IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS

PANTECH CORPORATION and PANTECH WIRELESS, LLC Plaintiffs, v. ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD., Defendant.	Case No. **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Pantech Corporation ("Pantech Corp.") and Pantech Wireless, LLC ("Pantech Wireless") (collectively, "Pantech" or "Plaintiffs"), for their Complaint against Defendant OnePlus Technology (Shenzhen) Co., Ltd., ("OnePlus" or "Defendant"), allege the following:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*

THE PARTIES

2. Pantech Corp. is an entity organized under the laws of South Korea, with a place of business at 10F, 251, Gangnam-daero, Seocho-gu, Seoul 06735, Republic of Korea.

3. Pantech Wireless is the wholly owned subsidiary of Pantech Corp. Pantech Wireless is an entity organized under the laws of Texas, with a place of business at 7600 Chevy Chase Drive, Suite 300, Austin, TX 78752.

4. Defendant OnePlus Technology (Shenzhen) Co., Ltd. is a corporation duly organized and existing under the laws of China, with its principal place of business at 18F, Tairan

Building, Block C, Tairan 8th Road, Chegongmiao, Futian District, Shenzhen, Guangdong, 518040, China.

5. Defendant is in the business of providing information and communication technology solutions. Specifically, Defendant provides and makes available for sale wireless telecommunications equipment, including smartphones and mobile devices.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States, 35 U.S.C. § 271, *et seq*., and/or pursuant to 28 U.S.C. § 1367(a) as to Plaintiffs' claims for breach of FRAND obligations and unjust enrichment (Counts IX and X) because these claims are inextricably related to Plaintiffs' claims for patent infringement (Counts I-VIII).

7. This Court has personal jurisdiction over Defendant. Defendant has continuous and systematic business contacts with the State of Texas and has committed and continues to commit acts of patent infringement in the United States, including in the State of Texas, by making, using, offering to sell, and/or selling accused products in the United States and Texas, and/or importing accused products into the United States and Texas. In addition, Defendant conducts its business extensively throughout Texas and derives substantial revenue in Texas, by shipping, distributing, offering for sale, selling, and advertising (including through an interactive web page) its products and/or services in the State of Texas and the Eastern District of Texas. Defendant has purposefully and voluntarily placed in the stream of commerce one or more products and/or services that practice the Asserted Patents (as set forth below) with the intention and expectation that they will be purchased and used by consumers in the Eastern District of Texas. For example, OnePlus advertises its products (including those accused in this Complaint) for purchase on its webpage, accessible from the United States, including Texas, such as at

https://www.oneplus.com/store/phone. Further, https://www.oneplus.com includes a user agreement (https://www.oneplus.com/legal/use-of-cookies) that imposes terms between users and "OnePlus Technology (Shenzhen) Co., Ltd (referred to as we, us or OnePlus)." OnePlus also advertises on its website (for example at https://www.oneplus.com/oneplus-n200-5g) that certain of its products are available for purchase from T-Mobile (https://www.t-mobile.com/cell-phone/oneplus-nord-n200-5g), Amazon (https://www.amazon.com/OnePlus-Unlocked-Android-Smartphone-Charging/dp/B07XWGWPH5), and Best Buy (https://www.bestbuy.com/site/oneplus-nord-n200-5g-64gb-unlocked-blue-quantum/6468089.p).

8. On information and belief, OnePlus products accused in this Complaint are and have been sold in physical T-Mobile retail stores located within the State of Texas and the Eastern District of Texas, for example at 5627 S Broadway Ave, Tyler, TX 75703; 900 E End Blvd N #100b, Marshall, TX 75670; and 3741 Mall Dr., Texarkana, TX 75501.

9. OnePlus has previously admitted transacting business in this District and consented to jurisdiction in this District, for example in *Altpass LLC v. OnePlus Technology (Shenzhen) Co., Ltd.*, No. 2-20-cv-00105, Dkt. 21 at 1 (E.D. Tex. Oct. 21, 2020) ("OnePlus admits it transacts business within the State of Texas…").

10. In addition, or in the alternative, this Court has personal jurisdiction over Defendant pursuant to Fed. R. Civ. P. 4(k)(2).

11. Venue is proper in this district as to Defendant, which is organized under the laws of China. 28 U.S.C. § 1391(c)(3) provides that "a defendant not resident in the United States may be sued in any judicial district, and the joinder of such a defendant shall be disregarded in determining where the action may be brought with respect to other defendants."

ACCUSED INSTRUMENTALITIES

12. Defendant makes, uses, sells and offers for sale, provides, and causes to be used, now and within the past six years, mobile phones (e.g., OnePlus series, Nord series) and certain other LTE- and 5G-capable devices (the "Accused Instrumentalities").

13. For example, Defendant advertises that the OnePlus X, OnePlus 3T, OnePlus 3, OnePlus 5T, OnePlus 5, OnePlus 6, OnePlus 6T, OnePlus 7 Pro, OnePlus 7T, OnePlus 7T Pro, OnePlus 8, OnePlus 8T, OnePlus 8 Pro, OnePlus 9 5G, OnePlus 9 Pro 5G, OnePlus Nord N10 5G, OnePlus Nord N100, OnePlus Nord N200 5G, OnePlus Nord N20 5G, OnePlus 10 Pro 5G, OnePlus 11 5G, OnePlus Nord N30 5G, OnePlus Open, OnePlus 12, OnePlus 12R, OnePlus 12R Genshin Impact Edition devices are compliant with LTE and/or 5G cellular network standards.

PATENTS-IN-SUIT

14. The Asserted Patents are U.S. Patent Nos. 9,288,824; 11,212,838; 9,763,283; 10,863,573; 9,369,251; 9,769,776; 8,995,372; and 10,764,803.

15. U.S. Patent No. 9,288,824 (the "'824 Patent") is entitled "Method for transmitting and receiving random access request and transmitting and receiving random access response." On May 7, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the '824 Patent.[1]

[1] The named inventors of the '824 Patent are Min Seok Noh, Yeong Hyeon Kwon, Jin Sam Kwak, Dong Cheol Kim, Sung Ho Moon, Seung Hee Han, Hyun Woo Lee, and Dragan Vujcic. The U.S. patent application was filed on Aug. 6, 2013, published on Dec. 5, 2013, and the '854 Patent issued on Mar. 15, 2016. The inventor assigned a parent application, U.S. Patent App. No. 12/347,352 and any continuations thereto, including the application underlying the '824 Patent, to LG Electronics Inc. on March 6, 2009. On February 15, 2012, LG Electronics Inc. assigned the interest to Pantech Co., Ltd. On July 6, 2016, Pantech Co., Ltd. transferred the interest to Pantech Inc. On October 31, 2016, Pantech Inc. transferred the interest to Goldpeak, and on May 7, 2020, Goldpeak transferred the interest to Pantech Corp.

16. U.S. Patent No. 11,212,838 (the "'838 Patent") is entitled "Method and apparatus for transmitting uplink data on uplink resources." On April 27, 2021, Pantech Wireless, LLC obtained full and complete ownership, title and interest in the '838 Patent.[2]

17. U.S. Patent No. 9,763,283 (the "'283 Patent") is entitled "Method and apparatus for wireless link control in wireless communications system supporting dual connectivity." On May 6, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the '283 Patent.[3]

18. U.S. Patent No. 10,863,573 (the "'573 Patent") is entitled "Method and apparatus for sequential forwarding considering multi-flow in dual connectivity system." On May 6, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the '573 Patent.[4]

19. U.S. Patent No. 9,369,251 (the "'251 Patent") is entitled "Apparatus and method for transmitting muting information, and apparatus and method for acquiring channel state using

[2] The named inventors of the '838 Patent are Benoit Pelletier, Diana Pani, Rocco DiGirolamo, Christopher R. Cave, Vincent Roy, Paul Marinier, and Eldad M. Zeira. The U.S. patent application was filed on May 23, 2019, published on Sep. 12, 2019, and the '838 Patent issued on Dec. 28, 2021. On December 5, 2008, the inventors assigned the parent application, U.S. Patent App. No. 12/238,910 and any continuations thereto, including the application underlying the '838 Patent, to InterDigital Patent Holdings, Inc. On October 11, 2013, InterDigital Technology Corporation transferred the interest to InterDigital Holdings, Inc., who transferred the interest to InterDigital, Inc., who transferred the interest to DST Holdings. Inc. On October 15, 2013, DST Holdings, Inc. transferred the interest to Signal Trust. On December 30, 2020, Signal Trust transferred the interest to RnB Wireless. On April 27, 2021, RnB Wireless transferred the interest to Pantech Wireless.

[3] The named inventors of the '283 Patent are Myung Cheul Jung, Ki Bum Kwon, Jae Hyun Ahn, and Kang Suk Huh. The U.S. patent application was filed on April 4, 2014, published on Feb. 4, 2016, and the '283 Patent issued on Sept. 12, 2017. On October 2, 2015, the inventors assigned the application underlying the '283 Patent, to Pantech Co. Ltd. On October 22, 2015, Pantech Co., Ltd. transferred the interest to Pantech Inc. On May 6, 2020, Pantech Inc. transferred the interest to Pantech Corp.

[4] The named inventors of the '573 Patent are Myung Cheul Jung, Kang Suk Huh, Jae Hyun Ahn, and Ki Bum Kwon. The U.S. patent application was filed on Mar. 26, 2018, published on July 26, 2018, and the '573 Patent issued on Dec. 8, 2020. On Nov. 10, 2015, the inventors assigned the national stage parent application, 14/890,407 and any continuations thereto, including the application underlying the '573 Patent, to Pantech Inc. On May 6, 2020, Pantech Inc. transferred the interest to Pantech Corp.

same." On May 7, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the '251 Patent.[5]

20. U.S. Patent No. 9,769,776 (the "'776 Patent") is entitled "Apparatus and method for uplink synchronizing in multiple component carrier system." On May 7, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the '776 Patent.[6]

21. U.S. Patent No. 8,995,372 (the "'372 Patent") is entitled "Apparatus and method for performing random access in a wireless communication system." On May 6, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the '372 Patent.[7]

22. U.S. Patent No. 10,764,803 (the "'803 Patent") is entitled "Enhanced uplink operation in soft handover." On April 27, 2021, Pantech Wireless obtained full and complete ownership, title and interest in the '803 Patent.[8]

[5] The named inventors of the '251 Patent are Sungjun Yoon, Kyongmin Park, and Sungjin Suh. The U.S. patent application was filed on Jul. 16, 2015, published on Nov. 12, 2015, and the '251 Patent issued on Jun. 14, 2016. The inventor assigned a parent application, U.S. Patent App. No. 13/816,182 and any continuations thereto, including the application underlying the '251 Patent, to Pantech Co., Ltd. on February 6, 2013. On July 6, 2016, Pantech Co., Ltd. transferred the interest to Pantech Inc. On October 31, 2016, Pantech Inc. transferred the interest to Goldpeak, and on May 7, 2020, Goldpeak transferred the interest to Pantech Corp.

[6] The named inventors of the '776 Patent are Ki Bum Kwon, Jae Hyun Ahn, and Kang Suk Huh. The U.S. patent application was filed on October 31, 2016, published on February 16, 2017, and the '776 Patent issued on September 19, 2017. On March 20, 2013, the inventors assigned the parent application, U.S. Patent App. No. 13/849,296 and any continuations thereto, including the application underlying the '776 Patent, to Pantech Co., Ltd. On October 22, 2015, Pantech Co. Ltd. transferred the interest to Pantech Inc. On October 31, 2016, Pantech Inc. transferred the interest to Goldpeak. On May 7, 2020, Goldpeak transferred the interest to Pantech Corp.

[7] The named inventors of the '372 Patent are Kibum Kwon and Myungcheul Jung. The U.S. patent application was filed on September 28, 2012, published on January 24, 2013, and the '372 Patent issued on March 31, 2015. On Sept. 28, 2012, the inventors assigned the application underlying the '372 Patent, to Pantech Co., Ltd. On October 22, 2015, Pantech Co. Ltd. transferred the interest to Pantech Inc., which transferred the interest to Pantech Inc. On May 6, 2020, , Pantech Inc. transferred the interest to Pantech Corp.

[8] The named inventors of the '803 Patent are Stephen G. Dick, Stephen E. Terry, Guodong Zhang, James M. Miller, and Sung-Hyuk Shin. The U.S. patent application was filed on Aug. 6, 2019, published on Nov. 28, 2019, and the '803 Patent issued on Sept. 1, 2020. On Nov. 18, 2004, the inventors assigned the parent application, U.S. Patent App. No. 10/925,426 and any continuations thereto, including the application underlying the '803 Patent, to InterDigital Technology Corp. On October 11, 2013, InterDigital Technology Corporation transferred the interest to InterDigital Holdings, Inc., who transferred the interest to InterDigital, Inc., who transferred the interest to DST Holdings. Inc. On October 15, 2013, DST Holdings, Inc. transferred the interest to Signal Trust for Wireless Innovation. On December

23. Pantech Corp. is the rightful owner of the ’824, ’283, ’573, ’251, ’776, and ’372 Patents and holds the entire right, title and interest in the ’824, ’283, ’573, ’251, ’776, and ’372 Patents, including the right to collect for past damages.

24. Pantech Wireless is the rightful owner of the ’838 and ’803 Patents and holds the entire right, title and interest in the ’838 and ’803 Patents, including the right to collect for past damages.

BACKGROUND

Pantech Corp.

25. Pantech Co., Ltd., the predecessor to what is now Pantech Corp.,[9] was originally founded in 1991 in Seoul, South Korea as a competitor in the wireless phone marketplace.

26. Throughout the 1990s and 2000s, Pantech rose to become a leading manufacturer of mobile phones. By 2012, Pantech had become the second best-selling Korean handset maker.

27. Pantech’s products were sold in South Korea, the United States, Japan, China, Europe, Vietnam, and other countries around the world. Pantech launched operations in the United States in 2003.

28. Pantech’s portfolio of intellectual property is broad and extensive, comprising thousands of worldwide patents and patent applications in the areas of telecommunications, “smart” devices, and Internet of Things products. Pantech’s portfolio, in one aspect, covers wireless communication systems and devices and methods for using those communication systems. In the

30, 2020, Signal Trust for Wireless Innovation transferred the interest to RnB Wireless. On April 27, 2021, RnB Wireless transferred the interest to Pantech Wireless.

[9] Pantech Co., Ltd. was formed in 1991, and as the result of a restructuring and acquisition in 2015 became Pantech, Inc. Thereafter, Pantech Corporation was formed. Pantech, Inc. transferred its assets to Pantech Corp. as part of an asset sale in 2020 (in this section, these three entities are hereinafter referred to collectively as “Pantech” unless otherwise identified).

wireless technology space alone, Pantech holds more than 200 U.S. patents and applications, many of which have been declared standard essential patents.

29. Pantech has invested heavily in research and development, investing, on average, over 10% of its annual revenue in research and development. Pantech's research and development efforts in network technology include, but are not limited to, technologies focused on LTE & 5G networks, WCDMA/CDMA, WiMAX, WiFi, Near Field Communication (NFC), Visible Light Communication, Human Body Communication, Ultra-Wideband Communication and IP Mesh Network.

30. Over the last decade, Pantech has enthusiastically contributed to the 3rd Generation Partnership Project (3GPP) LTE/LTE-A standardization by submitting proposals to TSG RAN, RAN1, and RAN2. Indeed, Pantech secured numerous LTE Standard Essential Patents and patent applications (SEPs) in connection with its contributions. In 2014, National Applied Research Labs in Taiwan reported that Pantech held 1% of LTE-related SEPs, and that number has only increased since 2014.

31. Recognizing the value of its own portfolio and its potential role in the Fourth Industrial Revolution, Pantech has committed to making its intellectual property available in the marketplace, including to competitors. On its website, under the heading "IP Umbrella Services," Pantech offers to exchange intellectual property and technology, and collaborate with competitors and patent holders, through licenses, to enable the market to identify new technological ventures.

32. Pantech Corp. is the owner by assignment of a portfolio of patents, including the Asserted Patents described in paragraphs 15 and 17-21 and in detail in the counts below, that relate to mobile device user interface features and technology for cellular communications networks,

including variations or generations of cellular communication network technology such as, but not limited to LTE and 5G, as discussed herein.

Pantech Wireless

33. InterDigital, Inc. ("InterDigital") is a wireless research and development company that has, for decades, been a pioneer in the development of fundamental wireless technologies that are at the core of mobile devices, networks, and services worldwide. InterDigital has been one of the major contributors to worldwide mobile standards over the past 20 years.

34. In 2013, InterDigital established Signal Trust for Wireless Innovation ("Signal Trust"). The patents and patent applications that comprise Signal Trust were developed by InterDigital, and distributions from Signal Trust were earmarked to support continued research related to cellular wireless technologies, as well as scholarly analysis of intellectual property rights and the technological, commercial, and creative innovations they facilitate.

35. A portion of the patent portfolio created by InterDigital and transferred to Signal Trust was thereafter transferred to RnB Wireless LLC and then to Pantech Wireless.

36. Pantech Wireless is the owner by assignment of a portfolio of patents, including the Asserted Patents described in paragraphs 16 and 22 and in detail in the counts below, that relate to technology for cellular communications networks, including variations or generations of cellular communication network technology such as, but not limited to, LTE, as discussed herein.

Negotiations Between the Parties

37. Cellular communication network technology is used to provide data transmission across mobile cellular networks.

38. It is critical for cellular communication network technology to be standardized around the globe. Independent standard-setting organizations, like the European

Telecommunications Standards Institute (ETSI), establish global standards for the telecommunication industries. ETSI, along with other standard-setting organizations, have made it possible to have global interoperability between networks, devices and network operators.

39. ETSI sets forth a policy in order to balance intellectual property protections against the need for an open standard by designating certain intellectual property rights (IPR) as "essential." ETSI sets forth the following definition of "essential":

> "ESSENTIAL" as applied to IPR means that it is not possible on technical (but not commercial) grounds, taking into account normal technical practice and the state of the art generally available at the time of standardization, to make, sell, lease, otherwise dispose of, repair, use or operate EQUIPMENT or METHODS which comply with a STANDARD without infringing that IPR. For the avoidance of doubt in exceptional cases where a STANDARD can only be implemented by technical solutions, all of which are infringements of IPRs, all such IPRs shall be considered ESSENTIAL.

Clause 15.6 of the ETSI IPR Policy, https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf.

40. OnePlus is required to have a license to one or more essential patents owned by Pantech Corp. and Pantech Wireless including the Asserted Patents that are identified as essential.

41. Pantech Corp. first sent a letter to Mr. Zuohu Liu, CEO of Defendant, on June 12, 2020 offering to license patents currently owned and/or managed by Pantech Corp., including those that are essential to cellular standards including LTE and LTE-Advanced. The correspondence identified OnePlus products, such as OnePlus 6T, OnePlus 7, OnePlus 7 Pro, OnePlus 7T, OnePlus 7T Pro, OnePlus 8 and OnePlus 8 Pro, that were covered by claims of the offered patents and attached a list of Pantech's patents, including those covering OnePlus's products.

42. Since then, Pantech Corp. engaged in additional communication with OnePlus through emails, letters, and meetings regarding licensing patents owned by Pantech Corp., including those that are essential to cellular standards including LTE and 5G. For example, Pantech

Corp. provided additional details regarding its portfolio and/or licensing proposal to OnePlus on at least September 24, 2020, January 21, 2021, March 25, 2021, April 16, 2021, May 4, 2021, June 1, 2021, and July 9, 2021. Pantech Corp. has continuously attempted to license its patents for more than a year—including the patents asserted herein—on fair and reasonable terms, yet OnePlus has still elected not to license Pantech's patents. Indeed, despite the amount of time that passed during these negotiations, OnePlus never provided a counter offer.

43. During negotiations between the parties, on May 14, 2021, Pantech Corp. and Pantech Wireless also provided OnePlus notice that Pantech Wireless had acquired the Signal Trust portfolio of patents, which included additional standard essential patents, and provided a list of the acquired patents. On July 9, 2021, Pantech Corp. and Pantech Wireless provided OnePlus with additional information regarding OnePlus's practice of such patents, and made a licensing offer that included the Pantech Wireless patents. This letter also identified the Asserted Patents, for example calling attention to the '283 and '573 patents. This offer included both the Pantech Corp. and Pantech Wireless patents, but was at the same rate as previously offered to OnePlus, reflecting a substantial discount, taking into account validity, non-infringement, and expiring patents. Again, however, OnePlus never substantively responded to such communications and offer. OnePlus has still elected not to license Pantech's patents on fair and reasonable terms. At all times, Pantech offered a license rate for the standard essential patents independent from its non-standard essential patents.

44. In accordance with ETSI's policy, Pantech Corp. and Pantech Wireless (through Pantech Corp.) provided OnePlus with multiple license offers on terms that are fair, reasonable and non-discriminatory ("FRAND") for both the Pantech Corp. and Pantech Wireless patents. The United States Department of Justice, with the United States Patent and Trademark Office (USPTO)

and the National Institute of Standards and Technology (NIST), have made clear that patent owners and potential licensees of essential patents should "engage in good-faith negotiations to reach F/RAND license terms" to "help reduce the costs and other burdens associated with litigation." 2019 Policy Statement on Remedies for SEPs Subject to Voluntary F/RAND Commitments, https://www.justice.gov/atr/page/file/1228016/download (December 19, 2019).

45. Pantech Corp. and Pantech Wireless made continuous and good faith efforts to negotiate, including but not limited to providing technical details regarding the Asserted Patents and their "standards essential" nature and offering to license the Asserted Patents and other offered patents on FRAND terms. However, Defendant has not engaged in good faith discussions or negotiations with Pantech Corp. or Pantech Wireless, but has instead engaged in holdout behavior.

46. On June 3, 2022, Pantech Corp. and Pantech Wireless sued OnePlus for patent infringement of multiple patents in this District. *See* Case No. 5:22-cv-00069-RWS. Despite the allegations raised in that lawsuit and the contentions made therein, including by expert witnesses testifying to infringement and damages, OnePlus has refused to accept a license on FRAND terms or even offer a reasonable counteroffer.

47. Defendant has been operating and continues to operate without a license to Plaintiffs' standards-essential and other patents.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 9,288,824

48. The allegations set forth in the foregoing paragraphs 1 through 47 are incorporated into this claim for relief.

49. On March 15, 2016, the '824 Patent, entitled "Method for transmitting and receiving random access request and transmitting and receiving random access response," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 13/960,448, filed on Aug. 6, 2013. The '824 Patent claims foreign priority to KR

10-2008-0047656, filed on May 22, 2008. A true and correct copy of the '824 Patent is attached as Exhibit 1.

50. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '824 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for its infringement.

51. The '824 Patent discloses apparatuses and methods for a contention based random access procedure that includes a random access preamble and random access response. The '824 Patent specifies, *inter alia*, that the UE will transmit a random access preamble to a base station and determine a time period for receiving a random access response, wherein the time period starts at a time point after an end time of transmitting the random access preamble and a subframe number obtained by adding an offset of three to a subframe number corresponding to the end time of transmitting the random access preamble. For example, claims 1 and 7 of the '824 Patent recite elements of a random access procedure mandated by the LTE standard, including at least 3GPP TS 36.321, TS 36.300, and TS 36.331.

52. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claims 1 and 7 of the '824 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claims 1 and 7 of the '824 Patent (the "OnePlus Accused '824 Instrumentalities"). Defendant also has and continues to directly infringe at least claims 1 and 7 by practicing claims 1 and 7 through the OnePlus Accused '824 Instrumentalities, and by causing the OnePlus Accused '824 Instrumentalities to practice the patented inventions.

53. OnePlus Accused ’824 Instrumentalities include, for example, the OnePlus Open and other LTE-compatible devices that support the LTE contention based random access procedure. On information and belief, each of the OnePlus Accused ’824 Instrumentalities incorporates at least one processor configured to comply with LTE and to support the LTE contention based random access procedure.

54. Defendant was made aware of the ’824 Patent and its infringement thereof at least as early as June 12, 2020, when the ’824 Patent was identified in correspondence sent to OnePlus by Pantech Corp.

55. Since at least June 12, 2020, when it was made aware of the ’824 Patent by Pantech Corp., Defendant’s infringement has been, and continues to be, willful.

56. Upon information and belief, the OnePlus Accused ’824 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant’s partners, clients, customers/subscribers and end users across the country and in this district.

57. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claims 1 and 7 of the ’824 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant’s partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused ’824 Instrumentalities constitute direct infringement of at least one claim of the ’824 Patent. For example, OnePlus advertises and has advertised the use of its devices for LTE communications. *See* https://www.oneplus.com/us/open/specs.

58. In particular, Defendant’s actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the

OnePlus Accused ’824 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused ’824 Instrumentalities.

59. Any party, including Defendant’s partners, clients, customers/subscribers, and end users, using the OnePlus Accused ’824 Instrumentalities necessarily infringes the ’824 Patent because the inventions of the ’824 Patent are required to comply with the relevant cellular standards. Defendant advertises its OnePlus Accused ’824 Instrumentalities as compliant with LTE, which induces others to infringe the ’824 Patent. Defendant has knowingly induced infringement since at least as early as June 12, 2020, when Defendant was made aware of the ’824 Patent.

60. Upon information and belief, Defendant is liable as a contributory infringer of the ’824 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused ’824 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the ’824 Patent. Each of the OnePlus Accused ’824 Instrumentalities is a material component for use in practicing the ’824 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused ’824 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

61. Pantech Corp. has been harmed by Defendant’s infringing activities.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 11,212,838

62. The allegations set forth in the foregoing paragraphs 1 through 61 are incorporated into this claim for relief.

63. On December 28, 2021, the ’838 Patent, entitled “Method and apparatus for transmitting uplink data on uplink resources” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 16/421,019, filed on May 23, 2019.

The ’838 Patent claims priority to U.S. Patent No. 10,306,677, filed on Oct. 6, 2015; U.S. Patent No. 9,313,809, filed on Jun. 30, 2014; U.S. Patent No. 8,774,104, filed on Sept. 26, 2008; U.S. Provisional Patent Application No. 60/975,985, filed on Sept. 28, 2007; U.S. Provisional Patent Application No. 60/982,528, filed on Oct. 25, 2007; U.S. Provisional Patent Application No. 61/018,999, filed on Jan. 4, 2008; U.S. Provisional Patent Application No. 61/025,441, filed on Feb. 1, 2008; U.S. Provisional Patent Application No. 61,038,576, filed on Mar. 21, 2008; U.S. Provisional Patent Application No. 61/074,288, filed on Jun. 20, 2008; and U.S. Provisional Patent Application No. 61/083,409, filed on Jul. 24, 2008. A true and correct copy of the ’838 Patent is attached as Exhibit 2.

64. Pantech Wireless is the assignee and owner of all right, title and interest in and to the ’838 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

65. The ’838 Patent discloses methods and apparatuses for uplink resource control in a wireless communication system supporting medium access control (MAC) timer information. For instance, a user equipment receives at least one radio resource control (RRC) message indicating uplink resources for WTRU and MAC timer information, transmits uplink data based on the indicated uplink resources, and deactivates the indicated uplink resources in response to a MAC timer expiring. For example, claims 1-10 of the ’838 Patent recite elements of uplink resource control mandated by at least the LTE standard, including at least the following 3GPP technical specifications: TS 36.321, and 36.331. Compliance with these technical specifications, and thus with at least the LTE standard, requires the use of the invention recited in at least claims 1-10 of the ’838 Patent, including the functionality described in this paragraph.

66. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claims 1-10 of the ’838 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claims 1-10 of the ’838 Patent (the “OnePlus Accused ’838 Instrumentalities”). Defendant also has and continues to directly infringe at least claims 1-10 by practicing claims 1-10 through the OnePlus Accused ’838 Instrumentalities, and by causing the OnePlus Accused ’838 Instrumentalities to practice the patented inventions.

67. OnePlus Accused ’838 Instrumentalities include, for example, the OnePlus Open and other LTE compatible products that support uplink resource control. On information and belief, each of the OnePlus Accused ’838 Instrumentalities incorporate at least one processor and/or modem configured to comply with LTE and support uplink resource control using medium access control (MAC) timer information.

68. Defendant was made aware of the ’838 Patent family and its infringement thereof at least as early as July 9, 2021, when family members were identified in correspondence sent to OnePlus by Pantech Corp.

69. Since at least the date of filing of this Complaint, when it was made aware of the ’838 Patent by Pantech Wireless, Defendant’s infringement has been, and continues to be, willful.

70. Upon information and belief, the OnePlus Accused ’838 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant’s partners, clients, customers/subscribers and end users across the country and in this district.

71. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claims 1-10 of the ’838 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant’s partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused ’838 Instrumentalities constitute direct infringement of at least one claim of the ’838 Patent. For example, OnePlus advertises and has advertised the use of its devices for LTE communications. *See* https://www.oneplus.com/us/open/specs.

72. In particular, Defendant’s actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused ’838 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused ’838 Instrumentalities.

73. Any party, including Defendant’s partners, clients, customers/subscribers, and end users, using the OnePlus Accused ’838 Instrumentalities necessarily infringes the ’838 Patent because the inventions of the ’838 Patent are required to comply with the relevant cellular standards. Defendant advertises its OnePlus Accused ’838 Instrumentalities as compliant with LTE, which induces others to infringe the ’838 Patent. Defendant has knowingly induced infringement since at least as early as the filing date of this Complaint, when Defendant was made aware of the ’838 Patent.

74. Upon information and belief, Defendant is liable as a contributory infringer of the ’838 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused ’838 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the ’838 Patent. Each of the OnePlus Accused ’838 Instrumentalities is a material component for use in practicing the ’838 Patent and

is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused '838 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

75. Pantech Wireless has been harmed by Defendant's infringing activities.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 9,763,283

76. The allegations set forth in the foregoing paragraphs 1 through 75 are incorporated into this claim for relief.

77. On September 12, 2017, U.S. Patent No. 9,763,283, entitled "Method and apparatus for wireless link control in wireless communication system supporting dual connectivity" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 14/782,534, which has a § 371(c) date of October 5, 2015. The '283 Patent claims foreign priority to KR 10-2013-0037776, filed on April 5, 2013. A true and correct copy of the '283 Patent is attached as Exhibit 3.

78. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '283 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

79. The '283 Patent discloses at least an apparatus and method for radio link control by a user equipment which is dually connected to a master base station and a secondary base station. The '283 Patent is directed to a user equipment that detects a radio link failure (RLF) for a secondary serving cell provided by a secondary base station, generates an RLF indicator indicating occurrence of the RLF for the secondary serving cell when the RLF for the secondary serving cell is detected, and transmits the RLF indicator to the master base station connected through radio resource control (RRC). Further, the RLF indicator comprises a cell identifier (cell ID), and the user equipment stops uplink transmission of physical uplink shared channel (PUSCH), physical

uplink control channel (PUCCH), and sounding reference signal (SRS) to the secondary serving cell, based on the RLF for the secondary serving cell. For example, claims 9-10 of the ’283 Patent recite elements of the claimed radio link control to support dual connectivity mandated by the 5G standard, including at least 3GPP TS 38.331 and TS 38.101-3.

80. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claims 9-10 of the ’283 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claims 9-10 of the ’283 Patent (the “OnePlus Accused ’283 Instrumentalities”). Defendant also has and continues to directly infringe at least claims 9-10 by practicing claims 9-10 through the OnePlus Accused ’283 Instrumentalities, and by causing the OnePlus Accused ’283 Instrumentalities to practice the patented inventions.

81. OnePlus Accused ’283 Instrumentalities include, for example, the OnePlus Open smartphone and other 5G-compatible products that support 5G and radio link control in dual connectivity. On information and belief, each of the OnePlus Accused ’283 Instrumentalities incorporates at least one processor or modem, e.g. Snapdragon 8 Gen 2 Mobile Platform, configured to comply with or support 5G including performing radio link control to support dual connectivity. On information and belief, the processor or modem incorporated in each of the OnePlus Accused ’283 Instrumentalities is configured to support detection of a radio link failure, generation of a radio link failure indicator, and transmission of a radio link failure indicator such that the radio link failure indicator comprises a cell identifier, and the OnePlus Accused ’283 Instrumentalities stop uplink transmission of physical uplink shared channel (PUSCH), physical uplink control channel (PUCCH), and sounding reference signal (SRS) to the secondary serving

cell, based on the radio link failure for the secondary serving cell, as mandated by the 5G standard, including at least 3GPP TS 38.331 and TS 38.101-3.

82. Defendant was made aware of the ’283 Patent and its infringement thereof at least as early as July 9, 2021, when the ’283 Patent was identified in correspondence sent to OnePlus by Pantech Corp.

83. Since at least as early as July 9, 2021, Defendant’s infringement will have been, and continues to be willful.

84. Upon information and belief, the OnePlus Accused ’283 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant’s partners, clients, customers/subscribers and end users across the country and in this district.

85. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claims 9-10 of the ’283 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant’s partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused ’283 Instrumentalities constitute direct infringement of at least claims 9-10 of the ’283 Patent.

86. In particular, Defendant’s actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused ’283 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused ’283 Instrumentalities.

87. Any party, including Defendant’s partners, clients, customers/subscribers, and end users, using the OnePlus Accused ’283 Instrumentalities necessarily infringes the ’283 Patent because the inventions of the ’283 Patent are required to comply with the relevant cellular standard.

Defendant advertises its OnePlus Accused '283 Instrumentalities as compliant with 5G, which induces others to infringe the '283 Patent. Defendant has knowingly induced infringement since at least as early as July 9, 2021, when Defendant was made aware of the '283 Patent.

88. Upon information and belief, Defendant is liable as a contributory infringer of the '283 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused '283 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '283 Patent. Each of the OnePlus Accused '283 Instrumentalities is a material component for use in practicing the '283 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused '283 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

89. Pantech Corp. has been harmed by Defendant's infringing activities.

COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 10,863,573

90. The allegations set forth in the foregoing paragraphs 1 through 89 are incorporated into this claim for relief.

91. On December 8, 2020, the '573 Patent, entitled "Method and apparatus for sequential forwarding considering multi-flow in dual connectivity system," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 15/935,626, filed on March 26, 2018. The '573 Patent claims foreign priority to KR-10-2013-0053408, filed on May 10, 2013. A true and correct copy of the '573 Patent is attached as Exhibit 4.

92. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '573 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

93. The ’573 Patent discloses at least an apparatus and method for receiving multi-flow data and is applicable to Radio Resource Control (RRC) and the Packet Data Convergence protocol (PDCP). The ’573 Patent is directed to a user equipment that receives packet data convergence protocol (PDCP) packet data units (PDUs) through a macro base station (macro eNB) and a small base station (small eNB), obtains PDCP service data units (SDUs) corresponding to the PDCP PDUs, and receives from the macro base station information related to an in-sequence timer for the PDCP SDUs through a radio resource control (RRC) message. For example, claim 1 of the ’573 Patent recites elements of the claimed radio link control to support dual connectivity mandated by the 5G standard, including at least 3GPP TS 38.331, 38.323, 37.340, and 38.300.

94. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claim 1 of the ’573 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claim 1 of the ’573 Patent (the “OnePlus Accused ’573 Instrumentalities”). Defendant also has and continues to directly infringe at least claim 1 by practicing claim 1 through the OnePlus Accused ’573 Instrumentalities, and by causing the OnePlus Accused ’573 Instrumentalities to practice the patented inventions.

95. OnePlus Accused ’573 Instrumentalities include, for example, the OnePlus Open smartphone and other 5G-compatible products that support 5G and radio resource control and packet data convergence protocol. On information and belief, each of the OnePlus Accused ’573 Instrumentalities incorporates at least one processor or modem, e.g. Snapdragon 8 Gen 2 Mobile Platform, configured to comply with or support 5G including performing radio resource control and packet data convergence protocol. On information and belief, the processor or modem

incorporated in each of the OnePlus Accused '573 Instrumentalities is configured to receive packet data convergence protocol (PDCP) packet data units (PDUs) through a macro base station (macro eNB) and a small base station (small eNB), obtain PDCP service data units (SDUs) corresponding to the PDCP PDUs, and receive from the macro base station information related to an in-sequence timer for the PDCP SDUs through a radio resource control (RRC) message, as mandated by the 5G standard, including at least 3GPP TS 38.331, TS 38.323, TS 37.340, and TS 38.300.

96. Defendant was made aware of the '573 Patent and its infringement thereof at least as early as July 9, 2021, when the '573 Patent was identified in correspondence sent to OnePlus by Pantech Corp.

97. Since at least as early as July 9, 2021, Defendant's infringement will have been, and continues to be willful.

98. Upon information and belief, the OnePlus Accused '573 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant's partners, clients, customers/subscribers and end users across the country and in this district.

99. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claim 1 of the '573 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant's subsidiaries, partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused '573 Instrumentalities constitutes direct infringement of at least one claim of the '573 Patent. For example, OnePlus advertises and has advertised the use of its devices for 5G communications. *See* https://www.oneplus.com/us/open/specs.

100. In particular, Defendant's actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused '573 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused '573 Instrumentalities.

101. Any party, including Defendant's partners, clients, customers/subscribers, and end users, using the OnePlus Accused '573 Instrumentalities necessarily infringes the '573 Patent because the inventions of the '573 Patent are required to comply with the relevant cellular standard. Defendant advertises its OnePlus Accused '573 Instrumentalities as compliant with 5G, which induces others to infringe the '573 Patent. Defendant has knowingly induced infringement since at least as early as July 9, 2021, when Defendant was made aware of the '573 Patent.

102. Upon information and belief, Defendant is liable as a contributory infringer of the '573 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused '573 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '573 Patent. Each of the OnePlus Accused '573 Instrumentalities is a material component for use in practicing the '573 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused '573 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

103. Pantech Corp. has been harmed by Defendant's infringing activities.

COUNT V – INFRINGEMENT OF U.S. PATENT NO. 9,369,251

104. The allegations set forth in the foregoing paragraphs 1 through 103 are incorporated into this claim for relief.

105. On June 14, 2016, U.S. Patent No. 9,369,251, entitled "Apparatus and method for transmitting muting information, and apparatus and method for acquiring channel state using same"

was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 14/801,116, filed on July 16, 2015. The '251 Patent claims foreign priority to KR 10-2010-0077590, filed on August 11, 2010; KR 10-2010-0078536, filed on August 13, 2010; KR 10-2010-0098005, filed on October 7, 2010; and KR 10-2010-0098006, filed on October 7, 2010. A true and correct copy of the '251 Patent is attached as Exhibit 5.

106. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '251 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

107. The '251 Patent discloses methods for receiving Channel State Information-Reference Signal (CSI-RS) muting information from a serving cell. The '251 Patent specifies, *inter alia*, that the UE will receive CSI-RS muting information including a first data field that indicates a cycle and an offset of muting subframes and a second data field having n-bit bitmap (the n being an integer among 12 to 28), and receive a signal including data, mapped to resource elements using the CSI-RS muting information, the mapping process including a muting for zero power transmission. For example, claims 7, 9, 10, and 11 of the '251 Patent recite elements of CSI reference signals mandated by the LTE standard, including at least 3GPP TS 36.211 and TS 36.331.

108. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claims 7, 9, 10, and 11 of the '251 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claims 7, 9, 10, and 11 of the '251 Patent (the "OnePlus Accused '251 Instrumentalities"). Defendant also has and continues to directly infringe at least claims 7, 9, 10, and 11 by practicing

claims 7, 9, 10, and 11 through the OnePlus Accused '251 Instrumentalities, and by causing the OnePlus Accused '251 Instrumentalities to practice the patented inventions.

109. OnePlus Accused '251 Instrumentalities include, for example, the OnePlus Open and other LTE-compatible devices that support the LTE contention based cell-specific reference signal. On information and belief, each of the OnePlus Accused '251 Instrumentalities incorporates at least one processor configured to comply with LTE and to support the LTE contention based cell-specific reference signal.

110. Defendant was made aware of the '251 Patent and its infringement thereof at least as early as January 21, 2021, when the '251 Patent was identified in correspondence sent to OnePlus by Pantech Corp.

111. Since at least January 21, 2021, when it was made aware of the '251 Patent by Pantech Corp., Defendant's infringement has been, and continues to be, willful.

112. Upon information and belief, the OnePlus Accused '251 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant's partners, clients, customers/subscribers and end users across the country and in this district.

113. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claims 7, 9, 10, and 11 of the '251 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant's partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused '251 Instrumentalities constitute direct infringement of at least one claim of the '251 Patent. For example, OnePlus advertises and has advertised the use of its devices for LTE communications. *See* https://www.oneplus.com/us/open/specs.

114. In particular, Defendant's actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused '251 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused '251 Instrumentalities.

115. Any party, including Defendant's partners, clients, customers/subscribers, and end users, using the OnePlus Accused '251 Instrumentalities necessarily infringes the '251 Patent because the inventions of the '251 Patent are required to comply with the relevant cellular standards. Defendant advertises its OnePlus Accused '251 Instrumentalities as compliant with LTE, which induces others to infringe the '251 Patent. Defendant has knowingly induced infringement since at least as early as January 21, 2021, when Defendant was made aware of the '251 Patent.

116. Upon information and belief, Defendant is liable as a contributory infringer of the '251 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused '251 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '251 Patent. Each of the OnePlus Accused '251 Instrumentalities is a material component for use in practicing the '251 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused '251 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

117. Pantech Corp. has been harmed by Defendant's infringing activities.

COUNT VI – INFRINGEMENT OF U.S. PATENT NO. 9,769,776

118. The allegations set forth in the foregoing paragraphs 1 through 117 are incorporated into this claim for relief.

119. On September 19, 2017, the ’776 Patent, entitled “Apparatus and Method for Uplink Synchronizing in Multiple Component Carrier System” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 15/338,993, filed on October 31, 2016. The ’776 Patent claims foreign priority to KR 10-2012-0030216, filed on March 23, 2012. A true and correct copy of the ’776 Patent is attached as Exhibit 6.

120. Pantech Corp. is the assignee and owner of all right, title and interest in and to the ’776 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

121. The ’776 Patent discloses apparatuses and methods for uplink synchronizing in multiple component carrier system. For example, a user equipment receives cell index information associated with a serving cell, e.g. secondary serving cell, to be released or a serving cell to be added along with an identifier for a timing advance group (TAG) associated with the serving cell to be added. When adding a serving cell such as a secondary serving cell, the user equipment associates the added serving cell with another available serving cell having with the same TAG identifier. For example, claim 5 of the ’776 Patent recites elements of the claimed uplink synchronizing in multiple component carrier system mandated by the 5G standard, including at least 3GPP TS 38.321 and TS 38.331.

122. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claim 5 of the ’776 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claim 5 of the ’776 Patent (the “OnePlus Accused ’776 Instrumentalities”). Defendant also has and continues to directly infringe at least claim 5 by practicing claim 5 through the OnePlus Accused ’776

Instrumentalities, and by causing the OnePlus Accused '776 Instrumentalities to practice the patented inventions.

123. OnePlus Accused '776 Instrumentalities include, for example, the OnePlus Open and other 5G-compatible products that support 5G and/or NR. On information and belief, each of the OnePlus Accused '776 Instrumentalities incorporates at least one processor configured to comply with support 5G and/or NR. On information and belief, the processor or modem incorporated in each of the OnePlus Accused '776 Instrumentalities is configured to support uplink synchronizing in multiple component carrier system as mandated by the 5G and/or NR standard, including at least 3GPP TS 38.321 and TS 38.331.

124. Defendant was made aware of the '776 Patent and its infringement thereof at least as early as the filing of this Complaint.

125. Since at least the filing of this Complaint, when it was made aware of the '776 Patent by Pantech Corp., Defendant's infringement has been, and continues to be, willful.

126. Upon information and belief, the OnePlus Accused '776 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant's partners, clients, customers/subscribers and end users across the country and in this district.

127. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claim 5 of the '776 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant's partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused '776 Instrumentalities constitute direct infringement of at least one claim of the '776 Patent. For example, OnePlus advertises and has advertised the use of its devices for 5G communications. *See* https://www.oneplus.com/us/open/specs.

128. In particular, Defendant's actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused '776 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused '776 Instrumentalities.

129. Any party, including Defendant's partners, clients, customers/subscribers, and end users, using the OnePlus Accused '776 Instrumentalities necessarily infringes the '776 Patent because the inventions of the '776 Patent are required to comply with the relevant cellular standards. Defendant advertises its OnePlus Accused '776 Instrumentalities as compliant with 5G, which induces others to infringe the '776 Patent. Defendant has knowingly induced infringement since at least as early as the filing date of this Complaint, when Defendant was made aware of the '776 Patent.

130. Upon information and belief, Defendant is liable as a contributory infringer of the '776 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused '776 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '776 Patent. Each of the OnePlus Accused '776 Instrumentalities is a material component for use in practicing the '776 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused '776 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

131. Pantech Corp. has been harmed by Defendant's infringing activities.

COUNT VII – INFRINGEMENT OF U.S. PATENT NO. 8,995,372

132. The allegations set forth in the foregoing paragraphs 1 through 131 are incorporated into this claim for relief.

133. On March 31, 2015, the ’372 Patent, entitled “Apparatus and method for performing random access in a wireless communication system” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 13/638,507, which has a § 371(c) date of September 28, 2012. The ’372 Patent claims foreign priority to KR 10-2010-0027782, filed on March 29, 2010. A true and correct copy of the ’372 Patent is attached as Exhibit 7.

134. Pantech Corp. is the assignee and owner of all right, title and interest in and to the ’372 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

135. The ’372 Patent discloses apparatuses and methods for random access in a communication system that supports a plurality of component carriers (CCs) and relates to timing advance adjustment. For example, a user equipment performs a method of configuring a uplink (UL) timing group with certain CC properties, setting a CC satisfying at least one of certain criteria as a delegate CC, obtaining a TA value to be used for obtaining a UL timing through the delegate CC, and updating a TA value of the corresponding UL timing group based on the obtained TA value. For example, claim 1 of the ’372 Patent recites elements of random access in a wireless communication system mandated by the 5G standard, including at least 3GPP TS 38.331, TS 38.321, TS 38.300, and TS 38.213.

136. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claim 1 of the ’372 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claim 1 of the ’372 Patent (the “OnePlus Accused ’372 Instrumentalities”). Defendant also has and continues to

directly infringe at least claim 1 by practicing claim 1 through the OnePlus Accused '372 Instrumentalities, and by causing the OnePlus Accused '372 Instrumentalities to practice the patented inventions.

137. OnePlus Accused '372 Instrumentalities include, for example, the OnePlus Open and other 5G-compatible products that support 5G and/or NR. On information and belief, each of the OnePlus Accused '372 Instrumentalities incorporates at least one processor configured to comply with support 5G and/or NR.

138. Defendant was made aware of the '372 Patent and its infringement thereof at least as early as July 9, 2021, when the '372 Patent was identified in correspondence sent to OnePlus by Pantech Corp.

139. Since at least July 9, 2021, when it was made aware of the '372 Patent by Pantech Corp., Defendant's infringement has been, and continues to be, willful.

140. Upon information and belief, the OnePlus Accused '372 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant's partners, clients, customers/subscribers and end users across the country and in this district.

141. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claim 1 of the '372 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant's partners, clients, customers/subscribers, and end users, whose use of the OnePlus Accused '372 Instrumentalities constitute direct infringement of at least one claim of the '372 Patent. For example, OnePlus advertises and has advertised the use of its devices for 5G communications. *See* https://www.oneplus.com/us/open/specs.

142. In particular, Defendant's actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused '372 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused '372 Instrumentalities.

143. Any party, including Defendant's partners, clients, customers/subscribers, and end users, using the OnePlus Accused '372 Instrumentalities necessarily infringes the '372 Patent because the inventions of the '372 Patent are required to comply with the relevant cellular standards. Defendant advertises its OnePlus Accused '372 Instrumentalities as compliant with 5G, which induces others to infringe the '372 Patent. Defendant has knowingly induced infringement since at least as early as July 9, 2021, when Defendant was made aware of the '372 Patent.

144. Upon information and belief, Defendant is liable as a contributory infringer of the '372 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused '372 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '372 Patent. Each of the OnePlus Accused '372 Instrumentalities is a material component for use in practicing the '372 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused '372 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

145. Pantech Corp. has been harmed by Defendant's infringing activities.

COUNT VIII – INFRINGEMENT OF U.S. PATENT NO. 10,764,803

146. The allegations set forth in the foregoing paragraphs 1 through 145 are incorporated into this claim for relief.

147. On September 1, 2020, U.S. Patent No. 10,764,803, entitled "Enhanced uplink operation in soft handover" was duly and legally issued by the United States Patent and Trademark

Office from U.S. Patent Application No. 16/533,320, filed on August 6, 2019. The '803 Patent claims priority to U.S. Patent Application No. 15/212,403, filed on Jul. 18, 2016; U.S. Patent Application No. 13/236,133, filed on Sep. 19, 2011; U.S. Patent Application No. 10/925,426, filed on Aug. 25, 2004; U.S. Provisional Application No. 60/497,747 filed on Aug. 25, 2003; U.S. Provisional Application No. 60/507,554 filed on Oct. 1, 2003; U.S. Provisional Application No. 60/508,797 filed on Oct. 3, 2003; U.S. Provisional Application No. 60/520,207 filed on Nov. 14, 2003; and U.S. Provisional Application No. 60/585,174 filed on Jul. 2, 2004. A true and correct copy of the '803 Patent is attached as Exhibit 8.

148. Pantech Wireless is the assignee and owner of all right, title and interest in and to the '803 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

149. The '803 Patent discloses at least an apparatus and method for an enhanced uplink (EU) operation during a soft handover. The '803 Patent specifies, *inter alia*, that the UE will receive configuration information for the primary cell and the one or more non-primary cells, receive a message on the primary cell, the received message including an indication of at least one of the one or more non-primary cells from which the WTRU is to receive a downlink shared channel transmission, and receive and process the downlink shared channel transmission from the indicated at least one of the one or more non-primary cells in response to the received message. For example, claims 1 and 7 of the '803 Patent recite elements of enhanced uplink (EU) operation mandated by the LTE standard, including at least 3GPP TS 36.300, TS 36.321, and TS 36.331.

150. Upon information and belief, Defendant and/or its subsidiaries or business partners has and continues to directly infringe at least claims 1 and 7 of the '803 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and

providing to and within the United States, Accused Instrumentalities that practice at least claims 1 and 7 of the '803 Patent (the "OnePlus Accused '803 Instrumentalities"). Defendant also has and continues to directly infringe at least claims 1 and 7 by practicing claims 1 and 7 through the OnePlus Accused '803 Instrumentalities, and by causing the OnePlus Accused '803 Instrumentalities to practice the patented inventions.

151. OnePlus Accused '803 Instrumentalities include, for example, the OnePlus Open and other LTE compatible products that support enhanced uplink (EU) operation. On information and belief, each of the OnePlus Accused '803 Instrumentalities incorporate at least one processor and/or modem configured to comply with LTE and support enhanced uplink (EU) operation during a soft handover.

152. Defendant was made aware of the '803 Patent family and its infringement thereof at least as early as July 9, 2021, when it was identified in correspondence sent to OnePlus by Pantech Corp.

153. Since at least July 9, 2021, when it was made aware of the '803 Patent, Defendant's infringement has been, and continues to be, willful.

154. Upon information and belief, the OnePlus Accused '803 Instrumentalities are used, marketed, provided to, and/or used by or for Defendant's partners, clients, customers/subscribers and end users across the country and in this district.

155. Upon information and belief, Defendant has induced and continues to induce others to infringe at least claims 1 and 7 of the '803 Patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including, but not limited to Defendant's partners, clients, customers/subscribers, and end users, whose use and/or sale of the OnePlus Accused '803 Instrumentalities constitute direct

infringement of at least one claim of the ’838 Patent. For example, OnePlus advertises and has advertised the use of its devices for LTE communications. *See* https://www.oneplus.com/us/open/specs.

156. In particular, Defendant’s actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the OnePlus Accused ’803 Instrumentalities, and providing instruction materials, training and services regarding the OnePlus Accused ’803 Instrumentalities.

157. Any party, including Defendant’s partners, clients, customers/subscribers, and end users, using the OnePlus Accused ’803 Instrumentalities necessarily infringes the ’803 Patent because the inventions of the ’803 Patent are required to comply with the relevant cellular standards. Defendant advertises its OnePlus Accused ’803 Instrumentalities as compliant with LTE, which induces others to infringe the ’803 Patent. Defendant has knowingly induced infringement since at least as early as July 9, 2021, when Defendant was made aware of the ’803 Patent.

158. Upon information and belief, Defendant is liable as a contributory infringer of the ’803 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the OnePlus Accused ’803 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the ’803 Patent. Each of the OnePlus Accused ’803 Instrumentalities is a material component for use in practicing the ’803 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the OnePlus Accused ’803 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

159. Pantech Wireless has been harmed by Defendant’s infringing activities.

COUNT IX – BREACH OF FRAND

160. The allegations set forth in the foregoing paragraphs 1 through 159 are incorporated into this claim for relief.

161. The European Telecommunications Standards Institute (ETSI) Rules of Procedure Annex 6 at Clause 3.2 states:

> IPR holders whether members of ETSI and their AFFILIATES or third parties, should be adequately and fairly rewarded for the use of their IPRs in the implementation of STANDARDS and TECHNICAL SPECIFICATIONS.

162. An implementer of an adopted standard who fails to negotiate in good faith towards a patent license agreement and thereby prevents a license from being granted on FRAND terms is liable to the patent holder for damages, including but not limited to attorney's fees and the cost of litigation.

163. As an implementer of wireless standards for which Pantech's patents are essential, as an affiliate of Guangdong OPPO Mobile Telecommunications Corp., Ltd. ("OPPO") which is a signatory to ETSI, and having invoked FRAND obligations in its communications with Pantech and in prior litigation, Defendant is and has been obligated to negotiate in good faith towards a patent license agreement for these patents on FRAND terms, which it has not done. Defendant failed to negotiate in good faith and engaged in holdout behavior to extract unfair licensing terms.

164. Pantech, which has complied with ETSI's intellectual property policy and has negotiated in good faith, has been harmed by Defendant's breach of its FRAND obligations, wherein the damages include but are not limited to the attorney's fees and the cost of litigation it has thus far incurred and is incurring in its attempts to compel Defendant to enter into a license on FRAND terms.

COUNT X – UNJUST ENRICHMENT

165. The allegations set forth in the foregoing paragraphs 1 through 164 are incorporated into this claim for relief.

166. In negotiations with Pantech, Defendant failed to negotiate in good faith and engaged in holdout behavior to extract unfair licensing terms. In so doing, Defendant has been unjustly enriched, as it has not paid licensing royalties to adequately and fairly reward Pantech for the innovations of their SEP portfolio.

167. Pantech, which has complied with ETSI's intellectual property policy and has negotiated in good faith, has been harmed by Defendant's failure to negotiate in good faith and holdout behavior.

DAMAGES

As a result of Defendant's acts of infringement, breach of FRAND obligations, and unjust enrichment, Pantech has suffered actual and consequential damages. To the fullest extent permitted by law, Pantech seeks recovery of damages at least in the form of reasonable royalties, along with damages suffered from OnePlus's breach of its FRAND obligations and restitution to compensate for OnePlus's unjust enrichment.

NOTICE

Pantech Corp. and Pantech Wireless have complied with the notice requirement of 35 U.S.C. § 287 as they do not currently distribute, sell, offer for sale, or make products embodying the Asserted Patents which would require marking. In addition, OnePlus has had actual knowledge

of the Asserted Patents and its infringement thereof at least as of receipt of the Pantech and/or Signal Trust notice letters identified in this Complaint.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiffs demand a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs demand judgment for itself and against Defendant as follows:

A. An adjudication that Defendant has infringed one or more claims of the Asserted Patents, literally and/or under the doctrine of equivalents;

B. An adjudication that Defendant has indirectly infringed one or more claims of the Asserted Patents, literally and/or under the doctrine of equivalents;

C. An award of damages to be paid by Defendant adequate to compensate Plaintiffs for Defendant's past infringement of the Asserted Patents, and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

D. An award related to any other equitable relief which may be requested and to which Plaintiffs are entitled;

E. A declaration that this case is exceptional under 35 U.S.C. § 285;

F. An award of Plaintiffs' reasonable attorneys' fees;

G. A declaration that Defendant's acts of infringement were willful;

H. An award of enhanced damages against Defendant pursuant to 35 U.S.C. § 284;

I. An adjudication that Defendant has breached its FRAND obligations to Plaintiff;

J. An award of damages to be paid by Defendant adequate to compensate Plaintiffs for damages suffered from its breach of FRAND obligations;

K. An adjudication that Defendant has been unjustly enriched;

L. An award of restitution to compensate Plaintiffs for Defendant's unjust enrichment; and

M. An award to Plaintiffs of such further relief at law or in equity as the Court deems just and proper.

Dated: March 14, 2024

Respectfully submitted,

/s/ Geoff Culbertson

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