

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

PANTECH CORPORATION and PANTECH
WIRELESS, LLC

Plaintiffs,

v.

LG ELECTRONICS INC., and LG
ELECTRONICS U.S.A., INC.,

Defendants.

Case No.

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Pantech Corporation (“Pantech Corp.”) and Pantech Wireless, LLC (“Pantech Wireless”) (collectively, “Plaintiffs” or “Pantech”), for their Complaint against Defendants LG Electronics Inc. (“LGE”) and LG Electronics U.S.A., Inc. (“LGEUS”) (collectively, “LG” or “Defendants”), 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 3000 Polar Lane, #202, Cedar Park, TX 78613.

4. Defendant LG Electronics Inc. is a company under the laws of the Republic of Korea with its principal place of business at LG Twin Towers 20 Yoido-dong, Youngdungpo-gu, Seoul, South Korea.

5. Defendant LG Electronics U.S.A., Inc., is a Delaware corporation with a principal place of business at 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey 07632. LGEUS is a wholly-owned subsidiary of LGE, and has regular and established places of business within this District at 2153-2155 Eagle Pkwy, Fort Worth, TX 76177 and 14901 Beach St, Fort Worth, TX 76177. LGEUS may be served with process through its Texas registered agent, United States Corporation Co., 211 East 7th Street, Suite 620, Austin, Texas 78701.

6. Defendants are or have been in the business of providing information and communication technology solutions. Specifically, Defendants have provided and made available for sale wireless telecommunications equipment, including smartphones and mobile devices.

JURISDICTION AND VENUE

7. 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.*

8. This Court has personal jurisdiction over Defendants pursuant to due process and/or the Texas Long Arm Statute because, inter alia, (i) Defendants have done and continue to do business in the United States, including in the State of Texas; (ii) Defendants have committed and continue to commit acts of patent infringement in the United States, including in the State of Texas, including 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, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in the United States and Texas, and/or committing a least a portion of any other

infringements alleged herein. LGEUS has maintained regular and established places of business within this District at 2153-2155 Eagle Pkwy, Fort Worth, TX 76177 and 14901 Beach St, Fort Worth, TX 76177. The address at 14901 Beach St, Fort Worth, TX 76177 is a distribution center. Defendants design, manufacture, distribute, import, offer for sale, and/or sell in the State of Texas and the Eastern District of Texas smartphones and tablets that infringe the Patents asserted in this matter. Further, Defendants have consented to jurisdiction for patent infringement actions wherein substantially the same accused devices are at issue, for example in *Spacetime3D, Inc. v. LG Electronics Inc. et al.*, No 2:22-cv-00049-RWS.

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

10. Venue is proper in this district as to Defendants. LGEUS has maintained regular and established places of business within this District at 2153-2155 Eagle Pkwy, Fort Worth, TX 76177 and 14901 Beach St, Fort Worth, TX 76177. LGE is organized under the laws of South Korea. 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

11. Defendants make, use, sell and offer for sale, provide, and cause to be used, now and within the past six years, mobile phones, tablets, and certain other devices capable of operating on LTE and 5G cellular networks (the “Accused Instrumentalities”).

12. For example, Defendants advertise that the LG K22; LG K31; LG Arena 2; LG Aristo 3+; LG Aristo 3; LG Aristo 4+; LG Aristo 5; LG Dual Screen for LG VELVET 5G; LG Escape Plus; LG Fortune 2; LG Fortune 3; LG G5; LG G6; LG G6+; LG G7 fit; LG G7 ThinQ; LG G8 ThinQ; LG G8X ThinQ; LG G8X ThinQ Dual Screen; LG Harmony 3; LG Harmony 4;

LG Journey LTE; LG K20; LG K30; LG K31 Rebel; LG K40; LG K51; LG K8 (2018); LG K8+; LG K8S; LG K8X; LG K92 5G; LG Neon Plus; LG phoenix 4; LG Phoenix 5; LG Premier Pro LTE; LG Prime 2; LG Q7+; LG Q70; LG Rebel 4 LTE; LG Reflect; LG Risio 3; LG Risio 4; LG Solo LTE; LG Stylo 3 LTE (GSM); LG Stylo 3 Plus Titanium; LG Stylo 4; LG Stylo 4 Plus; LG Stylo 4+; LG Stylo 5; LG Stylo 5+; LG Stylo 5x; LG Stylo 6; LG Tribute Empire; LG Tribute Monarch; LG Tribute Royal; LG V20; LG V30; LG V30+; LG V35 ThinQ; LG V40 ThinQ; LG V50 ThinQ 5G; LG V60 ThinQ 5G; LG V60 ThinQ 5G Dual Screen; LG V60 ThinQ 5G UW; LG VELVET 5G; LG VELVET 5G UW; LG Wine 2; LG WING 5G; LG X venture; LG Xpression Plus; LG Xpression Plus 2; LG Xpression Plus 3, LG G Pad 5 10.1 FHD; LG G Pad F2 8.0; LG G Pad X II 8.0 PLUS; LG G Pad X II 10.1"; LG G Pad F 8.0" 2nd Gen; LG G Pad X 8.0"; LG G Pad F 8.0" 2nd Gen; LG G Pad F 8.0; LG G Pad X 10.1"; LG G Pad X 8.3; LG G Pad F7.0; LG G Pad 7.0 LTE; and LG G Pad 8.3 LTE devices are compliant with LTE and/or 5G cellular network standards. In addition, on information and belief, Defendants supply Telematic Control Unit ("TCU") products that are compliant with at least LTE network standards, including Gen10, Gen10A, Gen10AL, Gen10ALNB, Gen10B, Gen10BL, Gen10BLNB, Gen10BTBU, Gen10C, Gen10CL, Gen10CLNB, Gen10D, Gen10DL, Gen10DLNB, Gen10L, Gen10LNB, and Gen11NAN.

PATENTS-IN-SUIT

13. The Asserted Patents are U.S. Patent Nos. 9,136,924; 9,854,545; 10,869,247; 9,313,809; 9,065,486; 7,283,839; and 9,575,631.

14. U.S. Patent No. 9,136,924 (the "'924 Patent") is entitled "Transmitting device and a method of communicating therewith, and receiving device and a method of communicating

therewith.” On May 7, 2020 Pantech Corp. obtained full and complete ownership, title and interest in the ’924 Patent.¹

15. U.S. Patent No. 9,854,545 (the “’545 Patent”) is entitled “Apparatus and method for establishing uplink synchronization in a wireless communication system.” On May 7, 2020 Pantech Corp. obtained full and complete ownership, title and interest in the ’545 Patent.²

16. U.S. Patent No. 10,869,247 (the “’247 Patent”) is entitled “Supporting uplink transmissions.” On April 27, 2021, Pantech Wireless obtained full and complete ownership, title and interest in the ’247 Patent.³

17. U.S. Patent No. 9,313,809 (the “’809 Patent”) is entitled “Method and apparatus for terminating transmission of a message in an enhanced random access channel.” On April 27, 2021, Pantech Wireless obtained full and complete ownership, title and interest in the ’809 Patent.⁴

¹ The named inventor of the ’924 Patent is Kyoungmin Park. The U.S. patent application is the national stage entry of PCT/KR2011/004835, filed July 1, 2011, and the ’924 Patent issued on September 15, 2015. On December 28, 2012, the inventor assigned the application underlying the ’924 Patent to Pantech Co., Ltd. On July 6, 2016, Pantech Co., Ltd., transferred the interest to Pantech Inc. On Oct. 31, 2016, Pantech Inc. transferred the interest to Goldpeak Innovations Inc. On May 7, 2020, Goldpeak Innovations Inc. transferred the interest to Pantech Corp.

² The named inventors of the ’545 Patent are Kibum Kwon and Myungcheul Jung. The U.S. Patent application was filed on June 8, 2015, and the ’545 Patent issued on December 26, 2017. On August 10, 2012, the inventors assigned the application underlying the ’545 Patent to Pantech Co., Ltd. On July 6, 2016, Pantech Co., Ltd. transferred the interest to Pantech Inc. On Oct. 31, 2016, Pantech Inc. transferred the interest to Goldpeak Innovations Inc. On May 7, 2020, Goldpeak Innovations Inc. transferred the interest to Pantech Corp.

³ The named inventors of the ’247 Patent are Guodong Zhang, Sung-Hyuk Shin, Stephen E. Terry, James M. Miller, and Stephen G. Dick. The U.S. patent application was filed on August 31, 2020 and the ’247 Patent issued on December 15, 2020. On October 5, 2006, the inventors assigned the parent application, U.S. Patent App. No. 10/962,720 and any continuations thereto, including the application underlying the ’247 Patent, to InterDigital Technology Corporation. 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. (InterDigital Technology Corporation, InterDigital Holdings, Inc., InterDigital, Inc. and DST Holdings, Inc., collectively, “InterDigital”) transferred the interest to Signal Trust for Wireless Innovation (“Signal Trust”). On December 30, 2020, Signal Trust transferred the interest to RnB Wireless LLC (“RnB Wireless”). On April 27, 2021, RnB Wireless transferred the interest to Pantech Wireless.

⁴ The named inventors of the ’809 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 June 30, 2014, and the ’809 Patent issued on April 12, 2016. Between November 24, 2008 and December 5, 2008, the inventors assigned the application underlying the ’809 Patent to InterDigital Patent Holdings, Inc. On October 11, 2013, InterDigital Patent Holdings, Inc. transferred the interest to InterDigital Holdings, Inc., who transferred the interest to InterDigital Inc.,

18. U.S. Patent No. 9,065,486 (the “’486 Patent”) is entitled “Detection, avoidance and/or correction of problematic puncturing patterns in parity bit streams used when implementing turbo codes.” On April 27, 2021, Pantech Wireless obtained full and complete ownership, title and interest in the ’486 Patent.⁵

19. U.S. Patent No. 7,283,839 (the “’839 Patent”) is entitled “Wireless communicating terminal for providing integrated messaging service and method thereof.” On May 7, 2020 Pantech Corp. obtained full and complete ownership, title and interest in the ’839 Patent.⁶

20. U.S. Patent No. 9,575,631 (the “’631 Patent”) is entitled “Method for selecting and controlling second work process during first work process in multitasking mobile terminal.” On May 7, 2020 Pantech Corp. obtained full and complete ownership, title and interest in the ’631 Patent.⁷

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.

⁵ The named inventors of the ’486 Patent are Philip J. Pietraski and Gregory S. Sternberg. The U.S. Patent Application was filed June 10, 2014, and the ’486 Patent issued on June 23, 2015. On April 28, 2004, the inventors assigned the application underlying the ’486 Patent to InterDigital Technology Corporation. On January 21, 2016, 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 February 9, 2016, DST Holdings, Inc. transferred the interest to Signal Trust. On March 17, 2016 Signal Trust transferred the interest to InterDigital Holdings, Inc., who transferred the interest to InterDigital, Inc., who transferred the interest to DST Holdings, Inc. On December 30, 2020, DST Holdings, Inc. transferred the interest to RnB Wireless. On April 27, 2021, RnB Wireless transferred the interest to Pantech Wireless.

⁶ The named inventors of the ’839 Patent are Jin-Woo You and SangWoo Suk. The U.S. Patent Application was filed April 13, 2005, and the ’839 Patent issued on October 16, 2007. On July 8, 2005, the inventors assigned the application underlying the ’839 Patent to Curitel Communications, Inc. On August 2, 2002, Curitel Communications Inc. changed its name to Pantech & Curitel Communications Inc. On December 30, 2009, Pantech & Curitel Communications Inc. transferred its interest to Pantech Co., Ltd. On October 22, 2015, Pantech Co., Ltd. transferred its interest to Pantech Inc. On Oct. 31, 2016, Pantech Inc. transferred the interest to Goldpeak Innovations Inc. On May 7, 2020, Goldpeak Innovations Inc. transferred the interest to Pantech Corp.

⁷ The named inventors of the ’631 Patent are Seul Ki Choi and Sang Jin Yoon. The U.S. Patent Application was filed January 29, 2016, and the ’631 Patent issued on February 21, 2017. On July 10, 2006, the inventors assigned the application underlying the ’631 Patent to Pantech & Curitel Communications Inc. On December 30, 2009, Pantech & Curitel Communications Inc. transferred its interest to Pantech Co., Ltd. On October 22, 2015, Pantech Co., Ltd. transferred its interest to Pantech Inc. On Oct. 31, 2016, Pantech Inc. transferred the interest to Goldpeak Innovations Inc. On May 7, 2020, Goldpeak Innovations Inc. transferred the interest to Pantech Corp.

21. Pantech Corp. is the rightful owner of the '924, '545, '839, and '631 Patents and holds the entire right, title and interest in the '924, '545, '839, and '631 Patents, including the right to collect for past damages.

22. Pantech Wireless is the rightful owner of the '247, '809, and '486 Patents and holds the entire right, title and interest in the '247, '809, and '486 Patents, including the right to collect for past damages.

BACKGROUND

Pantech Corp. and the Asserted Patents

23. Pantech Co., Ltd., the predecessor in interest to what is now Pantech Corp.,⁸ was originally founded in 1991 in Seoul, South Korea as a competitor in the wireless phone marketplace.

24. 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.

25. 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.

26. 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

⁸ 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 (these three entities are hereinafter referred to collectively as "Pantech").

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

27. 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, Wi-Fi, Near Field Communication (NFC), Visible Light Communication, Human Body Communication, Ultra-Wideband Communication and IP Mesh Network.

28. 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.

29. 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.

30. Pantech Corp. is the owner by assignment of a portfolio of patents, including the Asserted Patents described in paragraphs 14, 15, 19, and 20 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, as discussed herein.

Pantech Wireless and the Asserted Patents

31. 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 wireless standards over the past 20 years.

32. In 2013, InterDigital established Signal Trust to monetize various patents and patent applications relating to cellular wireless technologies developed by InterDigital's engineers and researchers over more than a decade. Distributions from Signal Trust were earmarked to, among other things, 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.

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

34. Pantech Wireless is the owner by assignment of a portfolio of patents, including the Asserted Patents described in paragraphs 16-18 above and in the counts below, that relate to technologies used in cellular communications networks and associated devices, including, but not limited to 3G, 4G/LTE, and 5G technologies, as discussed herein.

Negotiations Between the Parties

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

36. 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.

37. 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>.

38. Defendants are 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.

39. On September 22, 2020, Pantech Corp. first sent a letter to LGE and LGEUS 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 Defendants’ products that were covered by claims of the offered patents, identified exemplary patents infringed by LG and its customers and users, including the asserted ’545 and ’839 Patents, and attached a list of Pantech’s patents. On January 27, 2021, Pantech Corp. provided LGE with follow-up correspondence offering again to license its patent portfolio. The

correspondence again identified exemplary patents infringed by LG and its customers and users, including the asserted '924 and '631 Patents, and set forth Pantech's FRAND offer.

40. Following the January 27, 2021 letter, Pantech Corp. engaged in additional communication with LGE 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, exemplary patents, and or its licensing proposal to LGE on at least February 15, 2021, March 10, 2021, and June 23, 2021, at which time discussions were enlarged to also include Pantech Wireless's portfolio. As set forth in further detail below, such discussions did not lead to a license.

41. On February 27, 2015, Signal Trust first sent a letter to Mr. Joo Sup Kim, Vice President of Intellectual Property for LG Electronics, Inc., offering to license Signal Trust's wireless patent portfolio, a portion of which is now owned by Pantech Wireless and includes the asserted '247, '809, and '486 Patents. Signal Trust followed up with additional correspondence, dated April 22, 2015, to Jeongsu Kang of LGE, providing LGE with claim charts for exemplary patents and identifying exemplary infringing LGE products. The provided claim charts included claim charts for priority patents to each of the asserted '247 and '809 Patents. On April 29, 2016, Signal Trust provided additional claim charts to LGE, including one for the asserted '809 Patent. The parties thereafter exchanged correspondence and/or held meetings regarding these patents or their families on at least May 3, 2016, October 19, 2016; November 2, 2016; February 10, 2017; February 15, 2017 (on which date a claim chart for the '486 patent was provided to LGE); April 19, 2017; September 7, 2017 (on which date LGE was provided new claim chart for another priority patent to the '247 Patent and the parties discussed the '486 Patent); December 12, 2017; May 8, 2018; August 23, 2019 (on which date LGE was provided yet another priority patent to

the '247 Patent); November 20, 2019; January 29, 2020; February 6, 2020; and July 3, 2020. The parties held at least three additional meetings and exchanged extensive correspondence regarding licensing terms during this timeframe as well.

42. On May 6, 2021, Pantech Corp. followed up on Signal Trust's prior negotiations by sending an email notifying LGE that Pantech Wireless had acquired a portion of the Signal Trust portfolio of patents, including the asserted '247, '809, and '486 Patents. On July 12, 2021, Pantech Corp. sent another letter to Mr. Sehyun Steve Kim of LGE wherein it reiterated its prior notification that Pantech Wireless had acquired a portion of the Signal Trust portfolio of patents and provided a list of the acquired patents. In this correspondence, Pantech specifically identified the asserted '247 Patent as an exemplary infringed patent and made a licensing offer that included the Pantech Wireless patents.

43. Since advising LGE of the Signal Trust portfolio acquisition, Pantech Corp. (on behalf of itself and Pantech Wireless) continued to engage in negotiations with LGE regarding a license to the Pantech Corp. and Pantech Wireless portfolios. The parties exchanged additional emails and letters, and held additional meetings, on at least September 16, 2021, September 28, 2021, October 12, 2021, November 30, 2021, December 22, 2021, January 4, 2022, June 30, 2022, and July 28, 2022. At these meetings, the parties held technical discussions regarding exemplary patents and also discussed Pantech's FRAND offer.

44. Pantech (and Signal Trust before it) has continuously attempted to license to LG their patents—including the patents asserted herein—for years on fair, reasonable, and nondiscriminatory terms ("FRAND"), yet LG has still elected not to license Pantech's patents. Indeed, despite the amount of time that has passed since Pantech first reached out, LG has never provided Pantech a counter offer. The result is that LG is an unwilling licensee that has, for several

years, made, used, sold, and offered for sale, and continues today to make, use, sell and offer for sale Pantech's patented technology without license.

45. In accordance with ETSI's policy, Pantech Corp. and Pantech Wireless (through Pantech Corp.) provided Defendants with multiple license offers on terms that are 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).

46. Pantech Corp. and Pantech Wireless have made continuous and good faith efforts to negotiate a FRAND license with Defendants, 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, Defendants have not engaged in good faith discussions or negotiations with Pantech Corp. or Pantech Wireless.

47. Defendants have been operating and continue to operate without a license to Plaintiffs' standards-essential and other patents. The parties' licensing negotiations to-date have been unsuccessful because Defendants refused to accept Plaintiffs' FRAND licensing offers.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 9,136,924

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

49. On September 15, 2015, the '924 Patent, entitled "Transmitting device and a method of communicating therewith, and receiving device and a method of communicating

therewith” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 13/807,706, which was the national stage entry of International Application No. PCT/KR2011/004835, filed on July 1, 2011. The ’924 Patent claims priority to KR 10-2010-0064573, filed on July 5, 2010. A true and correct copy of the ’924 Patent is attached as Exhibit 1.

50. Pantech Corp. is the assignee and owner of all right, title and interest in and to the ’924 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 ’924 Patent discloses at least apparatuses and methods for receiving codebook restriction information in a wireless system to restrict precoding matrixes of precoding matrix groups and transmit precoding matrix information indicating selecting a precoding matrix based on codebook restricting information. Codebook restriction may improve communication in a wireless system by, for example, reducing inter-cell interference in advance, improve communication quality, and so on. This codebook restriction scheme, for example, generates a codebook including various precoding matrices, selects a precoding matrix to be used/not used in the codebook for each cell or each user equipment, and uses different codebooks for each cell or each user equipment based on codebook restricting information associated with a precoding matrix to be not used. For example, claims 17-19, 22-25, and 28 of the ’924 Patent recite elements of channel status information (CSI) reporting using a codebook restriction scheme mandated by the 5G standard, including at least 3GPP TS 38.214, TS 38.321, and TS 38.331. *See* 3GPP TS 38.214 v16.5.0 at 50, 55, 67-70, 164 (§§ 5.2.1.1, 5.2.1.4.2, 5.2.2.2.1, 8.5.3) (discussing CSI reporting configuration and codebook restriction); 3GPP TS 38.321 v16.5.0 at 80 (§ 5.18.3) (discussing aperiodic CSI trigger state subselection); 3GPP TS 38.331 v16.5.0 at 70-71, 374-75, 384-87, 401,

405-06, 409-13, (§§ 5.3.5.5, 6.3.2) (discussing cell group configuration, codebook configuration and restriction).

52. Upon information and belief, Defendants have and continue to directly infringe at least claims 17-19, 22-25, and 28 of the '924 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 17-19, 22-25, and 28 of the '924 Patent (the "LG Accused '924 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 17-19, 22-25, and 28 by practicing claims 17-19, 22-25, and 28 through the LG Accused '924 Instrumentalities, and by causing the LG Accused '924 Instrumentalities to practice the patented inventions.

53. LG Accused '924 Instrumentalities include, for example, the LG V60 ThinQ 5G and other 5G-compatible devices.

54. Defendants were made aware of the '924 Patent family and their infringement thereof at least as early as September 22, 2020, when the '924 Patent was identified in correspondence sent to Defendants by Pantech Corp.

55. Since at least as early as September 22, 2020, Defendants' infringement has been, and continues to be willful.

56. Upon information and belief, the LG Accused '924 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

57. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 17-19, 22-25, and 28 of the '924 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '924 Instrumentalities constitutes direct infringement of at least claims 17-19, 22-25, and 28 of the '924 Patent. For example, Defendants advertise and have advertised the use of the LG Accused '924 Instrumentalities for 5G communications. *See* <https://www.lg.com/us/cell-phones/lg-lmv600amaattcb-att-v60-thinq-5g>.

58. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the LG Accused '924 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '924 Instrumentalities.

59. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the LG Accused '924 Instrumentalities necessarily infringes the '924 Patent because the inventions of the '924 Patent are required to comply with the 5G cellular standard (3GPP TS 38.214, TS 38.321, and TS 38.331). Defendants advertise the LG Accused '924 Instrumentalities as compliant with 5G, which induces others to infringe the '924 Patent. Defendants have knowingly induced infringement since at least September 22, 2020, when Defendants were first made aware of the '924 Patent, as discussed above.

60. Upon information and belief, Defendants are liable as contributory infringers of the '924 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '924 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '924 Patent. Each of the LG Accused '924 Instrumentalities is a material component for use in practicing the '924 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular,

each of the LG Accused '924 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 Defendants' infringing activities.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 9,854,545

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

63. On December 26, 2017, the '545 Patent, entitled "Apparatus and method for establishing uplink synchronization in a wireless communication system" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 14/733,068, filed on June 8, 2015. The '545 Patent claims priority to U.S. Patent Application No. 13/578,531, filed as PCT/KR2011/000909 on February 10, 2011, as well as Korean Patent Publication KR10-2010-0012564, filed February 10, 2010, Korean Patent Publication KR10-2010-0027230, filed March 26, 2010, and Korean Patent Publication KR10-2010-0008683, filed January 28, 2010. A true and correct copy of the '545 Patent is attached as Exhibit 2.

64. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '545 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for their infringement.

65. The '545 Patent discloses at least apparatuses and methods for establishing uplink synchronization in a wireless communication with respect to at least one Component Carrier ("CC"), through the use of timing groups. For instance, a user equipment configures one or more uplink timing groups based on information received through Radio Resource Control (RRC) signaling, transmits a Random Access Preamble (RAP) through one or more CCs in a respective timing group, and receives in response a timing advance value to apply to uplink CCs in the timing group. For example, claims 2 and 3 of the '545 Patent recite elements of the carrier aggregation

functionality mandated by at least the LTE Advanced standard, including at least the following 3GPP technical specifications: TS 36.300, TS 36.321, TS 36.213, TS 36.211, and TS 36.331, Release 11 and higher. *See, e.g.*, 3GPP 36.331 v11.2.0 at 51 (§ 5.3.5.3), 64 (§ 5.3.10.0), 66 (5.3.10.4) (the UE receives, through RRC signaling, configuration information relating to secondary timing advance group sTAG for a secondary component carrier); 3GPP TS 36.300 v11.6.0 at 48 (§ 5.5), 60 (§ 7.5), 72 (§ 10.1.2.7) (specifying multiple timing advance capability and multiple timing advance groups; addition and configuration of secondary cells with uplink component carriers; and use of timing reference cells); *id.* at 72-75 (§ 10.1.5) (random access procedure used to obtain timing advance alignment for secondary timing advance group ("sTAG")); *id.* at 74-75 (§ 10.1.5.2) (specifying random access procedure steps performed by the UE including transmission of random access preamble and reception of random access response); 3GPP TS 36.321 v11.1.0 at 17-18 (§ 5.2), 43-44 (§ 6.1.5), 46 (§ 6.2.3) (MAC Random Access Responses include Timing Advance Command; UE applies Timing Advance Command upon receiving MAC); 3GPP TS 36.213 v11.1.0 at 9-10 (§ 4.2.3) (UE adjusts uplink transmission timing of sTAG upon reception of Timing Advance Command); 3GPP TS 36.211 v11.1.0 at 104 (§ 8.1) (specifying uplink-downlink frame timing). Compliance with these technical specifications, and thus with at least the LTE Advanced standard, requires the use of the invention recited in at least claims 2 and 3 of the '545 Patent, including the functionality described in this paragraph.

66. Furthermore, claims 2 and 3 of the '545 Patent also recite elements of the carrier aggregation and/or multi-radio dual connectivity functionality mandated by at least the 5G standard, including at least the following 3GPP technical specifications: TS 36.300, TS 36.213, TS 36.321, TS 36.211, TS, 36.331, TS 37.340, TS 38.300, TS 38.321, and TS 38.331, Release 16 and higher. *See, e.g.*, 3GPP TS 38.300 v16.0.0 at 8 (§ 1), 11-12 (§ 4.1), 24 (Section 5.4.1)

(specifying architecture including a gNB for providing NR connectivity interconnected with an eNB for providing EUTRA connectivity; specifying multiple timing advance capability and multiple timing advance groups); 3GPP TS 38.331 v16.0.0 at 55-56 (§ 5.3.5.1), 57 (§ 5.3.5.3), 62-66 (§ 5.3.5.5), 239-41 (§ 6.2.2), 605 (UE receives RRC signaling, including RRCReconfiguration with `mrdc-SecondaryCellGroupConfig`; specifying configuration of Master Cell Group and Secondary Cell Group, and configuration and addition of timing groups); 3GPP TS 38.321 v16.0.0 at 9 (§ 3.1) (timing advance group comprises a group of serving cells using the same timing reference cell and Timing Advance value); 3GPP TS 37.340 v16.2.0 at 7-12, 15 (§ 6.1), 27-28 (§ 10.2.2) (providing for Multi-Radio Dual Connectivity (“MR-DC”) and NR-E-UTRA Dual Connectivity; specifying Secondary Node Addition procedure including reception by the UE of a SN RRC reconfiguration message originating from the SN and relayed by the MN to the UE; MR-DC supports random access procedure and MAC entities); 3GPP TS 36.300 v16.0.0 at 116 (§ 10.1.2.7) (specifying that eNB maintains timing advance; disclosing multiple groups and use of timing reference cells); *id.* at 136-40 (§ 10.1.5) (random access procedure used to obtain timing advance alignment for secondary timing advance group (“sTAG”)); 3GPP TS 36.321 v16.0.0 at 31-32 (§ 5.2), 94 (§ 6.1.3.5), 110-11 (§ 6.1.5), 117 (§ 6.2.3) (MAC Random Access Responses include Timing Advance Command; UE applies Timing Advance Command upon receiving MAC); 3GPP TS 36.213 v16.0.0 at 12-13 (§ 4.2.3) (UE adjusts uplink transmission timing of sTAG upon reception of Timing Advance Command); 3GPP TS 36.211 v16.0.0 at 193 (§8.1) (specifying uplink-downlink frame timing); 3GPP 36.331 at 121-23 (§ 5.3.5.3) (the UE performs secondary cell group configuration in response to RRC signaling). Compliance with these technical specifications, and thus with at least the 5G standard, requires the use of the invention

recited in at least claims 2 and 3 of the '545 Patent, including the functionality described in this paragraph.

67. Upon information and belief, Defendants have and continue to directly infringe at least claims 2 and 3 of the '545 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 2 and 3 of the '545 Patent (the "LG Accused '545 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 2 and 3 by practicing claims 2 and 3 through the LG Accused '545 Instrumentalities, and by causing the LG Accused '545 Instrumentalities to practice the patented inventions.

68. LG Accused '545 Instrumentalities include, for example, the LG V60 ThinQ 5G and other LTE-compatible products that support LTE carrier aggregation and/or other 5G-compatible products that support carrier aggregation and/or multi-radio dual connectivity. On information and belief, each of the LG Accused '545 Instrumentalities incorporates at least one processor configured to comply with (1) LTE Advanced, including supporting LTE carrier aggregation, and thus including at least the following 3GPP technical specifications: TS 36.300, TS 36.321, TS 36.213, TS 36.211, and TS 36.331, each Release 11 and higher; and/or (2) 5G, including supporting carrier aggregation and/or multi-radio dual connectivity mandated by the 5G standard, and thus including at least the following 3GPP technical specifications: TS 36.300, TS 36.213, TS 36.321, TS 36.211, TS, 36.331, TS 37.340, TS 38.300, TS 38.321, and TS 38.331, Release 16 and higher.

69. LG Accused '545 Instrumentalities incorporate a chipset, application processor, SoC, or system-on-chip that, on information and belief, support (1) LTE carrier aggregation; and/or (2) 5G carrier aggregation and/or multi-radio dual connectivity. On information and belief,

each incorporated chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced cellular communication protocols (including at least 3GPP TS 36.300, TS 36.321, TS 36.213, TS 36.331, and TS 36.211, Release 11 or later) and 5G cellular communication protocols (including at least TS 36.300, TS 36.213, TS 36.321, TS 36.211, TS, 36.331, TS 37.340, TS 38.300, TS 38.321, and TS 38.331, Release 16 or later).

70. Defendants were made aware of the '545 Patent family and their infringement thereof at least as early as September 22, 2020, when the '545 Patent was identified in correspondence sent to Defendants by Pantech Corp.

71. Since at least as early as September 22, 2020, Defendants' infringement has been, and continues to be willful.

72. Upon information and belief, the LG Accused '545 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

73. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 2 and 3 of the '545 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '545 Instrumentalities constitutes direct infringement of at least claims 2 and 3 of the '545 Patent. For example, Defendants advertise and have advertised the use of the LG Accused '545 Instrumentalities for LTE and 5G communications. *See* <https://www.lg.com/us/cell-phones/lg-lmv600amaattcb-att-v60-thinq-5g>.

74. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the

LG Accused '545 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '545 Instrumentalities.

75. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the LG Accused '545 Instrumentalities necessarily infringes the '545 Patent because the inventions of the '545 Patent are required to comply with the LTE and 5G cellular standards identified in the preceding paragraphs of this Count. Defendants advertise the LG Accused '545 Instrumentalities as compliant with LTE and 5G, which induces others to infringe the '545 Patent. Defendants have knowingly induced infringement since at least September 22, 2020, when Defendants were first made aware of the '545 Patent, as discussed above.

76. Upon information and belief, Defendants are liable as contributory infringers of the '545 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '545 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '545 Patent. Each of the LG Accused '545 Instrumentalities is a material component for use in practicing the '545 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the LG Accused '545 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

77. Pantech Corp. has been harmed by Defendants' infringing activities.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 10,869,247

78. The allegations set forth in the foregoing paragraphs 1 through 77 are incorporated into this claim for relief.

79. On December 15, 2020, the '247 Patent, entitled "Supporting Uplink Transmissions," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 17/008,439, filed on August 31, 2020. The '247 Patent claims

priority to at least provisional application No. 60/517,656, filed on November 5, 2003. A true and correct copy of the '247 Patent is attached as Exhibit 3.

80. Pantech Wireless is the assignee and owner of all right, title and interest in and to the '247 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

81. The '247 Patent discloses at least a method and an apparatus for supporting uplink transmissions. For example, the '247 Patent discloses a method of transmitting a data block to a base station using a hybrid automatic repeat request (H-ARQ) process, receiving uplink scheduling information from the base station, and determining whether to retransmit the data block based on the received uplink scheduling information and not based on whether the UE has received a negative acknowledgment (NACK) from the base station. Compliance with 3GPP TS 38.212 and TS 38.321, as required by at least the 5G cellular standard, requires the use of the inventions recited in at least claims 1, 2, 8, 11, 12, and 18 of the '247 Patent, including the functionality described in this paragraph. *See* 3GPP TS 38.212 V15.8.0 at 74 (disclosing receiving uplink scheduling information) and TS 38.321 V15.8.0 at 28 (disclosing transmission of data to a base station using a HARQ process).

82. Upon information and belief, Defendants have and continue to directly infringe at least claims 1, 2, 8, 11, 12, and 18 of the '247 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, 2, 8, 11, 12, and 18 of the '247 Patent (the "LG Accused '247 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1, 2, 8, 11, 12, and 18 by practicing claims 1, 2, 8, 11, 12, and 18

through the LG Accused '247 Instrumentalities, and by causing the LG Accused '247 Instrumentalities to practice the patented inventions.

83. LG Accused '247 Instrumentalities include, for example, the LG V60 ThinQ 5G and other 5G-compatible products that transmit data using a hybrid automatic repeat request (H-ARQ) in compliance with 3GPP TS 38.212 and TS 38.321. On information and belief, each of the LG Accused '247 Instrumentalities incorporates at least one processor configured to comply with one or more of 5G cellular communication protocols.

84. Defendants were made aware of the '247 Patent family and their infringement thereof at least as early as April 22, 2015, when a family member was identified in exemplary claim charts sent to LGE by Signal Trust. Pantech Corp., on behalf of itself and Pantech Wireless, followed up with additional correspondence identifying the '247 Patent and LGE's infringement thereof again on July 12, 2021.

85. Since at least July 12, 2021, when it was made aware of the '247 Patent by Pantech Corp. on behalf of Pantech Wireless, Defendants' infringement has been, and continues to be, willful.

86. Upon information and belief, the LG Accused '247 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

87. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1, 2, 8, 11, 12, and 18 of the '247 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '247 Instrumentalities constitute direct infringement

of at least claims 1, 2, 8, 11, 12, and 18 of the '247 Patent. For example, LG advertises and has advertised the use of its devices for 5G communications. See <https://www.lg.com/us/cell-phones/lg-lmv600amaattcb-att-v60-thinq-5g>.

88. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the LG Accused '247 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '247 Instrumentalities.

89. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the LG Accused '247 Instrumentalities necessarily infringes the '247 Patent because the inventions of the '247 Patent are required to comply with the 5G cellular standard (3GPP TS 38.212 and TS 38.321). Defendants advertise the LG Accused '247 Instrumentalities as compliant with 5G, which induces others to infringe the '247 Patent. Defendants have knowingly induced infringement since at least as early as July 12, 2021.

90. Upon information and belief, Defendants are liable as contributory infringers of the '247 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '247 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '247 Patent. Each of the LG Accused '247 Instrumentalities is a material component for use in practicing the '247 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the LG Accused '247 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

91. Pantech Wireless has been harmed by Defendants' infringing activities.

COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 9,313,809

92. The allegations set forth in the foregoing paragraphs 1 through 91 are incorporated into this claim for relief.

93. On April 12, 2016, the '809 Patent, entitled "Method and apparatus for terminating transmission of a message in an enhanced random access channel" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 14/319,608, filed on June 30, 2014. The '809 Patent claims priority to U.S. Patent Application No. 12/238,910, filed on September 26, 2008, U.S. Provisional Patent Application No. 60/975,985, filed on September 28, 2007, U.S. Provisional Patent Application No. 60/982,528, filed on October 25, 2007, U.S. Provisional Patent Application No. 61/018,999, filed on January 4, 2008, U.S. Provisional Patent Application No. 61/025,441, filed on February 1, 2008, U.S. Provisional Patent Application No. 61/038,576, filed on March 21, 2008, U.S. Provisional Patent Application No. 61/074,288, filed on June 20, 2008, and U.S. Provisional Patent Application No. 61/083,409, filed on July 24, 2008. A true and correct copy of the '809 Patent is attached as Exhibit 4.

94. Pantech Wireless is the assignee and owner of all right, title and interest in and to the '809 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for their infringement.

95. The '809 Patent discloses at least apparatuses and methods for communicating with a base station using an enhanced dedicated channel (E-DCH) resource while in a cell forward access channel (CELL_FACH) state. If a E-DCH buffer is empty, then the WTRU transmits scheduling information (SI) including a total E-DCH buffer status (TEBS) equal to zero to the bases station. The WTRU also determines if a hybrid automatic repeat request (HARQ) buffer is empty and releases the E-DCH resource when the transmission of the SI with the TEBS equal to zero and the HARQ buffer is empty. For example, claims 1-10 of the '809 Patent recite elements

required for compliance with at least WDCMA standards, including at least 3GPP TS 25.211, TS 25.214, and TS 25.321. *See* 3GPP TS 25.211 v 9.2.0 at 38 (§ 5.3.3.7) (showing the relationship between E-DCH and AICH); TS 25.214 v 9.8.0 at 41-42 (§ 6.1A) (Physical random access procedure for Enhanced Uplink in CELL_FACH state); and TS 25.321 v 9.9.0 at 10, 16, 94, 104, 108, 109-110, 153-154, 156, (§§ 3.1.2.1, 4.2.3, 9.2.5.3.2, 11.2.2A, 11.8.1) (the UE is configured to release the common E-DCH resource when the empty buffer status (TEBS=0) has been reported, and no MAC PDU is left in a HARQ process for transmission or retransmission).

96. Upon information and belief, Defendants have and continue to directly infringe at least claims 1-10 of the '809 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 '809 Patent (the "LG Accused '809 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1-10 by practicing claims 1-10 through the LG Accused '809 Instrumentalities, and by causing the LG Accused '809 Instrumentalities to practice the patented inventions.

97. LG Accused '809 Instrumentalities include, for example, the LG G7 ThinQ and other WDCMA-compatible devices that support the request and receipt of enhanced uplink resources from a wireless network in compliance with 3GPP TS 25.211, TS 25.214, and TS 25.321.

98. Defendants were made aware of the '809 Patent family and their infringement thereof at least as early as April 22, 2015, when a family member was identified in exemplary claim charts sent to LGE by Signal Trust. Signal Trust followed up with additional correspondence specifically identifying the '809 Patent and LGE's infringement thereof again on April 29, 2016.

99. Since at least as early as April 29, 2016, Defendants' infringement has been, and continues to be willful.

100. Upon information and belief, the LG Accused '809 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

101. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1-10 of the '809 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '809 Instrumentalities constitutes direct infringement of at least claims 1-10 of the '809 Patent. For example, Defendants advertise and have advertised the use of the LG Accused '809 Instrumentalities for WDCMA communications. *See* <https://www.lg.com/us/cell-phones/lg-LMG710TM-g7-thinq-tmobile>.

102. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the LG Accused '809 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '809 Instrumentalities.

103. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the LG Accused '809 Instrumentalities necessarily infringes the '809 Patent because the inventions of the '809 Patent are required to comply with the WDCMA cellular standards (3GPP TS 25.211, TS 25.214, and TS 25.321). Defendants advertise the LG Accused '809 Instrumentalities as compliant with WDCMA, which induces others to infringe the '809 Patent. Defendants have knowingly induced infringement since at least April 30, 2016, when Defendants were first made aware of the '809 Patent, as discussed above.

104. Upon information and belief, Defendants are liable as contributory infringers of the '809 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '809 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '809 Patent. Each of the LG Accused '809 Instrumentalities is a material component for use in practicing the '809 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the LG Accused '809 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

105. Pantech Corp. has been harmed by Defendants' infringing activities.

COUNT V – INFRINGEMENT OF U.S. PATENT NO. 9,065,486

106. The allegations set forth in the foregoing paragraphs 1 through 105 are incorporated into this claim for relief.

107. On June 23, 2015, the '486 Patent, entitled "Detection, avoidance and/or correction of problematic puncturing patterns in parity bit streams used when implementing turbo codes" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 14/300,734, filed on June 10, 2014. The '486 Patent claims priority to U.S. Patent Application No. 13/744,984, filed on January 18, 2013, U.S. Patent Application No. 13/309,962, filed on December 2, 2011, U.S. Patent Application No. 11/974,381, filed on October 12, 2007, U.S. Patent Application No. 10/725,779, filed on December 2, 2003, U.S. Provisional Patent Application No. 60/434,232, filed on December 16, 2002, U.S. Provisional Patent Application No. 60/444,068, filed on January 30, 2003, U.S. Provisional Patent Application No. 60/470,921, filed on May 15, 2003, and U.S. Provisional Patent Application No. 60/494,404, filed on August 11, 2003. A true and correct copy of the '486 Patent is attached as Exhibit 5.

108. Pantech Wireless is the assignee and owner of all right, title and interest in and to the '486 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for their infringement.

109. The '486 Patent discloses at least apparatuses and methods for detecting and correcting performance degradation in punctured Turbo codes using a Turbo encoder. A puncturing pattern which approximates a particular code is identified, and a value for anticipated degradation is adjusted in accordance with a matching of the puncturing pattern and the particular code rate. For example, claims 3-4 of the '486 Patent recite elements of detecting and correcting problematic puncturing patterns in parity bit streams when implementing punctured Turbo codes as mandated by the LTE standard, including at least 3GPP TS 36.212. *See* 3GPP TS 36.212 v 10.0.0 at 15 (§ 5.1.4.1) (showing the rate matching for turbo coded transport channels).

110. Upon information and belief, Defendants have and continue to directly infringe at least claims 3-4 of the '486 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 3-4 of the '486 Patent (the "LG Accused '486 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 3-4 by practicing claims 3-4 through the LG Accused '486 Instrumentalities, and by causing the LG Accused '486 Instrumentalities to practice the patented inventions.

111. LG Accused '486 Instrumentalities include, for example, the LG G7 ThinQ and other LTE-compatible devices.

112. Defendants were made aware of the '486 Patent and their infringement thereof at least as early as February 15, 2017, when the '486 Patent was identified in exemplary claim charts sent to LGE by Signal Trust.

113. Since at least as early as February 15, 2017, Defendants' infringement has been, and continues to be willful.

114. Upon information and belief, the LG Accused '486 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

115. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 3-4 of the '486 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '486 Instrumentalities constitutes direct infringement of at least claims 3-4 of the '486 Patent. For example, Defendants advertise and have advertised the use of the LG Accused '486 Instrumentalities for LTE communications. See <https://www.lg.com/us/cell-phones/lg-LMG710TM-g7-thinq-tmobile>.

116. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the LG Accused '486 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '486 Instrumentalities.

117. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the LG Accused '486 Instrumentalities necessarily infringes the '486 Patent because the inventions of the '486 Patent are required to comply with the LTE cellular standards (3GPP TS 36.212). Defendants advertise the LG Accused '486 Instrumentalities as compliant with LTE, which induces others to infringe the '486 Patent. Defendants have knowingly induced infringement

since at least September 7, 2017, when Defendants were first made aware of the '486 Patent, as discussed above.

118. Upon information and belief, Defendants are liable as contributory infringers of the '486 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '486 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '486 Patent. Each of the LG Accused '486 Instrumentalities is a material component for use in practicing the '486 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the LG Accused '486 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

119. Pantech Corp. has been harmed by Defendants' infringing activities.

COUNT VI – INFRINGEMENT OF U.S. PATENT NO. 7,283,839

120. The allegations set forth in the foregoing paragraphs 1 through 119 are incorporated into this claim for relief.

121. On October 16, 2007, the '839 Patent, entitled "Wireless communicating terminal for providing integrated messaging service and method thereof" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 11/106,160, filed on April 13, 2005. The '839 Patent claims priority to KR 10-2004-0025882, filed on April 14, 2004, and KR 10-2004-0083073, filed on October 18, 2004. A true and correct copy of the '839 Patent is attached as Exhibit 6.

122. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '839 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

123. The '839 Patent discloses a wireless communication terminal having a function providing and integrated messaging service.

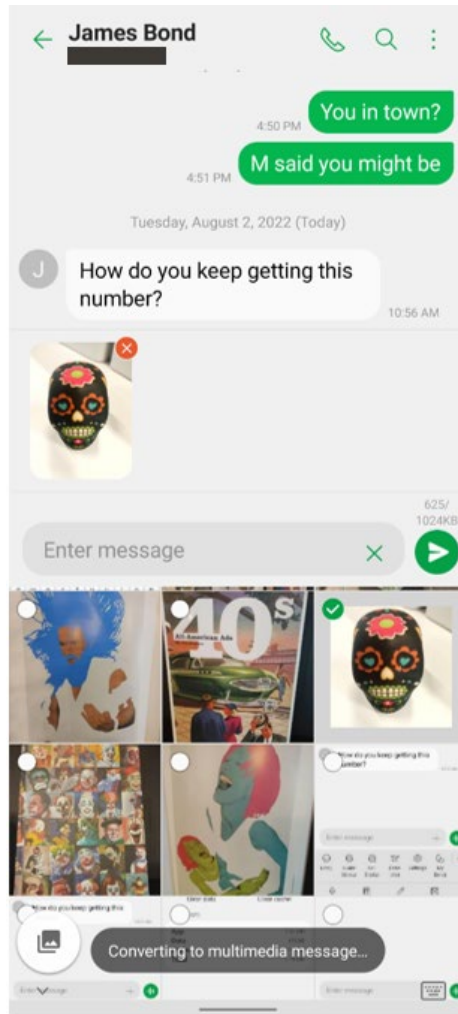
124. At the time of the '839 Patent (which claims priority to April 14, 2004), conventional message services provided different interfaces for text messages and multimedia messages. In some instances, a user would need to access separate applications for text and multimedia applications. Further, conventional wireless communication terminals managed incoming and outgoing messages using an in-box and an out-box, analogizing the messages to a traditional letter. This approach provides a late response in comparison to an Internet messenger. *See* '839 Patent at 1:32-50.

125. The '839 Patent solved this problem by providing an integrated messaging service. In one example, the integrated messaging service receives message content and a menu selecting signal in the integrated user interface. The integrated user interface also displays the message content and description data. The wireless communication terminal determines the kind of message to be transmitted which is inputted into the integrated user interface, generates an outgoing message which includes identification data corresponding to the message kind, and transmitting the outgoing message. The integrated user interface displays the outgoing message content and the description data. The wireless communication terminal also determines a message kind of a received message, divides the message into message content and description data, and displays the message content and the description data in the integrated user interface. *See* '839 Patent at 4:6-5:19, 5:20-62, FIG. 2, FIG. 3. By integrating the user interface of text messages and multimedia messages, the technique provides a single application or service thereby increasing usability and simplicity for the user. *See id.* at 1:32-44. As an additional benefit, the integrated user interface increases speed by avoiding delays due to analogizing messages to letters. *Id.* at 1:45-50.

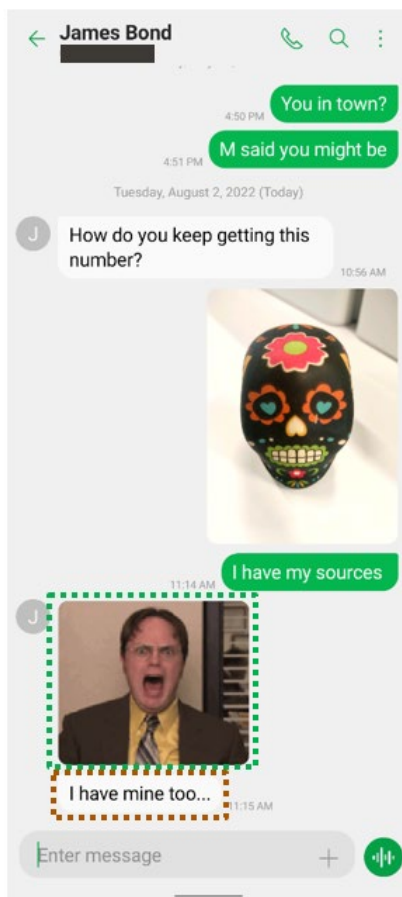
126. Upon information and belief, Defendants have and continue to directly infringe at least claims 1-5 of the '839 Patent by making, using, selling, importing, offering to sell within the United States, importing into the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claims 1-5 of the '839 Patent (the "LG Accused '839 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1-5 by practicing claims 1-5 through the LG Accused '839 Instrumentalities, and by causing the LG Accused '839 Instrumentalities to practice the patented inventions.

127. LG Accused '839 Instrumentalities include, for example, the LG V60 ThinQ 5G and other products that incorporate at least one processor, touchscreen, and include software functionality such as described below.

128. For example, the LG V60 ThinQ 5G is a wireless communication terminal having a function of providing an integrated messaging service. As one example, the LG V60 ThinQ 5G includes an integrated user interface for sending and receiving both text messages and multimedia messages. The LG V60 ThinQ 5G determines the type of message to be transmitted, generates an outgoing message, transmits the outgoing message, and displays the message content and the description data in the integrated user interface. The LG V60 ThinQ 5G also determines a type of received message, divides the message into message content and description data, and displays the message content and the description data in the integrated user interface.



LG V60 ThinQ 5G Screenshot showing outgoing message



Annotated LG V60 ThinQ 5G Screenshot showing received message

129. Defendants were made aware of the '839 Patent and their infringement thereof at least as early as September 22, 2020, when the '839 Patent was identified in correspondence sent to Defendants by Pantech Corp.

130. Since at least as early as September 22, 2020, when Defendants were made aware of the '839 Patent, Defendants' infringement has been, and continues to be willful.

131. Upon information and belief, the LG Accused '839 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

132. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1-5 of the '839 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '839 Instrumentalities constitute direct infringement of at least claims 1-5 of the '839 Patent. For example, Defendants' user manual for the LG V60 ThinQ 5G shows users how to "Specify a recipient and crates a message," "attach files, and "send the message."

133. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the LG Accused '839 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '839 Instrumentalities.

134. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the preinstalled Messages application of the LG Accused '839 Instrumentalities infringes the '839 Patent. Defendants have knowingly induced infringement since at least September 22, 2020, when Defendants were first made aware of the '839 Patent.

135. Upon information and belief, Defendants are liable as contributory infringers of the '839 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '839 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '839 Patent. Each of the LG Accused '839 Instrumentalities is a material component for use in practicing the '839 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. For example, the software associated with implementing the LG Accused '839 Instrumentalities is not suitable for substantial non-infringing use.

136. Pantech Corp. has been harmed by Defendants' infringing activities.

COUNT VII – INFRINGEMENT OF U.S. PATENT NO. 9,575,631

137. The allegations set forth in the foregoing paragraphs 1 through 136 are incorporated into this claim for relief.

138. On February 21, 2017, the '631 Patent, entitled “Method for selecting and controlling second work process during first work process in multitasking mobile terminal” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 15/010,629, filed on January 29, 2016. The '631 Patent claims priority to U.S. Patent Application No. 14/840,844, filed on August 31, 2015, U.S. Patent Application No. 11/495,863, filed on July 28, 2006, KR 10-2005-0073877, filed on August 11, 2005, and KR 10-2005-0102198, filed on October 28, 2005. A true and correct copy of the '631 Patent is attached as Exhibit 7.

139. Pantech Corp. is the assignee and owner of all right, title and interest in and to the '631 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

140. The '631 Patent discloses a method for controlling a predetermined function of a second work process during a first work process in a multitasking mobile terminal that performs the first work process and the second work process.

141. At the time of the '631 Patent (which claims priority to August 11, 2005), conventional methods for multitasking in a mobile terminal meant that when a user wanted to change from one process to another, the previous process would be terminated. '631 Patent at 1:61-64; FIG. 2. As one example, a user had to terminate a text message creation process in order to control music or audio playback. *Id.* at 2:40-44. Upon returning to the text message creation, the user would be faced with the inconvenience of recreating any progress previously discarded or forced to seek out the incomplete message stored in a temporary mailbox. *Id.* at 2:44-51.

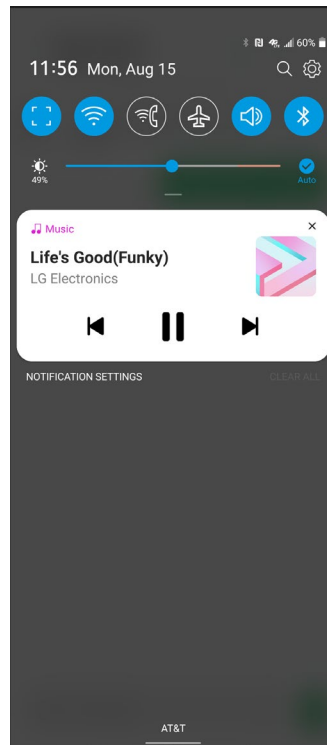
142. The '631 Patent solved this problem by providing a technique for controlling a predetermined function of a second work process in a multitasking mobile terminal that performs the first work process and the second work process. In one example, an icon is displayed which corresponds to a first work process. If the icon is selected, then a screen for the first work process is displayed. '631 Patent at 5:40-45. Multiple icons, including an icon corresponding to a second work process, are displayed when a command is received to sequentially display icons. The icon corresponding to the second work process can be selected and a corresponding screen is displayed. From this screen, a control menu can be activated for controlling the first work process and commands can be input for controlling the first work process. *Id.* at 5:50-58.

143. Upon information and belief, Defendants have and continue to directly infringe at least claims 1-4, 8, and 9 of the '631 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 1-4, 8, and 9 of the '631 Patent (the "LG Accused '631 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1-4, 8, and 9 by practicing claims 1-4, 8, and 9 through the LG Accused '631 Instrumentalities, and by causing the LG Accused '631 Instrumentalities to practice the patented inventions.

144. The LG Accused '631 Instrumentalities include, for example, the LG V60 ThinQ 5G and other products that incorporate at least one processor, touchscreen, and include software functionality such as described below.

145. For example, the LG V60 ThinQ 5G performs a method for controlling a predetermined function of a second work process in a multitasking mobile terminal that performs the first work process and the second work process. As one example, the LG V60 ThinQ 5G

displays an icon corresponding to an audio player, which can be used to play music. The LG V60 ThinQ 5G also displays an icon for the Messages application. The LG V60 ThinQ 5G can concurrently display the Messages work process while playing music. In response to a swipe down, a control menu is displayed which allows for control of the audio player.



LG V60 ThinQ 5G Screenshot showing control menu

146. Defendants were made aware of the '631 Patent and their infringement thereof at least as early as January 27, 2021, when the '631 Patent was identified in correspondence sent to Defendants by Pantech Corp.

147. Since at least January 27, 2021, when Defendants were made aware of the '631 Patent, Defendants' infringement has been, and continues to be willful.

148. Upon information and belief, the LG Accused '631 Instrumentalities are used, marketed, provided to, and/or used by or for Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

149. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1-4, 8, and 9 of the '631 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 Defendants' partners, clients, customers/subscribers, and end users, whose use of the LG Accused '631 Instrumentalities constitute direct infringement of at least claims 1-4, 8, and 9 of the '631 Patent. For example, Defendants' user manual for the LG V60 ThinQ 5G instructs users to "open multiple apps on the screen and easily switch between them at any time."

150. In particular, Defendants' actions that aid and abet others such as their partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the LG Accused '631 Instrumentalities, and providing instruction materials, training and services regarding the LG Accused '631 Instrumentalities.

151. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using multitasking functions for music control of the LG Accused '631 Instrumentalities infringes the '631 Patent. Defendants have knowingly induced infringement since least January 27, 2021, when Defendants were first made aware of the '631 Patent.

152. Upon information and belief, Defendants are liable as contributory infringers of the '631 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the LG Accused '631 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '631 Patent. Each of the LG Accused '631 Instrumentalities is a material component for use in practicing the '631 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. For example,

the software associated with implementing the LG Accused '631 Instrumentalities is not suitable for substantial non-infringing use.

153. Pantech Corp. has been harmed by Defendants' infringing activities.

DAMAGES

As a result of Defendants' acts of infringement, 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.

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 demands judgment for itself and against Defendants as follows:

- A. An adjudication that Defendants have infringed U.S. Patent Nos. 9,136,924; 9,854,545; 10,869,247; 9,313,809; 9,065,486; 7,283,839; and 9,575,631;
- B. An award of damages to be paid by Defendants adequate to compensate Plaintiffs for Defendants' 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;
- C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Plaintiffs' reasonable attorneys' fees; and
- D. An award to Plaintiffs of such further relief at law or in equity as the Court deems just and proper.

<p>Dated: September 2, 2022</p> <p><i>Of counsel:</i> James A. Fussell, III Jamie B. Beaber Saqib J. Siddiqui Tiffany A. Miller Baldine Paul* Clark S. Bakewell Seth W. Bruneel* MAYER BROWN LLP 1999 K Street, N.W. Washington D.C. 20006 (202) 263-3000 jbeaber@mayerbrown.com jfussell@mayerbrown.com ssiddiqui@mayerbrown.com tmiller@mayerbrown.com bpaul@mayerbrown.com cbakewell@mayerbrown.com sbruneel@mayerbrown.com</p> <p>Graham M. Buccigross* MAYER BROWN LLP Two Palo Alto Square, Suite 300 3000 El Camino Real Palo Alto, CA 94306 (650) 331-2000 gbuccigross@mayerbrown.com</p> <p>Gregory J. Apgar* MAYER BROWN LLP 1221 Avenue of the Americas New York, NY 10020 (212) 506-2500 gapgar@mayerbrown.com</p> <p>Luiz Miranda* MAYER BROWN LLP 71 S. Wacker Drive Chicago, IL 60606 (312) 782-0600 lmiranda@mayerbrown.com</p> <p>(* <i>pro hac vice</i> application to be filed)</p>	<p>Respectfully submitted,</p> <p><u>/s/ Geoffrey Culbertson</u> Geoffrey Culbertson Kelly Tidwell PATTON TIDWELL & CULBERTSON, LLP 2800 Texas Blvd. (75503) Post Office Box 5398 Texarkana, TX 75505-5398 (P) (903) 792-7080 (F) (903) 792-8233 gpc@texarkanalaw.com kbt@texarkanalaw.com</p> <p><i>Counsel for Plaintiffs Pantech Corporation and Pantech Wireless, LLC</i></p>
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