmitter that apportions and transmits replicated data in parallel to a base station. By way of example, on information and belief, Defendants' iPhone 7 and iPhone 7 Plus support LTE category 13 (uplink).

110. On information and belief, Defendant has had actual knowledge of the '711 Patent and Defendant's infringement of the '711 Patent since at least before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

111. Defendant induces third parties, including customers, to infringe the '711 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '711 Patent, including at least Claim 1. Upon information and belief, Defendant knows that the use of its mobile devices, tablets, and other devices with MIMO structure and comply with LTE Advanced standards, constitutes infringement of the '711 Patent. Defendant advertises the infringing products and services, publishes specifications and promotional literature encouraging customers to operate the accused products and services, creates and/or distributes user manuals for the accused products and services that provide instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

112. For instance, Defendant encourages and facilitates its customers to infringe the '711 Patent by instructing customers that purchase iPhone 7 and iPhone 7 Plus mobile phones that such devices have "LTE" capability, and providing various

indicators within those devices of the same.⁵ Defendant also encourages and facilitates its customers to infringe the '711 Patent by instructing customers that purchase its iPhone 7 and iPhone 7 Plus mobile phones that such devices have “[u]p to 13 hours on LTE” and providing various indicators within those devices of the same. *Id.*

Additionally, Defendant encourages and facilitates its customers to infringe the '711 Patent by instructing customers to “see www.apple.com/iphone/LTE” for “details on LTE support.” *Id.* Customers, pursuant to Defendant’s instructions and advertisements, each directly infringe the '711 Patent, including at least Claim 1.

113. Defendant also contributes to the infringement of the '711 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '711 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the '711 Patent, including at least Claim 1. The accused components constitute a material part of the invention claimed by the '711 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '711 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with MIMO structure and comply with LTE Advanced standards, to transmit signals from multiple transmission antennas. The accused components are separable from Defendant’s products and are not staple articles or commodities of

⁵ See iPhone 7 Technical Specifications, *available at* <http://www.apple.com/iphone-7/specs/> (last accessed Feb. 21, 2017); iPhone 7 Plus Technical Specification, *available at* https://support.apple.com/kb/SP744?locale=en_US (last accessed Feb. 21, 2017).

commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the '711 Patent. Further, because the '711 Patent is essential to the LTE standard, Defendant's devices with LTE capabilities and comply with the LTE standard are material in practicing the '711 Patent, are especially made to infringe the '711 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with MIMO structure and comply with LTE Advanced standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '711 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '711 Patent by users of Defendant's services, products, and/or features, including at least Claim 1.

114. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

115. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

SIXTH CLAIM FOR RELIEF

Infringement of U.S. Patent No. 7,848,439

116. Inventergy incorporates by reference the foregoing paragraphs.

117. The '439 Patent issued on December 7, 2010, and is titled "Communication Apparatus, Communication System, and Communication Method."

118. Inventergy is the owner by assignment of all rights, title, and interest in the '439 Patent.

119. The '439 Patent is valid and enforceable.

120. The '439 patented technology is directed generally to a communication apparatus, communication system, and communication method, and particularly relates to a communication apparatus, communication system, and communication method for carrying out adaptive modulation and coding in adaptive transmission technology in subcarrier communication systems. One objective of the invention was to provide a communication apparatus, communication system, and communication method capable of increasing the spectrum utilization rate of a system and particularly increasing the spectrum utilization rate based on high-speed fading and channel estimation error, reducing the degree of difficulty of adaptivity, and reducing the feedback overhead compared with subband adaptive methods of the related art by combining all of the subbands on a frequency domain of a subcarrier communication system based on a fixed rule as to give several subband groups, and then selecting modulation and coding parameters for use during joint coding with respect to each subband group. This particular objective can be achieved in many ways, including through the means further described in column 5, line 48 through column 6, line 48 of the '439 Patent.

121. The use of mandatory portions of the LTE standard infringes the '439 Patent. For example, the 3GPP standard TS 36.133 requires use of a user device to monitor the downlink link quality based on a cell-specific reference signal. The 3GPP standard

further requires the use of cell-specific reference signals in downlink channels as identified in TS 36.211. Based on the cell-specific reference signals, the user device is required to derive the CQI and should then report such CQI to a network as required by 3GPP standard TS 36.213 and further described in 3GPP standard TS 36.331. Moreover, 3GPP standard TS 36.300 requires the network to have the link adaptation feature that will be able to adjust the modulation and coding parameters for the downlink transmission based on the received CQI sent from a user device.

122. Upon information and belief, Defendant's mobile devices, tablets, and other devices with LTE capabilities use the mandatory portions of the LTE standard covered by the '439 Patent, including but not limited to Claim 1.

123. Defendant has infringed, and is currently infringing, the '439 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '439 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, including at least TS 36.133, 36.211, 36.213, 36.300, and 36.331. For instance, these Defendant devices include, but are not limited to, the iPhone 7, iPhone 7 Plus, and equivalents and the LTE devices listed in Appendix A.

124. More specifically, Defendant's mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards infringe at least Claim 1 of the '439 Patent because each performs adaptive modulation within an OFDM communication system by performing channel estimation through measurement of cell-

specific reference signals received on a downlink. The devices then use the channel estimation to select a recommended modulation and coding scheme combination for downlink transmission pre-stored within the devices. Such information is sent to a base station for its downlink transmission.

125. Defendant was provided one or more claim charts for the '439 Patent on at least January 16, 2015, and those charts are hereby incorporated by reference. Defendant was also provided one or more claims charts for the '439 Patent on August 4, 2015, and those charts are hereby incorporated by reference.

126. Defendant has had actual knowledge of the '439 Patent and Defendant's infringement of the '439 Patent since at least January 16, 2015, before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

127. Defendant induces third parties, including customers, to infringe the '439 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '439 Patent, including at least Claim 1. Upon information and belief, Defendant knows that the use of its mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, constitutes infringement of the '439 Patent. Defendant advertises the infringing products and services, publishes specifications and promotional literature

encouraging customers to operate the accused products and services, creates and/or distributes user manuals for the accused products and services that provide instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

128. For instance, Defendant encourages and facilitates its customers to infringe the '439 Patent by instructing customers that purchase iPhone 7 and iPhone 7 Plus mobile phones that such devices have "LTE" capability, and providing various indicators within those devices of the same.⁶ Defendant also encourages and facilitates its customers to infringe the '439 Patent by instructing customers that purchase its iPhone 7 and iPhone 7 Plus mobile phones that such devices have "[u]p to 13 hours on LTE" and providing various indicators within those devices of the same. *Id.* Additionally, Defendant encourages and facilitates its customers to infringe the '439 Patent by instructing customers to "see www.apple.com/iphone/LTE" for "details on LTE support." *Id.* Customers, pursuant to Defendant's instructions and advertisements, each directly infringe the '439 Patent, including at least Claim 1.

129. Defendant also contributes to the infringement of the '439 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '439 Patent by making, using, selling, offering to sell and/or importing components that are incorporated with third-party devices to infringe the '439 Patent, including at least

⁶ See iPhone 7 Technical Specifications, *available at* <http://www.apple.com/iphone-7/specs/> (last accessed Feb. 21, 2017); iPhone 7 Plus Technical Specification, *available at* https://support.apple.com/kb/SP744?locale=en_US (last accessed Feb. 21, 2017).

Claim 1. The accused components constitute a material part of the invention claimed by the '439 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '439 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, to perform adaptive modulation and coding. The accused components are separable from Defendant's products and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the '439 Patent. Further, because the '439 Patent is essential to the LTE standard, Defendant's devices with LTE capabilities and comply with the LTE standard are material in practicing the '439 Patent, are especially made to infringe the '439 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '439 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '439 Patent by users of Defendant's services, products, and/or features, including at least Claim 1.

130. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

131. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

SEVENTH CLAIM FOR RELIEF

Infringement of U.S. Patent No. 6,760,590

132. Inventergy incorporates by reference the foregoing paragraphs.

133. The '590 Patent issued on July 6, 2004, and is titled "Communication Terminal Apparatus, Base Station Apparatus, and Radio Communication Method."

134. Inventergy is the owner by assignment of all rights, title, and interest in the '590 Patent.

135. The '590 Patent is valid and enforceable.

136. The '590 patented technology is directed generally to a communication terminal apparatus, base station apparatus, and radio communication method to be used in a cellular communication system. One objective of the invention was to provide a communication terminal apparatus, base station apparatus, and radio communication method that make it possible to prevent a fall in downlink throughput in a communication system in which communication resources are allocated to communication terminals based on downlink channel quality. This particular objective can be achieved, among other ways, when, among information indicative of downlink channel quality, which has a possibility of decreasing the downlink throughput when the information is received erroneously in a base station, a communication terminal provides such information with less susceptibility to errors in the propagation path to

transmit, and it is thereby possible to prevent the downlink throughput from decreasing.

137. The use of mandatory portions of the LTE standard infringes the '590 Patent. For example, the 3GPP standard TS 36.212 requires use of a (20,5) code to code the CQI. Furthermore, the 3GPP standard defines the CQI index with a corresponding modulation method and code rate and requires a user device to report a CQI to eNB in uplink channel (E-UTRAN Node B), as specified in the 3GPP TS 36.213 standard. Additionally, the 3GPP standard TS 36.300 requires use of CQI to inform the scheduler about the current channel conditions as seen by a user device.

138. Upon information and belief, Defendant's mobile devices, tablets, and other devices with LTE capabilities use the mandatory portions of the LTE standard covered by the '590 Patent, including but not limited to Claim 3.

139. Defendant has infringed, and is currently infringing, the '590 Patent in violation of 35 U.S.C. § 271(a) by making, using, selling, offering for sale, and/or importing into the United States, without authority, products, equipment, software, and/or services that practice one or more claims of the '590 Patent, including without limitation Defendant's mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, including at least TS 36.212, TS 36.213, and/or TS 36.300. These Defendant devices include, but are not limited to, the iPhone 7, iPhone 7 Plus, and equivalents and the LTE devices listed in Appendix A.

140. More specifically, Defendant's mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards infringe at least Claim 3 of the

'590 Patent because each device measures downlink channel quality and transmits channel quality information to a base station in a cellular network, wherein the upper digit (or most significant bit) is assigned to a larger number of bits during the encoding process of the channel quality information, and a lower digit (or rest of the bits) is assigned to a smaller number of bits during the same encoding process.

141. Defendant was provided one or more claim charts for the '590 Patent on at least January 16, 2015, and those charts are hereby incorporated by reference. Defendant was also provided one or more claims charts for the '590 Patent on August 4, 2015, and those charts are hereby incorporated by reference.

142. Defendant has had actual knowledge of the '590 Patent and Defendant's infringement of the '590 Patent since at least January 16, 2015, before the filing of this Complaint. Despite this knowledge, Defendant continued its infringing activities despite an objectively high likelihood that its activities constituted infringement of a valid patent, and this risk was either known or so obvious that it should have been known to Defendant. Thus, Defendant's infringement has been, and continues to be, willful and deliberate.

143. Defendant induces third parties, including customers, to infringe the '590 Patent in violation of 35 U.S.C. § 271(b) by encouraging and facilitating them to perform actions that Defendant knows to be acts of infringement of the '590 Patent, including at least Claim 3. Upon information and belief, Defendant knows that the use of its mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, constitutes infringement of the '590 Patent. Defendant advertises the

infringing products and services, publishes specifications and promotional literature encouraging customers to operate the accused products and services, creates and/or distributes user manuals for the accused products and services that provide instruction and/or encourage infringing use, and offers support and/or technical assistance to its customers that provide instructions on and/or encourage infringing use.

144. For instance, Defendant encourages and facilitates its customers to infringe the '590 Patent by instructing customers that purchase iPhone 7 and iPhone 7 Plus mobile phones that such devices have "LTE" capability, and providing various indicators within those devices of the same.⁷ Defendant also encourages and facilitates its customers to infringe the '590 Patent by instructing customers that purchase its iPhone 7 and iPhone 7 Plus mobile phones that such devices have "[u]p to 13 hours on LTE" and providing various indicators within those devices of the same. *Id.* Additionally, Defendant encourages and facilitates its customers to infringe the '590 Patent by instructing customers to "see www.apple.com/iphone/LTE" for "details on LTE support." *Id.* Customers, pursuant to Defendant's instructions and advertisements, each directly infringe the '590 Patent, including at least Claim 3.

145. Defendant also contributes to the infringement of the '590 Patent in violation of 35 U.S.C. § 271(c). Defendant contributes to infringement of the '590 Patent by making, using, selling, offering to sell and/or importing components that are

⁷ See iPhone 7 Technical Specifications, *available at* <http://www.apple.com/iphone-7/specs/> (last accessed Feb. 21, 2017); iPhone 7 Plus Technical Specification, *available at* https://support.apple.com/kb/SP744?locale=en_US (last accessed Feb. 21, 2017).

incorporated with third-party devices to infringe the '590 Patent, including at least Claim 3. The accused components constitute a material part of the invention claimed by the '590 Patent at least because they work in conjunction with third-party products or services, and they are specifically made to operate in a manner that infringes the '590 Patent by, among other things, enabling various devices, such as mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, to perform adaptive modulation and coding. The accused components are separable from Defendant's products and are not staple articles or commodities of commerce suitable for substantial non-infringing use because they necessarily operate in a manner that infringes the '590 Patent. Further, because the '590 Patent is essential to the LTE standard, Defendant's devices with LTE capabilities and comply with the LTE standard are material in practicing the '590 Patent, are especially made to infringe the '590 Patent, and have no substantial non-infringing uses. Moreover, Defendant publishes or has published information about infringing aspects of various devices. These devices include mobile devices, tablets, and other devices with LTE capabilities and comply with LTE standards, that are practiced using the components that Defendant provides. As stated above, Defendant knew of the '590 Patent and knew that its actions would lead to infringement of that patent. Therefore, Defendant is also contributing to the direct infringement of the '590 Patent by users of Defendant's services, products, and/or features, including at least Claim 3.

146. Inventergy has suffered and continues to suffer damages and irreparable harm as a result of Defendant's past and ongoing infringement.

147. Unless Defendant's infringement is permanently enjoined, Inventergy will continue to be damaged and irreparably harmed.

JURY DEMAND

Plaintiff Inventergy hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

REQUEST FOR RELIEF

Inventergy respectfully asks that the Court enter judgment in its favor as follows:

- A. Finding that Defendant has infringed and are infringing each of the Asserted Patents;
- B. Finding that Defendant's infringement of the Asserted Patents has been and continues to be willful;
- C. Finding that each of the Asserted Patents is valid and enforceable;
- D. Awarding Inventergy damages adequate to compensate for Defendant's past and present infringement, but in no event less than a reasonable royalty;
- E. Awarding an accounting and supplemental damages for those acts of infringement committed by Defendant subsequent to the discovery cut-off date in this action through the date Final Judgment is entered;
- F. Ordering that damages for infringement of the Asserted Patents be trebled as provided for by 35 U.S.C. § 284 for Defendant's willful infringement of the Asserted Patents;
- G. Finding that this case is exceptional;

- H. Awarding Inventergy with its attorneys' fees and costs, together with pre-judgment and post-judgment interest;
- I. Permanently enjoining Defendant and its parents, subsidiaries, affiliates, officers, directors, agents, servants, employees, successors and assigns, and all others in active concert or participation with any of the foregoing from any further acts of infringement, including contributing to and/or inducing infringement, of the Asserted Patents; and
- J. Any further relief that this Court deems just and proper.

Dated: February 24, 2017

Respectfully submitted,

By: /s/ Brian E. Farnan

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