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Attorneys for Plaintiff *Wi-LAN*

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

WI-LAN INC.; WI-LAN USA, INC.; & WI-LAN LABS, INC.,

Plaintiffs,

vs.

LENOVO (UNITED STATES) INC.; LENOVO HOLDING COMPANY, INC.; MOTOROLA MOBILITY LLC; & MOTOROLA MOBILITY HOLDINGS, LLC.

Defendants.

Case No. 3:17-cv-365

FIRST AMENDED COMPLAINT FOR INFRINGEMENT OF U.S. PATENT NOS. 8,787,924, 8,867,351, 9,226,320, & 9,497,743

DEMAND FOR JURY TRIAL

Plaintiffs Wi-LAN Inc., Wi-LAN USA, Inc. and Wi-LAN Labs, Inc. (collectively, "Wi-LAN" or "Plaintiffs") hereby submit this First Amended Complaint against Defendants Lenovo (United States) Inc., Lenovo Holding Company, Inc., Motorola Mobility LLC, and Motorola Mobility Holdings, LLC, (collectively, "Lenovo" or "Defendants").

NATURE OF ACTION

1. This is an action for infringement of U.S. Patent Nos. 8,787,924 ("the '924 Patent"), 8,867,351 ("the '351 Patent"), 9,226,320 ("the '320 Patent"), and 9,497,743 ("the '743 Patent").

THE PARTIES

2. Plaintiff Wi-LAN INC. is a corporation organized and existing under the laws of Canada with its principal place of business at 303 Terry Fox Drive, Suite 300, Ottawa, ON, K2K 3J1, Canada.

3. Plaintiff Wi-LAN USA, Inc. is a corporation organized and existing under the laws of Florida with its principal executive office at 303 Terry Fox Drive, Suite 300, Ottawa, ON, K2K 3J1, Canada, and a principal business office at 600 Anton Blvd., Suite 1350, Costa Mesa, CA, 92626.

4. Plaintiff Wi-LAN Labs, Inc. is a corporation organized and existing under the laws of Delaware with its principal executive office at 303 Terry Fox Drive, Suite 300, Ottawa, ON, K2K 3J1, Canada, and a principal business office at 5962 La Place Court Suite 265, Carlsbad, CA 92008.

5. Lenovo (United States) Inc. is a Delaware corporation with its principal place of business at 1009 Think Place, Morrisville, North Carolina 27560. Lenovo (US) Inc. may be served via its registered agent, CT Corporation System, 818 W 7th St Ste 930, Los Angeles, CA 90017.

6. Lenovo Holding Company, Inc. is a Delaware corporation with its principal place of business at 1009 Think Place, Morrisville, North Carolina 27560. Lenovo Holding Company, Inc. may be served via its registered agent, The Corporation Trust Company, Corporation Trust Center 1209 Orange St, Wilmington, DE 19801.

7. Motorola Mobility LLC is a Delaware corporation with its principal place of business at 222 Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654. Motorola Mobility LLC may be served via its registered agent, The Corporation Trust Company, Corporation Trust Center 1209 Orange St, Wilmington, DE 19801.

8. Motorola Mobility Holdings LLC is a Delaware corporation with its principal place of business at 222 Merchandise Mart Plaza, Suite 1800, Chicago, IL 60654. Motorola Mobility Holdings LLC may be served via its registered agent, The Corporation Trust Company, Corporation Trust Center 1209 Orange St, Wilmington, DE 19801.

JURISDICTION AND VENUE

9. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 101 *et seq*.

10. This Court has personal jurisdiction over Lenovo as personal jurisdiction over Lenovo in this action comports with due process. Lenovo has conducted and regularly conducts business within the United States and this judicial district. Lenovo has continuous and systematic contacts with California and this judicial district. Furthermore, Lenovo has purposefully availed itself of the privileges of conducting business in the United States and this judicial district. Lenovo has sought protection and benefit from the laws of the State of California

by maintaining offices in California and this judicial district, by selling products with the expectation and/or knowledge that they will be purchased by consumers in this judicial district, and/or by offering advertisements targeted at consumers in this judicial district, and/or by having partners and customers in this judicial district. In California and in this judicial district, Lenovo regularly does or solicits business and engages in other persistent courses of conduct. Lenovo derives substantial revenue from services provided to individuals in California and in this judicial district. Plaintiffs' causes of action arise directly from Lenovo's activities in this judicial district. In particular, Lenovo's subsidiary, Motorola Mobility, has significant operations in San Diego.

11. Joinder of Defendants is proper because Defendants are related parties who are either jointly and severally liable for infringement, or who make, use, sell, offer for sale, or import the same or similar accused products that practice the same 4G LTE standards. Further, upon information and belief, Defendants use the same chip suppliers and chipsets in their infringing products, meaning the factual question of infringement will substantially overlap between Defendants. Further, Plaintiffs anticipate that there will be substantial overlap during the discovery process.

12. Venue is proper in this federal district pursuant to 28 U.S.C. §§ 1391(b)-(c) and 1400(b) in that one or more Defendants have done business in this district, have regular and established places of business in this district, have committed acts of infringement in this district, and continue to commit acts of infringement in this district, entitling Plaintiffs to relief.

13. No other venue is more convenient than the Southern District of California. Plaintiff Wi-LAN Labs, Inc. resides in this district. Three of the four patents in suit were developed in this district (and the other was developed

elsewhere in California). Further, many of the inventors of the patents-in-suit, including Ken Stanwood, Yair Bourlas, Adam Newham, and Lei Wang currently reside in this district. In addition, Wi-LAN's current U.S. headquarters is also located in California (600 Anton Boulevard, Suite 1350, Costa Mesa, California 92626). Also, important third-party suppliers for Defendants' infringing products reside in this district.

BACKGROUND OF THE TECHNOLOGY

14. Wi-LAN Labs developed advanced 4G technologies and products for Wi-LAN and others in the wireless industry that enhance the capacity, quality of user experience, and connectivity of 4G (and next generation 5G) mobile devices and networks.

15. Several of the 4G patents asserted in this action were developed by Wi-LAN's own Ken Stanwood, the former president of Wi-LAN Labs and current CTO at Wi-LAN INC., and his team.

16. Mr. Stanwood has played a leadership role in the development of 4G technologies and standards for more than a decade, starting with the industry's first major 4G cellular initiative, referred to as WiMAX. He served as Vice Chair of the IEEE 802.16 standards committee for WiMAX from 2003-2006 and as a principal contributor to the original IEEE 802.16 standard for 4G cellular networks and mobile devices.

17. Mr. Stanwood has written extensively on 4G technologies, including coauthoring a popular textbook on the subject, and has been awarded 125 U.S. patents, with many more patent applications currently pending before the United States Patent Office and worldwide, many of which relate to 4G technologies.

18. Like Ken Stanwood, Wi-LAN's founders, Michel Fattouche and Hatim Zaghloul, are widely recognized and acknowledged as wireless industry

pioneers. Their technologies, patents and writings have been cited in patents and publications written by thousands of engineers and scientists in the wireless industry.

19. Wi-LAN's founders developed key cellular "data" technologies, including the W-OFDM air interface, to enable data to be exchanged at desktop speeds over a wireless channel, such as in Wi-Fi networks, or from mobile devices in 4G cellular networks. Wi-LAN's technologies have made Wi-Fi and 4G in mobile devices possible.[1]

20. The Wi-LAN success story is featured in major publications worldwide, including in such publications as Scientific American[2] and Time Magazine,[3] and in many others. Wi-LAN and its founders have also been the subject of numerous industry awards for their wireless innovations, and for their contribution to the growth in wireless data capability present in today's smartphones, tablets, and other mobile devices.

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[1] *See, e.g.*, *Ergen, Mustafa*, *Mobile Broadband: Including WiMAX and LTE*, John Wiley & Sons, 2009 at p. 110, Section 4.1 "Principles of OFDM: Introduction" (recognizing one of Wi-LAN's first patents, U.S. Patent No. 5,282,222, to W-OFDM as a major milestone in the development of Wi-Fi and 4G technologies, turning a single lane wireless communication channel into a multi-lane super highway, and enabling mobile devices to transmit and receive data at desktop speeds).

[2] The Future of Wireless, *Scientific American*, October 2000 at p. 57 ("To date, wireless multiplexing hasn't been exploited for cellular systems…. That may change soon…. Wi-LAN holds a number of key patents for multiplexing technology known as wideband orthogonal frequency division multiplexing, or W-OFDM").

[3] Wi-LAN Shows How to be Successful-and Canadian-in the Global Economy, *Time Magazine*, April 3, 2000.

21. One of Wi-LAN's co-founders is featured in one of Canada's leading business publications as among the Top 100 Canadians of the 20th century for Wi-LAN's wireless innovations.[4] And Wi-LAN's original wireless designs and first wireless mobile device have been displayed in the Canadian equivalent of the Smithsonian Institution.

22. Enabling high-speed wireless data capability in mobile devices was no small task–it posed incredible challenges–something we take for granted today with desktop speeds now standard in 4G mobile devices.

23. Over the years, Wi-LAN, Wi-LAN Labs, and their predecessors have invested hundreds of millions of dollars in developing, making and selling many of the world's first fixed and mobile devices capable of transmitting and receiving wireless data at desktop speeds.

24. Wi-LAN's products which had 4G data speeds include, among others, the I.WILL, BWS 300, LIBRA 3000, LIBRA 5800, LIBRA MX, and the LIBRA Mobilis.

25. Wi-LAN was the first company in the world to build Wi-Fi and 4G data speeds into mobile devices, with speeds reaching up to 100 megabits per second (Mbps), and it did so a decade before 4G would become the standard in the wireless industry that it is today.

26. A number of Wi-LAN's advanced 4G technologies have their origin in work started by Wi-LAN's Ken Stanwood and his team while at Ensemble Communications ("Ensemble"), a San Diego company that Mr. Stanwood helped

[4] Great Canadians, *Maclean's*, July 1, 2000 ("Riding the wave of invention ... Wi-LAN is one of those next generation companies. Its technology may well become the base for what some call the coming wireless revolution: the ability to e-mail, surf the Net, adjust the lights in your home and order theater tickets from a cellphone or handheld computer.")

grow (then, as Ensemble's Chief Technology Officer) to over 200 engineers, scientists, and support personnel.

27. Others of Wi-LAN's advanced 4G technologies have their origin in work created at NextWave Communications, another San Diego company where Mr. Stanwood served as a Vice President. And yet other technologies were first developed at SOMA network, a California-based company involved in 4G technologies.

28. The advanced 4G technologies developed by Mr. Stanwood and his team were employed in the network stacks utilizing the 4G WiMAX cellular standard, and were subsequently adopted for use in the network stacks utilizing the 4G LTE cellular standard used in today's 4G mobile devices.

29. These advanced 4G technologies include:

(i) the bandwidth-on-demand and periodic bandwidth services built into 4G mobile devices to enable apps installed on such devices to have the bandwidth they need, when they need it, in real-time;

(ii) the quality-of-service functions built into 4G mobile devices to enable mobile devices to prioritize the services that have the most pressing need for bandwidth; and

(iii) the handoff functionality built into 4G mobile devices to identify particular devices and use pre-allocated codes to respond faster to requests from mobile devices.

30. The efforts of Mr. Stanwood and other Wi-LAN inventors in developing these advanced 4G technologies have enabled 4G mobile devices to support a variety of services popular among users of Defendants' 4G LTE mobile devices, such as voice, conversational video, live streaming of video and music,

real-time gaming, video and photo sharing, email, and instant messaging, all in the palm of your hand ("4G Network Services").

31. Wi-LAN's wireless technologies and patents, including its advanced 4G technologies, have been licensed by nearly all companies in the wireless industry, comprising more than 130 companies.

32. Defendants' infringement gives them an unfair advantage over their competitors, many of whom have chosen to do the right thing and license their use of Wi-LAN's wireless technologies and patents. Many of Defendants' major competitors in the mobile device industry, including Samsung, HTC, Nokia and BlackBerry have licensed Wi-LAN's wireless technologies and patents.

33. Wi-LAN has made numerous efforts to license the unauthorized use of its wireless technologies by the Defendants, but Defendants have consistently refused to take a license, choosing to use Wi-LAN's 4G technologies without paying anything for that right.

34. Defendants have willfully chosen to not respect the intellectual property of Wi-LAN, including three of the 4G patents asserted in this action directed to Wi-LAN's advanced 4G technologies, and it does so despite understanding the importance of intellectual property.

35. Before initiating litigation, Wi-LAN made substantial efforts to license Defendants' use of Wi-LAN's advanced 4G technologies and patents in their 4G LTE mobile devices, expecting that Defendants would proceed in good faith.

36. During the spring of 2016, Wi-LAN contacted Defendants to engage in licensing the patents-in-suit relating to LTE and 4G wireless technology. Defendants initially expressed interest. But despite Wi-LAN's repeated efforts, Defendants failed to take a license.

37. Defendants' actions have forced Wi-LAN's hand, leaving it with no choice but to protect its intellectual property through litigation.

DEFENDANTS' INFRINGING PRODUCTS

38. Lenovo directly or indirectly through subsidiaries or affiliated companies markets, distributes, manufactures, imports, sells, and/or offers for sale wireless communication products, such as products compliant with the 3rd Generation Partnership Project ("3GPP") 4G LTE standard, including but not limited to Moto Z Force Droid, Moto Z, Moto Z Droid, Moto Z Play, Moto Z Play Droid, Moto G4 Plus, Moto G4, Moto G4 Play, Moto G3, Moto G, Moto E, Moto E3, Moto X, Moto X Pure Edition, Droid Maxx, Droid Maxx 2, Nexus 6, Nexus 5X, Droid Turbo, Droid Turbo 2, Phab 2 Pro, Phab 2, Tab S8, Tab 2, Tab3, Yoga Tab 3, ThinkPad Tab 2, Yoga Book, ThinkPad 10, ThinkPad Mobile Broadband modules (collectively, the "Lenovo Accused 4G LTE Devices"), in the United States and in this district. As some of these products, and additional Lenovo LTE devices, are known by internal model numbers, codenames, or have alternate versions and iterations, discovery will be necessary to finalize a list of devices that infringe the patents-in-suit. The Lenovo Accused 4G LTE Devices support at least Release 8, et seq. of the 4G LTE standard.

39. Upon information and belief, the Lenovo Accused 4G LTE Devices also include software and associated hardware that prioritize the transmission of data generated by various applications that run on these Lenovo products, and in doing such prioritization utilize the claimed inventions of the patents asserted in this action.

INFRINGEMENT OF U.S. PATENT NO. 8,787,924

40. On July 22, 2014, United States Patent No. 8,787,924 ("the '924 Patent") was duly and legally issued for inventions entitled "Methods and Systems

for Transmission of Multiple Modulated Signals Over Wireless Networks." Wi-LAN owns the '924 Patent and holds the right to sue and recover damages for infringement thereof.

41. On information and belief, Defendants have directly infringed and continue to directly infringe numerous claims of the '924 Patent, including at least claims 1 and 17, by manufacturing, using, selling, offering to sell, and/or importing their Lenovo Accused 4G LTE Devices. Defendants are liable for infringement of the '924 Patent pursuant to 35 U.S.C. § 271(a).

42. For example, the Lenovo Accused 4G LTE Devices comply with the 4G LTE standards, including the UL-SCH data transfer procedure specified by 3GPP TS 36.321 at section 5.4. In particular, the Lenovo Accused 4G LTE Devices first transmit a Scheduling Request (*i.e.*, "a one bit message to the base station to request an allocation of UL bandwidth in which to transmit a bandwidth request") and then subsequently transmit a Buffer Status Report (*i.e.*, a "bandwidth request indicative of an amount of pending UL data"). Thereafter, the Lenovo Accused 4G LTE Devices dynamically allocate the assigned UL bandwidth amongst their respective "UL services based on a QoS parameter of a respective service."

43. Defendants have been and are now indirectly infringing at least one claim of the '924 Patent in accordance with 35 U.S.C. § 271(b) in this district and elsewhere in the United States. More specifically, Defendants have been and are now actively inducing direct infringement by other persons (*e.g.*, Defendants' customers who use, sell or offer for sale products that embody and/or otherwise practice one or more claims of the '924 Patent).

44. Prior to the filing of the original complaint, Defendants knew that they infringed the '924 Patent, or willfully blinded themselves to that infringement. On

April 18, 2016, Wi-LAN invited Lenovo to license its patents covering "4G wireless technology." On May 11, 2016, Wi-LAN provided Lenovo with detailed infringement claim charts for the '924, '351, and '320 Patents, and identified representative infringing products as the "Moto X, Moto G, Moto E, DROID (Turbo 2, Maxx2, Turbo, Mini), Lenovo Phab, Lenovo A Series, Lenovo P Series, Lenovo Vibe Series, Lenovo K5Note, and Lenovo Tablets and Computers with Mobile Broadband." Wi-LAN then presented those claim charts and reiterated Lenovo's infringement during a May 25, 2016 meeting in Chicago with Kathryn Tsirigotis (Lenovo's Director of Licensing) and Gary Cunningham (Senior Counsel at Motorola). Despite Wi-LAN's repeated follow-up requests on June 2, June 23 and September 21, 2016, Lenovo never replied, thereby effectively refusing to take a license. Through these communications and the meeting, Defendants gained knowledge that they were infringing the '924 Patent.

45. Accordingly, by at least the filing of the original complaint, Defendants had knowledge of the '924 Patent, that their actions resulted in a direct infringement of the '924 Patent, that their customers' use of the 4G LTE handsets in the manner in which they were designed resulted in a direct infringement of the '924 Patent and knew or were willfully blind that their actions would induce direct infringement by others and intended that their actions would induce direct infringement by others.

46. Lenovo designs the Lenovo Accused 4G LTE Devices to be used by its customers on 4G LTE networks.

47. Lenovo intends for its customers to use the Lenovo Accused 4G LTE Devices on 4G LTE networks.

48. Defendants provide user manuals and other instruction material for their devices that instruct their customers to use Defendants' devices in their normal and customary way to communicate via 4G LTE.

49. For example, Lenovo specifically advertises the accused devices for the purpose of connecting via 4G LTE, touting the benefits of the 4G LTE technology made possible by the technology embodied in the patents-in-suit. *See, e.g.*, http://www3.lenovo.com/us/en/faqs/pc-life-faqs/what-is-lte-a/ ("To meet consumer needs and provide options that take advantage of current technologies, Lenovo's X Series and T Series laptops offer available 4G wireless connections. By leveraging a 4G network, these laptops provide for faster browsing speeds, greater multimedia usage, and enhanced usability, among other benefits… In comparing a 3G LTE network with a 4G LTE-Advanced network, you will find that there is no comparison. An LTE-A network offers much faster peak speeds, for both downloads and uploads, as well as greater reliability, more seamless handover between networks, and global roaming. If your laptop is not 4G compatible, its online capabilities are severely limited. In every objective metric, LTE-A is superior to 3G LTE. Subjectively, a 4G LTE-A network can be expected to provide a much more fulfilling and rewarding user experience.")

50. In its advertisements to consumers, Lenovo also correctly concludes that its customers use the 4G LTE devices as designed and intended by Lenovo – to connect to 4G LTE networks using the steps detailed herein, and benchmarks various specifications – battery life, for example – based on those usage patterns. *See, e.g.*, https://motorola-global-portal.custhelp.com/app/home/ ("All battery life claims are approximate and based on a standard mixed use profile. The mixed use profile is based on Motorola devices on major 4G LTE networks with excellent

coverage and includes both usage and standby time. Out-of-box settings are applied to the mixed use profile to project battery performance.").

51. Further, Lenovo's website documentation provides instructions to its customers for using the Lenovo devices on 4G LTE networks. *See, e.g.*, https://motorola-global-portal.custhelp.com/ci/fattach/get/2057848/1485874307/redirect/1/filename/68018224001B.pdf (teaching customers how to use the 4G LTE "Mobile network" and how to "process[] tons of information and apps at 4G LTE speed").

52. Lenovo's customers use the Lenovo Accused 4G LTE Devices for the purpose for which Lenovo designs and advertises them, and in the manner instructed by Lenovo – to connect to and use 4G LTE networks.

53. In using the Lenovo Accused 4G LTE Devices on 4G LTE networks, the customers' device first transmits a Scheduling Request (*i.e.*, "a one bit message to the base station to request an allocation of UL bandwidth in which to transmit a bandwidth request") and then subsequently transmits a Buffer Status Report (*i.e.*, a "bandwidth request indicative of an amount of pending UL data"). Thereafter, the accused devices dynamically allocate the assigned UL bandwidth amongst their respective "UL services based on a QoS parameter of a respective service."

54. In this way, Lenovo instructs and intends its customers to take steps that Lenovo knows constitute direct infringement of the '924 Patent, and its customers do indeed take those steps.

55. Through their manufacture and sales of their Lenovo Accused 4G LTE Devices, Defendants specifically intended for their customers to infringe the '924 Patent. Further, Defendants were aware that these normal and customary activities would infringe the '924 Patent. Defendants performed the acts that constitute induced infringement, and that would induce actual infringement, with

knowledge of the '924 Patent and with the knowledge or willful blindness that the induced acts would constitute direct infringement.

56. Accordingly, a reasonable inference is that Defendants specifically intend for others, such as their customers, to directly infringe at least claims 1 and 17 of the '924 Patent in the United States because Defendants had knowledge of the '924 Patent and actively induced others (*e.g.*, its customers) to directly infringe the '924 Patent by using, selling, or offering to sell Lenovo's Accused 4G LTE Devices.

57. Defendants have been and are now indirectly infringing at least one claim of the '924 Patent in accordance with 35 U.S.C. § 271(c) in this district and elsewhere in the United States. More specifically, Defendants have been and are now providing non-staple articles of commerce to others for use in an infringing system or method with knowledge of the '924 Patent, and with knowledge that the use of the Lenovo Accused 4G LTE Devices resulted in a direct infringement of the '924 Patent by their customers, and with knowledge that these non-staple articles of commerce are used as a material part of the claimed invention of the '924 Patent.

58. Defendants' devices compliant with 4G LTE include components comprising an application processor and a baseband processor specifically designed to support communication and transmission of data over 4G LTE-compliant networks. These components are mounted to a circuit board in Defendants' accused devices and, absent these components, Defendants' devices compliant with 4G LTE would not function in an acceptable manner to send or receive data over 4G LTE networks. Further, the sole purpose of the 4G LTE components is to provide the infringing 4G LTE functionality, and do not serve any substantial use that does not infringe the '924 Patent. A reasonable inference to

be drawn from the facts set forth is that these components in Defendants' devices are especially made or especially adapted to operate in the accused devices to provide wireless communication, including the transmission of data in accordance with the 4G LTE standard. Further, a reasonable inference to be drawn from the facts is that these components comprising an application processor and a baseband processor are intended to support communication of data over a 4G LTE network and are not staple articles or commodities of commerce, have no substantial non-infringing uses, and that the use of the components is required for operation of the devices to send or receive data over a 4G LTE-compliant network. Any other use would be unusual, far-fetched, illusory, occasional, aberrant, or experimental, given that they are made for the sole purpose of providing 4G LTE connectivity.

59. The components comprising an application processor and a baseband processor designed to support communication of data using 4G LTE in Defendants' devices are each a material part of the invention of the '924 Patent and are especially made for the infringing manufacture, sale, and use of Defendants' accused devices. Defendants' devices, including those components, are especially made or adapted to infringe the '924 Patent, and have no substantial non-infringing uses.

60. The '924 Patent is valid and enforceable.

61. Defendants' infringement of the '924 Patent is willful and has damaged Wi-LAN, and Defendants are liable to Wi-LAN in an amount to be determined at trial that compensates Wi-LAN for the infringement, which by law can be no less than a reasonable royalty.

62. As a result of Defendants' infringement of the '924 Patent, Wi-LAN has suffered irreparable harm and will continue to suffer loss and injury unless Defendants are enjoined by this Court.

INFRINGEMENT OF U.S. PATENT NO. 8,867,351

63. On October 21, 2014, United States Patent No. 8,867,351 ("the '351 Patent") was duly and legally issued for inventions entitled "Apparatus, System, and Method for the Transmission of Data with Different QoS Attributes." Wi-LAN owns the '351 Patent and holds the right to sue and recover damages for infringement thereof.

64. On information and belief, Defendants have directly infringed and continue to directly infringe numerous claims of the '351 Patent, including at least claims 1 and 7, by manufacturing, using, selling, offering to sell, and/or importing the Lenovo Accused 4G LTE Devices. Defendants are liable for infringement of the '351 Patent pursuant to 35 U.S.C. § 271(a).

65. For example, the Lenovo accused 4G LTE devices comply with the 4G LTE standards, including the UL-SCH data transfer procedure specified by 3GPP TS 36.321 at section 5.4 and, even more specifically, the Logical Channel Prioritization procedure specified at section 5.4.3.1. In particular, the accused 4G LTE devices transfer data on "logical channels." Prior to transfer, the MAC entity (*i.e.*, "link controller") queues data into "logical channel queues" that can have a "priority" and a prioritized bit rate (*i.e.*, "traffic shaping rate"). The accused 4G LTE devices then examine the available channels to determine which queues to assign to which channels, and attempt to fill the transmission capacity of the channels. In this way, highest priority transmissions will be made first.

66. Defendants have been and are now indirectly infringing at least one claim of the '351 Patent in accordance with 35 U.S.C. § 271(b) in this district and elsewhere in the United States. More specifically, Defendants have been and are now actively inducing direct infringement by other persons (*e.g.*, Defendants'

customers who use, sell or offer for sale products that embody and/or otherwise practice one or more claims of the '351 Patent).

67. Prior to the filing of the original complaint, Defendants knew that they infringed the '351 Patent, or willfully blinded themselves to that infringement. On April 18, 2016, Wi-LAN invited Lenovo to license its patents covering "4G wireless technology." On May 11, 2016, Wi-LAN provided Lenovo with detailed infringement claim charts for the '924, '351, and '320 Patents, and identified representative infringing products as the "Moto X, Moto G, Moto E, DROID (Turbo 2, Maxx2, Turbo, Mini), Lenovo Phab, Lenovo A Series, Lenovo P Series, Lenovo Vibe Series, Lenovo K5Note, and Lenovo Tablets and Computers with Mobile Broadband." Wi-LAN then presented those claim charts and reiterated Lenovo's infringement during a May 25, 2016 meeting in Chicago with Kathryn Tsirigotis (Lenovo's Director of Licensing) and Gary Cunningham (Senior Counsel at Motorola). Despite Wi-LAN's repeated follow-up requests on June 2, June 23 and September 21, 2016, Lenovo never replied, thereby effectively refusing to take a license. Through these communications and the meeting, Defendants gained knowledge that they were infringing the '351 Patent.

68. Accordingly, by at least the filing of the original complaint, Defendants had knowledge of the '351 Patent, that their actions resulted in a direct infringement of the '351 Patent, that their customers' use of the 4G LTE handsets in the manner in which they were designed resulted in a direct infringement of the '351 Patent and knew or were willfully blind that their actions would induce direct infringement by others and intended that their actions would induce direct infringement by others.

69. Lenovo designs the 4G LTE devices to be used by its customers on 4G LTE networks.

70. Lenovo intends for its customers to use the 4G LTE devices on 4G LTE networks.

71. Defendants provide user manuals and other instruction material for their devices that instruct their customers to use Defendants' devices in their normal and customary way to communicate via 4G LTE.

72. For example, Lenovo specifically advertises the accused devices for the purpose of connecting via 4G LTE, touting the benefits of the 4G LTE technology made possible by the technology embodied in the patents-in-suit. *See, e.g.*, http://www3.lenovo.com/us/en/faqs/pc-life-faqs/what-is-lte-a/ ("To meet consumer needs and provide options that take advantage of current technologies, Lenovo's X Series and T Series laptops offer available 4G wireless connections. By leveraging a 4G network, these laptops provide for faster browsing speeds, greater multimedia usage, and enhanced usability, among other benefits… In comparing a 3G LTE network with a 4G LTE-Advanced network, you will find that there is no comparison. An LTE-A network offers much faster peak speeds, for both downloads and uploads, as well as greater reliability, more seamless handover between networks, and global roaming. If your laptop is not 4G compatible, its online capabilities are severely limited. In every objective metric, LTE-A is superior to 3G LTE. Subjectively, a 4G LTE-A network can be expected to provide a much more fulfilling and rewarding user experience.")

73. In its advertisements to consumers, Lenovo also correctly concludes that its customers use the 4G LTE devices as designed and intended by Lenovo – to connect to 4G LTE networks using the steps detailed herein, and benchmarks various specifications – battery life, for example – based on those usage patterns. *See, e.g.*, https://motorola-global-portal.custhelp.com/app/home/ ("All battery life claims are approximate and based on a standard mixed use profile. The mixed use

profile is based on Motorola devices on major 4G LTE networks with excellent coverage and includes both usage and standby time. Out-of-box settings are applied to the mixed use profile to project battery performance.").

74. Further, Lenovo's website documentation provides instructions to its customers for using the Lenovo devices on 4G LTE networks. *See, e.g.*, https://motorola-global-portal.custhelp.com/ci/fattach/get/2057848/1485874307/redirect/1/filename/68018224001B.pdf (teaching customers how to use the 4G LTE "Mobile network" and how to "process[] tons of information and apps at 4G LTE speed").

75. Lenovo's customers use the accused 4G LTE devices for the purpose for which Lenovo designs and advertises them, and in the manner instructed by Lenovo – to connect to and use 4G LTE networks.

76. In using the devices on 4G LTE networks, the customers' 4G LTE devices transfer data on "logical channels." Prior to transfer, the MAC entity (i.e., "link controller") queues data into "logical channel queues" that can have a "priority" and a prioritized bit rate (i.e., "traffic shaping rate"). The accused 4G LTE devices then examine the available channels to determine which queues to assign to which channels, and attempt to fill the transmission capacity of the channels. In this way, highest priority transmissions will be made first.

77. In this way, Lenovo instructs and intends its customers to take steps that Lenovo knows constitute direct infringement of the '351 Patent, and its customers do indeed take those steps.

78. Accordingly, a reasonable inference is that Defendants specifically intend for others, such as their customers, to directly infringe one or more claims of the '351 Patent in the United States because Defendants had knowledge of the

'351 Patent and actively induced others (*e.g.*, its customers) to directly infringe the '351 Patent by using, selling, or offering to sell Defendants' 4G LTE devices.

79. Defendants have been and are now indirectly infringing at least one claim of the '351 Patent in accordance with 35 U.S.C. § 271(c) in this district and elsewhere in the United States. More specifically, Defendants have been and are now providing non-staple articles of commerce to others for use in an infringing system or method with knowledge of the '351 Patent, and with knowledge that the use of their products resulted in a direct infringement of the '351 Patent by their customers, and with knowledge that these non-staple articles of commerce are used as a material part of the claimed invention of the '351 Patent.

80. Defendants' devices compliant with 4G LTE include components comprising an application processor and a baseband processor specifically designed to support communication and transmission of data over 4G LTE-compliant networks. These components are mounted to a circuit board in Defendants' accused devices and, absent these components, Defendants' devices compliant with 4G LTE would not function in an acceptable manner to send or receive data over 4G LTE networks. Further, the sole purpose of the 4G LTE components is to provide the infringing 4G LTE functionality, and do not serve any substantial use that does not infringe the '351 Patent. A reasonable inference to be drawn from the facts set forth is that these components in Defendants' devices are especially made or especially adapted to operate in the accused devices to provide wireless communication, including the transmission of data in accordance with the 4G LTE standard. Further, a reasonable inference to be drawn from the facts is that these components comprising an application processor and a baseband processor are intended to support communication of data over a 4G LTE network and are not staple articles or commodities of commerce, and that the use of the

components is required for operation of the devices to send or receive data over a 4G LTE-compliant network. Any other use would be unusual, far-fetched, illusory, occasional, aberrant, or experimental, given that they are made for the sole purpose of providing 4G LTE connectivity.

81. The components comprising an application processor and a baseband processor designed to support communication of data using 4G LTE in Defendants' devices are each a material part of the invention of the '351 Patent and are especially made for the infringing manufacture, sale, and use of Defendants' accused devices. Defendants' devices, including those components, are especially made or adapted to infringe the '351 Patent, and have no substantial non-infringing uses.

82. The '351 Patent is valid and enforceable.

83. Defendants' infringement of the '351 Patent is willful and has damaged Wi-LAN, and Defendants are liable to Wi-LAN in an amount to be determined at trial that compensates Wi-LAN for the infringement, which by law can be no less than a reasonable royalty.

84. As a result of Defendants' infringement of the '351 Patent, Wi-LAN has suffered irreparable harm and will continue to suffer loss and injury unless Defendants are enjoined by this Court.

INFRINGEMENT OF U.S. PATENT NO. 9,226,320

85. On December 29, 2015, United States Patent No. 9,226,320 ("the '320 Patent") was duly and legally issued for inventions entitled "Pre-Allocated Random Access Identifiers." Wi-LAN owns the '320 Patent and holds the right to sue and recover damages for infringement thereof.

86. On information and belief, Defendants have directly infringed and continue to directly infringe numerous claims of the '320 Patent, including at least

claims 16 and 27, by manufacturing, using, selling, offering to sell, and/or importing their respective accused 4G LTE devices. Defendants are liable for infringement of the '320 Patent pursuant to 35 U.S.C. § 271(a).

87. For example, the Lenovo accused 4G LTE devices comply with the 4G LTE standards, including the non-contention based random access procedure specified by 3GPP TS 36.300 at section 10.1.5.2. In particular, during handover, the accused 4G LTE devices receive an information element (IE) message (RACH-ConfigDedicated) that explicitly signals the non-contention Random Access Preamble for use on the random access channel (*i.e.*, "an indication of a non-contention reserved access identifier") that uniquely identifies the mobile device, as well as System Information Blocks containing Random Access Channel related configuration information (*i.e.*, "information about a shared random access channel"). The accused 4G LTE devices then transmit the assigned non-contention Random Access preamble to the target base station. Next, the accused 4G LTE devices receive from the target base station a Random Access Response that conveys Timing Alignment information (*i.e.*, a feedback message comprising a timing adjustment"), including a timing advance command. Finally, the accused 4G LTE devices adjust uplink transmission timing (*i.e.*, "adjust uplink transmission timing").

88. Defendants have been and are now indirectly infringing at least one claim of the '320 Patent in accordance with 35 U.S.C. § 271(b) in this district and elsewhere in the United States. More specifically, Defendants have been and are now actively inducing direct infringement by other persons (*e.g.*, Defendants' customers who use, sell or offer for sale products that embody and/or otherwise practice one or more claims of the '320 Patent).

89. Prior to the filing of the original complaint, Defendants knew that they infringed the '320 Patent, or willfully blinded themselves to that infringement. On April 18, 2016, Wi-LAN invited Lenovo to license its patents covering "4G wireless technology." On May 11, 2016, Wi-LAN provided Lenovo with detailed infringement claim charts for the '924, '351, and '320 Patents, and identified representative infringing products as the "Moto X, Moto G, Moto E, DROID (Turbo 2, Maxx2, Turbo, Mini), Lenovo Phab, Lenovo A Series, Lenovo P Series, Lenovo Vibe Series, Lenovo K5Note, and Lenovo Tablets and Computers with Mobile Broadband." Wi-LAN then presented those claim charts and reiterated Lenovo's infringement during a May 25, 2016 meeting in Chicago with Kathryn Tsirigotis (Lenovo's Director of Licensing) and Gary Cunningham (Senior Counsel at Motorola). Despite Wi-LAN's repeated follow-up requests on June 2, June 23 and September 21, 2016, Lenovo never replied, thereby effectively refusing to take a license. Through these communications and the meeting, Defendants gained knowledge that they were infringing the '320 Patent.

90. Accordingly, by at least the filing of the original complaint, Defendants had knowledge of the '320 Patent, that their actions resulted in a direct infringement of the '320 Patent, that their customers' use of the 4G LTE handsets in the manner in which they were designed resulted in a direct infringement of the '320 Patent and knew or were willfully blind that their actions would induce direct infringement by others and intended that their actions would induce direct infringement by others.

91. Lenovo designs the 4G LTE devices to be used by its customers on 4G LTE networks.

92. Lenovo intends for its customers to use the 4G LTE devices on 4G LTE networks.

93. Defendants provide user manuals and other instruction material for their devices that instruct their customers to use Defendants' devices in their normal and customary way to communicate via 4G LTE.

94. For example, Lenovo specifically advertises the accused devices for the purpose of connecting via 4G LTE, touting the benefits of the 4G LTE technology made possible by the technology embodied in the patents-in-suit. *See, e.g.*, http://www3.lenovo.com/us/en/faqs/pc-life-faqs/what-is-lte-a/ ("To meet consumer needs and provide options that take advantage of current technologies, Lenovo's X Series and T Series laptops offer available 4G wireless connections. By leveraging a 4G network, these laptops provide for faster browsing speeds, greater multimedia usage, and enhanced usability, among other benefits… In comparing a 3G LTE network with a 4G LTE-Advanced network, you will find that there is no comparison. An LTE-A network offers much faster peak speeds, for both downloads and uploads, as well as greater reliability, more seamless handover between networks, and global roaming. If your laptop is not 4G compatible, its online capabilities are severely limited. In every objective metric, LTE-A is superior to 3G LTE. Subjectively, a 4G LTE-A network can be expected to provide a much more fulfilling and rewarding user experience.")

95. In its advertisements to consumers, Lenovo also correctly concludes that its customers use the 4G LTE devices as designed and intended by Lenovo – to connect to 4G LTE networks using the steps detailed herein, and benchmarks various specifications – battery life, for example – based on those usage patterns. *See, e.g.*, https://motorola-global-portal.custhelp.com/app/home/ ("All battery life claims are approximate and based on a standard mixed use profile. The mixed use profile is based on Motorola devices on major 4G LTE networks with excellent

coverage and includes both usage and standby time. Out-of-box settings are applied to the mixed use profile to project battery performance.").

96. Further, Lenovo's website documentation provides instructions to its customers for using the Lenovo devices on 4G LTE networks. *See, e.g.*, https://motorola-global-portal.custhelp.com/ci/fattach/get/2057848/1485874307/redirect/1/filename/68018224001B.pdf (teaching customers how to use the 4G LTE "Mobile network" and how to "process[] tons of information and apps at 4G LTE speed").

97. Lenovo's customers use the accused 4G LTE devices for the purpose for which Lenovo designs and advertises them, and in the manner instructed by Lenovo – to connect to and use 4G LTE networks.

98. In particular, during handover, the customers' 4G LTE devices receive an information element (IE) message (RACH-ConfigDedicated) that explicitly signals the non-contention Random Access Preamble for use on the random access channel (*i.e.*, "an indication of a non-contention reserved access identifier") that uniquely identifies the mobile device, as well as System Information Blocks containing Random Access Channel related configuration information (*i.e.*, "information about a shared random access channel"). The customers' 4G LTE devices then transmit the assigned non-contention Random Access preamble to the target base station. Next, the customers' 4G LTE devices receive from the target base station a Random Access Response that conveys Timing Alignment information (*i.e.*, a feedback message comprising a timing adjustment"), including a timing advance command. Finally, the customers' 4G LTE devices adjust uplink transmission timing (*i.e.*, "adjust uplink transmission timing").

99. In this way, Lenovo instructs and intends its customers to take steps that Lenovo knows constitute direct infringement of the '320 Patent, and its customers do indeed take those steps.

100. Accordingly, a reasonable inference is that Defendants specifically intend for others, such as their customers, to directly infringe one or more claims of the '320 Patent in the United States because Defendants had knowledge of the '320 Patent and actively induced others (*e.g.*, its customers) to directly infringe the '320 Patent by using, selling, or offering to sell Defendants' 4G LTE devices.

101. Defendants have been and are now indirectly infringing at least one claim of the '320 Patent in accordance with 35 U.S.C. § 271(c) in this district and elsewhere in the United States. More specifically, Defendants have been and are now providing non-staple articles of commerce to others for use in an infringing system or method with knowledge of the '320 Patent, and with knowledge that the use of their products resulted in a direct infringement of the '320 Patent by their customers, and with knowledge that these non-staple articles of commerce are used as a material part of the claimed invention of the '320 Patent.

102. Defendants' devices compliant with 4G LTE include components comprising an application processor and a baseband processor specifically designed to support communication and transmission of data over 4G LTE-compliant networks. These components are mounted to a circuit board in Defendants' accused devices and, absent these components, Defendants' devices compliant with 4G LTE would not function in an acceptable manner to send or receive data over 4G LTE networks. Further, the sole purpose of the 4G LTE components is to provide the infringing 4G LTE functionality, and do not serve any substantial use that does not infringe the '320 Patent. A reasonable inference to be drawn from the facts set forth is that these components in Defendants' devices

are especially made or especially adapted to operate in the accused devices to provide wireless communication, including the transmission of data in accordance with the 4G LTE standard. Further, a reasonable inference to be drawn from the facts is that these components comprising an application processor and a baseband processor are intended to support communication of data over a 4G LTE network and are not staple articles or commodities of commerce, and that the use of the components is required for operation of the devices to send or receive data over a 4G LTE-compliant network. Any other use would be unusual, far-fetched, illusory, occasional, aberrant, or experimental, given that they are made for the sole purpose of providing 4G LTE connectivity.

103. The components comprising an application processor and a baseband processor designed to support communication of data using 4G LTE in Defendants' devices are each a material part of the invention of the '320 Patent and are especially made for the infringing manufacture, sale, and use of Defendants' accused devices. Defendants' devices, including those components, are especially made or adapted to infringe the '320 Patent, and have no substantial non-infringing uses.

104. The '320 Patent is valid and enforceable.

105. Defendants' infringement of the '320 Patent is willful and has damaged Wi-LAN, and Defendants are liable to Wi-LAN in an amount to be determined at trial that compensates Wi-LAN for the infringement, which by law can be no less than a reasonable royalty.

106. As a result of Defendants' infringement of the '320 Patent, Wi-LAN has suffered irreparable harm and will continue to suffer loss and injury unless Defendants are enjoined by this Court.

INFRINGEMENT OF U.S. PATENT NO. 9,497,743

107. On November 15, 2016, United States Patent No. 9,497,743 ("the '743 Patent") was duly and legally issued for inventions entitled "Methods and Systems for Transmission of Multiple Modulated Signals Over Wireless Networks." Wi-LAN owns the '743 Patent and holds the right to sue and recover damages for infringement thereof.

108. On information and belief, Defendants have directly infringed and continue to directly infringe numerous claims of the '743 Patent, including at least claims 1 and 6, by manufacturing, using, selling, offering to sell, and/or importing their respective accused 4G LTE devices. Defendants are liable for infringement of the '743 Patent pursuant to 35 U.S.C. § 271(a).

109. For example, the Lenovo accused 4G LTE devices comply with the 4G LTE standards, including the UL-SCH data transfer procedure specified by 3GPP TS 36.321 at section 5.4. In particular, the accused 4G LTE devices first transmit a Scheduling Request (*i.e.*, "an explicit message to the base station informing the base station that the cellular telephone has data awaiting transmission to the base station over the UL connection between the cellular telephone and the base station") and then subsequently transmit a Buffer Status Report (*i.e.*, a "information indicative of an amount of data awaiting transmission to the base station over the UL connection between the cellular telephone and the base station").

110. Since at least the date of filing of the original complaint, Defendants have been and are now indirectly infringing at least one claim of the '743 Patent in accordance with 35 U.S.C. § 271(b) in this district and elsewhere in the United States. More specifically, Defendants have been and are now actively inducing direct infringement by other persons (*e.g.*, Defendants' customers who use, sell or

offer for sale products that embody and/or otherwise practice one or more claims of the '743 Patent).

111. Prior to the filing of the original complaint and on information and belief, Defendants knew that they infringed the '743 Patent, or willfully blinded themselves to that infringement. On April 18, 2016, Wi-LAN invited Lenovo to license its patents covering "4G wireless technology." On May 11, 2016, Wi-LAN provided Lenovo with detailed infringement claim charts for the '924, '351, and '320 Patents, and identified representative infringing products as the "Moto X, Moto G, Moto E, DROID (Turbo 2, Maxx2, Turbo, Mini), Lenovo Phab, Lenovo A Series, Lenovo P Series, Lenovo Vibe Series, Lenovo K5Note, and Lenovo Tablets and Computers with Mobile Broadband." Wi-LAN then presented those claim charts and reiterated Lenovo's infringement during a May 25, 2016 meeting in Chicago with Kathryn Tsirigotis (Lenovo's Director of Licensing) and Gary Cunningham (Senior Counsel at Motorola). Despite Wi-LAN's repeated follow-up requests on June 2, June 23 and September 21, 2016, Lenovo never replied, thereby effectively refusing to take a license. Through these communications and the meeting, Defendants gained knowledge that they were infringing at least the '925, '351, and '320 Patents, and on information and belief, knew other patents would issue. Although the '743 patent had not yet formally issued at that time, Lenovo either knew or should have known of the '743 patent at least as of its issue date, and no later than the filing of the original complaint.

112. Accordingly, by at least the filing of the original complaint, Defendants had knowledge of the '743 Patent, that their actions resulted in a direct infringement of the '743 Patent, that their customers' use of the 4G LTE handsets in the manner in which they were designed resulted in a direct infringement of the '743 Patent and knew or were willfully blind that their actions would induce direct

infringement by others and intended that their actions would induce direct infringement by others.

113. Lenovo designs the 4G LTE devices to be used by its customers on 4G LTE networks.

114. Lenovo intends for its customers to use the 4G LTE devices on 4G LTE networks.

115. Defendants provide user manuals and other instruction material for their devices that instruct their customers to use Defendants' devices in their normal and customary way to communicate via 4G LTE.

116. For example, Lenovo specifically advertises the accused devices for the purpose of connecting via 4G LTE, touting the benefits of the 4G LTE technology made possible by the technology embodied in the patents-in-suit. *See*, *e.g.*, http://www3.lenovo.com/us/en/faqs/pc-life-faqs/what-is-lte-a/ ("To meet consumer needs and provide options that take advantage of current technologies, Lenovo's X Series and T Series laptops offer available 4G wireless connections. By leveraging a 4G network, these laptops provide for faster browsing speeds, greater multimedia usage, and enhanced usability, among other benefits… In comparing a 3G LTE network with a 4G LTE-Advanced network, you will find that there is no comparison. An LTE-A network offers much faster peak speeds, for both downloads and uploads, as well as greater reliability, more seamless handover between networks, and global roaming. If your laptop is not 4G compatible, its online capabilities are severely limited. In every objective metric, LTE-A is superior to 3G LTE. Subjectively, a 4G LTE-A network can be expected to provide a much more fulfilling and rewarding user experience.")

117. In its advertisements to consumers, Lenovo also correctly concludes that its customers use the 4G LTE devices as designed and intended by Lenovo –

to connect to 4G LTE networks using the steps detailed herein, and benchmarks various specifications – battery life, for example – based on those usage patterns. *See, e.g.*, https://motorola-global-portal.custhelp.com/app/home/ ("All battery life claims are approximate and based on a standard mixed use profile. The mixed use profile is based on Motorola devices on major 4G LTE networks with excellent coverage and includes both usage and standby time. Out-of-box settings are applied to the mixed use profile to project battery performance.").

118. Further, Lenovo's website documentation provides instructions to its customers for using the Lenovo devices on 4G LTE networks. *See, e.g.*, https://motorola-global-portal.custhelp.com/ci/fattach/get/2057848/1485874307/redirect/1/filename/68018224001B.pdf (teaching customers how to use the 4G LTE "Mobile network" and how to "process[] tons of information and apps at 4G LTE speed").

119. Lenovo's customers use the accused 4G LTE devices for the purpose for which Lenovo designs and advertises them, and in the manner instructed by Lenovo – to connect to and use 4G LTE networks.

120. In using the devices on 4G LTE networks, the customers' device first transmits a Scheduling Request (*i.e.*, "a one bit message to the base station to request an allocation of UL bandwidth in which to transmit a bandwidth request") and then subsequently transmits a Buffer Status Report (*i.e.*, a "bandwidth request indicative of an amount of pending UL data"). Thereafter, the accused devices dynamically allocate the assigned UL bandwidth amongst their respective "UL services based on a QoS parameter of a respective service."

121. In this way, Lenovo instructs and intends its customers to take steps that Lenovo knows constitute direct infringement of the '743 Patent, and its customers do indeed take those steps.

122. Accordingly, a reasonable inference is that Defendants specifically intend for others, such as their customers, to directly infringe one or more claims of the '743 Patent in the United States because Defendants had knowledge of the '743 Patent and actively induced others (*e.g.*, its customers) to directly infringe the '743 Patent by using, selling, or offering to sell Defendants' 4G LTE devices.

123. Since at least the date of filing of the original complaint, Defendants have been and are now indirectly infringing at least one claim of the '743 Patent in accordance with 35 U.S.C. § 271(c) in this district and elsewhere in the United States. More specifically, Defendants have been and are now providing non-staple articles of commerce to others for use in an infringing system or method with knowledge of the '743 Patent, and with knowledge that the use of their products resulted in a direct infringement of the '743 Patent by their customers, and with knowledge that these non-staple articles of commerce are used as a material part of the claimed invention of the '743 Patent.

124. Defendants' devices compliant with 4G LTE include components comprising an application processor and a baseband processor specifically designed to support communication and transmission of data over 4G LTE-compliant networks. These components are mounted to a circuit board in Defendants' accused devices and, absent these components, Defendants' devices compliant with 4G LTE would not function in an acceptable manner to send or receive data over 4G LTE networks. Further, the sole purpose of the 4G LTE components is to provide the infringing 4G LTE functionality, and do not serve any substantial use that does not infringe the '743 Patent. A reasonable inference to be drawn from the facts set forth is that these components in Defendants' devices are especially made or especially adapted to operate in the accused devices to provide wireless communication, including the transmission of data in accordance

with the 4G LTE standard. Further, a reasonable inference to be drawn from the facts is that these components comprising an application processor and a baseband processor are intended to support communication of data over a 4G LTE network and are not staple articles or commodities of commerce, and that the use of the components is required for operation of the devices to send or receive data over a 4G LTE-compliant network. Any other use would be unusual, far-fetched, illusory, occasional, aberrant, or experimental, given that they are made for the sole purpose of providing 4G LTE connectivity.

125. The components comprising an application processor and a baseband processor designed to support communication of data using 4G LTE in Defendants' devices are each a material part of the invention of the '743 Patent and are especially made for the infringing manufacture, sale, and use of Defendants' accused devices. Defendants' devices, including those components, are especially made or adapted to infringe the '743 Patent, and have no substantial non-infringing uses.

126. The '743 Patent is valid and enforceable.

127. Defendants' infringement of the '743 Patent has damaged Wi-LAN, and Defendants are liable to Wi-LAN in an amount to be determined at trial that compensates Wi-LAN for the infringement, which by law can be no less than a reasonable royalty.

128. As a result of Defendants' infringement of the '743 Patent, Wi-LAN has suffered irreparable harm and will continue to suffer loss and injury unless Defendants are enjoined by this Court.

WILLFUL INFRINGEMENT

129. Prior to the filing of the original complaint, Defendants knew that they infringed the '924, '351, and '320 Patents, or willfully blinded themselves to that

infringement. On April 18, 2016, Wi-LAN invited Lenovo to license its patents covering "4G wireless technology." On May 11, 2016, Wi-LAN provided Lenovo with detailed infringement claim charts for the '924, '351, and '320 Patents, and identified representative infringing products as the "Moto X, Moto G, Moto E, DROID (Turbo 2, Maxx2, Turbo, Mini), Lenovo Phab, Lenovo A Series, Lenovo P Series, Lenovo Vibe Series, Lenovo K5Note, and Lenovo Tablets and Computers with Mobile Broadband." Wi-LAN then presented those claim charts and reiterated Lenovo's infringement during a May 25, 2016 meeting in Chicago with Kathryn Tsirigotis (Lenovo's Director of Licensing) and Gary Cunningham (Senior Counsel at Motorola). Despite Wi-LAN's repeated follow-up requests on June 2, June 23 and September 21, 2016, Lenovo never replied, thereby effectively refusing to take a license. Through these communications and the meeting, Defendants gained knowledge that they were infringing the '924, '351, and '320 Patents.

130. Accordingly, Lenovo has had knowledge of its infringement of the '924, '351, and '320 Patents since at least May 11, 2016. Despite such knowledge, Defendants have proceeded to infringe the '924, '351, and '320 Patents, and instruct their customers to do the same, with full and complete knowledge of their applicability to their respective 4G LTE products without taking a license and without a good faith belief that the '924, '351, and '320 Patents are invalid and not infringed. Defendants' infringement of the '924, '351, and '320 Patents thus occurs with knowledge of infringement and/or objective recklessness and has been and continues to be willful, egregious, and deliberate. Thus, Defendants' infringement of the '924, '351, and '320 Patents is willful, egregious, and deliberate, entitling Wi-LAN to increased damages under 35 U.S.C. § 284 and to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

PRAYER FOR RELIEF

WHEREFORE, Wi-LAN prays for the following relief:

131. A judgment in favor of Wi-LAN that Defendants have infringed and are infringing U.S. Patent Nos. 8,787,924; 8,867,351; 9,226,320; and 9,497,743.

132. An order permanently enjoining Defendants, their respective officers, agents, employees, and those activing in privity with it, from further direct and/or indirect infringement of U.S. Patent Nos. 8,787,924; 8,867,351; 9,226,320; and 9,497,743.

133. An award of damages to Wi-LAN arising out of Defendants' infringement of U.S. Patent Nos. 8,787,924; 8,867,351; 9,226,320; and 9,497,743, including enhanced damages pursuant to 35 U.S.C. § 284, together with prejudgment and post-judgment interest, in an amount according to proof;

134. An award of an ongoing royalty for Defendants' post-judgment infringement in an amount according to proof;

135. Declaring that Defendants' infringement of the '924, '351, and '320 Patents is willful and that this is an exceptional case under 35 U.S.C. § 285 and awarding attorneys' fees and costs in this action.

136. Granting Wi-LAN its costs and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

137. Wi-LAN demands a trial by jury of any and all issues triable of right before a jury.

Dated: May 26, 2017

By: */s/ Victor M. Felix*

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CERTIFICATE OF SERVICE

I am a resident of the State of California, over the age of eighteen years, and not a party to the within action. My business address is PROCOPIO, CORY, HARGREAVES & SAVITCH LLP, 525 "B" Street, Suite 2200, San Diego, California 92101. On **May 26, 2017**, I served the foregoing document.

☑ *(Federal)* **BY CM/ECF NOTICE OF ELECTRONIC FILING** by causing such document(s) listed above to be served through this Court's electronic transmission facilities via the Notice of Electronic Filing (NEF) and hyperlink, to the parties and/or counsel who are determined this date to be registered CM/ECF Users set forth in the service list obtained from this Court on the Electronic Mail Notice List.

☑ *(Federal)* I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on May 26, 2017, at **San Diego**, California.

/s/Victor M. Felix
Victor M. Felix