

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

PANTECH CORPORATION,

Plaintiff,

v.

COOLPAD TECHNOLOGIES INC.,  
YULONG COMPUTER  
TELECOMMUNICATION SCIENTIFIC  
(SHENZHEN) CO., LTD.,

Defendants.

Case No. 5:21-cv-00065-RWS

**JURY TRIAL DEMANDED**

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Pantech Corporation, for its First Amended Complaint against Defendants Coolpad Technologies Inc. and Yulong Computer Telecommunication Scientific (Shenzhen) Co. Ltd. (collectively, “Defendants”), alleges 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 Corporation (“Plaintiff” or “Pantech”) is an entity organized under the laws of South Korea, with a place of business at 8, Yangjaecheon-ro 21gil, Suite 402, Seoul, 06748, Republic of Korea.

3. Defendant Coolpad Technologies Inc. (“Coolpad Tech”) is a corporation organized and existing under the laws of Delaware.

4. Defendant Coolpad Tech maintains its headquarters in Frisco, Texas, and has a regular and established place of business at 6175 Main Street, Suite 290, Frisco, Texas 75034.

5. Defendant Coolpad Tech maintains a registered agent for service of process in Texas: Paracorp Incorporated, located at 3610-2 N. Josey Lane, Suite 223, Carrollton, TX 75007.

6. Defendant Yulong Computer Telecommunication Scientific (Shenzhen) Co. Ltd. is a corporation duly organized and existing under the laws of the People's Republic of China, with a place of business located at Building B, Boton Science Park Chaguang Road, Xili Town, Nanshan District, Shenzhen China.

7. On information and belief, Defendant Coolpad Tech is a wholly-owned subsidiary of Yulong Infotech, Inc. (BVI), which in turn is a wholly owned subsidiary of Coolpad Group Limited.

8. On information and belief, Defendant Yulong Computer Telecommunication Scientific (Shenzhen) Co. Ltd. is a subsidiary of Digital Tech Inc. (BVI) and Yulong Infotech, Inc., which in turn are wholly owned subsidiaries of Coolpad Group Limited.

9. The Defendants identified above, together, are in the business of manufacturing wireless devices and selling wireless devices in the United States under the brand name "Coolpad."

10. The Defendants above are part of the same corporate structure and distribution chain for making, importing, offering to sell, selling, and using of the accused devices in the United States, including in this district.

11. The Defendants share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms for at least the products related to LTE technologies. The Defendants also operate as a unitary business venture.

12. For the reasons set forth above, Defendants are jointly and severally liable for the acts of patent infringement alleged herein.

**JURISDICTION AND VENUE**

13. 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.

14. 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 Texas; (ii) Defendants have committed and continue to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing a least a portion of any other infringements alleged herein; and (iii) Coolpad Tech is registered to do business in Texas. In addition, or in the alternative, this Court has personal jurisdiction over Defendants pursuant to Fed. R. Civ. P. 4(k)(2).

15. Venue is proper in this district as to Defendant Yulong Computer Telecommunication Scientific (Shenzhen) Co. Ltd., which is organized under the laws of the People's Republic 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."

16. Venue is proper in this district as to Defendant Coolpad Tech pursuant to 28 U.S.C. § 1400(b). Coolpad Tech has a regular and established place of business in this district located at 6175 Main Street, Suite 290, Frisco, Texas 75034. Furthermore, Coolpad Tech has committed and

continues to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling accused products in this district, and/or importing accused products into this district, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing at least a portion of any other infringements alleged herein in this district.

### **ACCUSED INSTRUMENTALITIES**

17. Defendants make, use, sell and offer for sale, provide, and cause to be used, now and within the past six years, smartphones (*e.g.*, Legacy Series, Snap Series, Rogue Series, REVVL PLUS), hotspots (*e.g.*, Surf Series), and certain other LTE-capable devices (the “Accused Instrumentalities”).

18. For example, Defendants advertise that the Legacy Series, Snap Series, Rogue Series, REVVL PLUS, and Surf Series products, such as the Legacy Brisa, Legacy SR, Legacy (Boost Mobile), Legacy, Legacy S, Legacy Go, Snap (Sprint/Boost), Snap (T-Mobile), T-Mobile REVVL PLUS, Rogue, Surf (Sprint/Boost), Surf (T-Mobile), are compliant with LTE cellular network standards.

### **PATENTS-IN-SUIT**

19. U.S. Patent No. 8,538,411 (the “’411 Patent”) is entitled “Apparatus and Method for Transmitting/Receiving Activation Indicator Regarding Component Carrier in Wireless Communication System.” On May 7, 2020, Pantech obtained full and complete ownership, title and interest in the ’411 Patent.<sup>1</sup>

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<sup>1</sup> The named inventors of the ’411 Patent are Ki Bum Kwon, Myung Cheul Jung and Sung Jin Seo. The application was filed October 29, 2010, published on May 5, 2011, and the ’411 Patent issued on September 17, 2013. On October 29, 2010, the named inventors assigned their interest to Pantech Co., Ltd. On July 6, 2016, Pantech Co., Ltd. transferred the patent to Pantech Inc. On October 31, 2016, Pantech Inc. transferred the patent to Goldpeak Innovations Inc. (“Goldpeak”). On May 7, 2020, Goldpeak transferred to Pantech Corporation.

20. U.S. Patent No. 10,841,142 (the “’142 Patent”) is entitled “Method and Apparatus for Transmitting and Receiving Reference Signal in Wireless Communication System.” On May 7, 2020, Pantech obtained full and complete ownership, title and interest in the ’142 Patent.<sup>2</sup>

21. U.S. Patent No. 9,237,566 (the “’566 Patent”) is entitled “Method of Transmitting and Receiving Ack/Nack Signal and Apparatus Thereof.” On May 7, 2020, Pantech obtained full and complete ownership, title and interest in the ’566 Patent.<sup>3</sup>

22. U.S. Patent No. 8,649,346 (the “’346 Patent”) is entitled “Method and Apparatus for Transmitting and Receiving Signals in Wireless Communication System.” On May 7, 2020, Pantech obtained full and complete ownership, title and interest in the ’346 Patent.<sup>4</sup>

23. U.S. Patent No. 11,012,954 (the “’954 Patent”) is entitled “Apparatus and Method for Establishing Uplink Synchronization in a Wireless Communication System.” On May 7, 2020, Pantech obtained full and complete ownership, title and interest in the ’954 Patent.<sup>5</sup>

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<sup>2</sup> The named inventor of the ’142 Patent is Sung Jun Yoon. The application was filed February 11, 2019 and the ’142 Patent issued on November 17, 2020. The inventor assigned the parent application, U.S. Patent App. No. 13/891,522 and any continuations thereto, including the application underlying the ’142 Patent, to Pantech Co., Ltd. on May 10, 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. On May 7, 2020, Goldpeak transferred the interest to Pantech Corporation.

<sup>3</sup> The named inventor of the ’566 Patent is Dong Hyun Park. The application was filed on April 4, 2013, published August 1, 2013, and the ’566 Patent issued on January 12, 2016. On January 4, 2013, the named inventor assigned interest to Pantech Co., Ltd. On July 6, 2016, Pantech Co. Ltd. transferred the ’566 Patent to Pantech Inc. On October 31, 2016, Pantech Inc. transferred to Goldpeak Innovations Inc., and on May 7, 2020, Goldpeak transferred the ’566 Patent to Pantech Corporation.

<sup>4</sup> The named inventor of the ’346 Patent is Dong Hyun Park. The U.S. patent application was filed on December 20, 2011, published June 21, 2012, and the ’346 Patent issued on February 11, 2014. On December 13, 2011, the named inventor assigned interest to Pantech Co., Ltd. On July 6, 2016, Pantech Co. Ltd. transferred the ’346 Patent to Pantech Inc. On October 31, 2016, Pantech Inc. transferred to Goldpeak Innovations Inc., and on May 7, 2020, Goldpeak transferred the ’346 Patent to Pantech Corporation.

<sup>5</sup> The named inventors of the ’954 Patent are Kibum Kwon and Myungcheul Jung. The patent application was filed on January 2, 2020, published on May 7, 2020, and the ’954 Patent issued on May 18, 2021. The inventors assigned the parent application, U.S. Patent App. No. 13/578,531 and any continuations thereto, including the application underlying the ’954 Patent, to Pantech Co. Ltd. on August 10, 2012. On July 6, 2016, Pantech Co., Ltd. transferred the interest to Pantech Inc. On October 31, 2016, Pantech Inc. transferred to Goldpeak Innovations Inc., and on May 7, 2020, Goldpeak transferred the interest to Pantech Corporation.

24. 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 obtained full and complete ownership, title and interest in the ’824 Patent.<sup>6</sup>

25. U.S. Patent No. 6,809,641, (the “’641 Patent”) is entitled “Method for Disabling Alarm Temporarily in Mobile Communication Terminal.” On May 7, 2020, Pantech obtained full and complete ownership, title and interest in the ’641 Patent.<sup>7</sup>

26. U.S. Patent No. 9,152,479 (the “’479 Patent”) is entitled “Apparatus and Method for Processing Event Notification.” On May 6, 2020, Pantech Corp. obtained full and complete ownership, title and interest in the ’479 Patent.<sup>8</sup>

27. Pantech is the rightful owner of the Asserted Patents and holds the entire right, title and interest in the Asserted Patents, including the right to collect for past damages.

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<sup>6</sup> 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 August 6, 2013, published December 5, 2013, and the ’824 Patent issued on March 15, 2016. In March 2009, the inventors assigned a parent application, U.S. Patent App. No. 12/347,352 and any continuations thereto, to LG Electronics Inc. On February 15, 2012, LG Electronics, Inc. transferred interest in a parent patent, U.S. Patent No. 8,102,804, and a parent application, U.S. Patent App. No. 13/340,447, to Pantech Co., Ltd. On July 6, 2016, Pantech Co. Ltd. transferred interest in the ’824 Patent to Pantech Inc. On October 31, 2016, Pantech Inc. transferred the interest to Goldpeak Innovations Inc. On May 7, 2020, Goldpeak Innovations Inc. transferred the interest to Pantech Corp.

<sup>7</sup> The named inventors of the ’641 Patent are Cham-A Choi and Hee-Jung Lee. The patent application was filed on July 11, 2002, published on February 6, 2003, and the ’641 Patent issued on October 26, 2004. On September 30, 2002, the inventors assigned their interests to SK Teletech Co., Ltd. On August 26, 2005, SK Teletech Co., Ltd. changed its name to Sky Teletech Co., Ltd. On December 2, 2005, Sky Teletech Co., Ltd. merged with and assigned its interest to Pantech Co., Ltd. On October 22, 2015, Pantech Co., Ltd. transferred the ’641 Patent to Pantech Inc. On October 31, 2016, Pantech Inc. transferred the patent to Goldpeak Innovations Inc., and on May 7, 2020, Goldpeak transferred the ’641 Patent to Pantech Corporation.

<sup>8</sup> The named inventor of the ’479 Patent is Hea-Beck Yang. The U.S. patent application was filed on December 19, 2013, published June 26, 2014, and the ’479 Patent issued on October 6, 2015. On December 11, 2013, the inventor assigned the ’479 Patent application, U.S. Patent App. No. 14/134,548, 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 ’479 Patent to Pantech Corp.

## **BACKGROUND**

28. Pantech Co., Ltd., the predecessor in interest to what is now Pantech Corporation<sup>9</sup>, was originally founded in 1991 in Seoul, South Korea as a competitor in the wireless phone marketplace.

29. 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.

30. Pantech's products are 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.

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

32. 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.

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<sup>9</sup> 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 Corporation as part of an asset sale in 2020 (these three entities are hereinafter referred to collectively as "Pantech").

33. 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.

34. 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.

35. Pantech is the owner by assignment of a portfolio of patents, including the Asserted Patents described in Paragraphs 19-26 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.

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

37. 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.



38. 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>.

39. Defendants are required to have a license to one or more essential patents owned by Pantech, including the Asserted Patents<sup>10</sup> that are identified as essential.

40. The prior owner of the Asserted Patents, Gold Peak Innovations, Inc., sent a letter to Chris Saunders, Senior Vice President of Coolpad Tech on March 22, 2018 asserting, *inter alia*, that Coolpad products such as the Defiant, Splatter, Canvas, and Conjr infringed Gold Peak’s patent portfolio, which included the Asserted Patents, and offering a license to the same.

41. Pantech first sent a letter to Liang Rui, CEO of Defendant Coolpad Group, and Steve Cistulli, CEO of Defendant Coolpad Tech, on September 1, 2020, offering to license patents currently owned and/or managed by Pantech that cover wireless communication technology, such as LTE, and features frequently used in mobile devices. The correspondence identified Defendants’ products, such as the Legacy, Legacy Go, Legacy S, Legacy SR, Snap, Surf, and Tracker, that were covered by claims of the offered patents, identified exemplary patents utilized by Coolpad and its customers and users, and attached a list of Pantech’s patents, including those

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<sup>10</sup> As used throughout this First Amended Complaint, “Asserted Patents” refers to the patents set forth and described in more detail in Paragraphs 19-26 herein.

covering Defendants' products. Pantech received no response from either Coolpad Group or Coolpad Tech.

42. Pantech then, through its counsel, sent separate letters to Mssrs. Rui and Cistulli on January 8, 2021, offering again to license patents currently owned and/or managed by Pantech, including those that are essential to cellular standards, including LTE and LTE-Advanced. The correspondence identified Defendants' products, such as Legacy Series, Snap Series, REVVL Series, Rogue Series, and Surf Series, that were covered by claims of the offered patents, identified exemplary patents utilized by Coolpad and its customers and users, and attached a list of Pantech's patents, including those covering Defendants' products. On April 7, 2021, Pantech, through its counsel, sent a follow-up letter to Mssrs. Rui and Cistulli. Pantech still received no response from either Coolpad Group or Coolpad Tech.

43. In accordance with ETSI's policy, Pantech provided Defendants with license offers on terms that are fair, reasonable and non-discriminatory ("FRAND"). 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).

44. Pantech has 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, Defendants have not engaged in good faith discussions or negotiations with Pantech.

Defendants did not respond to Pantech's offers to license any of the offered patents, including the Asserted Patents.

45. Defendants have been operating and continue to operate without a license to Pantech's standards-essential and other patents. The parties' licensing negotiations to-date have been unsuccessful because Defendants refuse to even discuss Pantech's fair, reasonable and non-discriminatory licensing terms. Given Defendants' unwillingness to license Pantech's standards-essential patents, or to cease infringement, Pantech has filed this lawsuit to protect its patent rights in the United States.

**COUNT I – INFRINGEMENT OF U.S. PATENT NO. 8,538,411**

46. The allegations set forth in the foregoing paragraphs 1 through 45 are incorporated into this claim for relief.

47. On September 17, 2013, U.S. Patent No. 8,538,411, "Apparatus and Method for Transmitting/Receiving Activation Indicator Regarding Component Carrier in Wireless Communication System," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 12/916,203, filed on October 29, 2010. The '411 Patent claims foreign priority to KR 10-2010-0088151, filed on September 8, 2010 and KR 10-2009-0104586, filed on October 30, 2009. A true and correct copy of the '411 Patent is attached as Exhibit 1.

48. Pantech is the assignee and owner of all right, title and interest in and to the '411 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

49. The '411 Patent discloses a method for controlling activation/deactivation of component carriers and/or serving cells by a user equipment (UE) in a wireless communication

system. For example, the UE is configured to detect and process control elements in messages received from a communication network, which indicate the presence of additional activation/deactivation information for corresponding component carriers and/or serving cells.

50. Compliance with 3GPP TS 36.300 Release 10 and higher, TS 36.331 Release 10 and higher, and TS 36.321 Release 10 and higher, as required by at least the LTE Advanced cellular standard, requires supporting activation/deactivation of component carriers and/or serving cells by a user equipment (UE) in a wireless communication system, and practicing at least claims 1-14 of the '411 Patent. Compliance with these technical specifications, and thus with at least the LTE Advanced cellular standard, requires the use of the inventions recited in at least claims 1-14 of the '411 Patent, including the functionality described in this paragraph.

51. Upon information and belief, Defendants have and continue to directly infringe at least claims 1-14 of the '411 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 1-14 of the '411 Patent (the "Coolpad Accused '411 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1-14 by practicing claims 1-14 through the Coolpad Accused '411 Instrumentalities, and by causing the Coolpad Accused '411 Instrumentalities to practice the patented inventions.

52. Coolpad Accused '411 Instrumentalities include, for example, Legacy series phones (*e.g.*, Legacy, Legacy S, Legacy SR, Legacy Brisa, Legacy Boost Mobile, Legacy Go) and Snap series phones (*e.g.*, Snap Sprint/Boost/T-Mobile) and other LTE-compatible products that support LTE carrier integration. On information and belief, each of the Coolpad Accused '411 Instrumentalities incorporates at least one processor configured to comply with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols. Each of the Coolpad

Accused '411 Instrumentalities incorporates at least one processor configured to support LTE carrier aggregation, and thus complies with at least the following 3GPP technical specifications: TS 36.300, TS 36.331, and TS 36.321, Release 10 and higher.

53. Certain exemplary Coolpad Accused '411 Instrumentalities incorporate each a MediaTek Helio chipset, application processor, SoC, or system-on-chip (*e.g.*, MediaTek Helio A22). Information and documents from MediaTek's website indicate that each of the incorporated MediaTek Helio chipsets supports LTE carrier aggregation. On information and belief, each incorporated MediaTek Helio chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.300, 3GPP TS 36.331, and 3GPP TS 36.321.

54. Certain exemplary Coolpad Accused '411 Instrumentalities incorporate each a Qualcomm chipset, application processor, SoC, or system-on-chip (*e.g.*, Qualcomm Snapdragon 450, 665, or MSM8909). Information and documents from Qualcomm's website indicate that each of the incorporated Qualcomm Snapdragon chipsets supports LTE carrier aggregation. On information and belief, each incorporated Qualcomm Snapdragon chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.300, 3GPP TS 36.331, and 3GPP TS 36.321.

55. Defendants were made aware of the '411 Patent and their infringement thereof at least as early as the correspondence sent from Pantech on September 1, 2020, as discussed in Paragraph 41 above. Defendants were further made aware of the '411 Patent and their infringement thereof by further correspondence sent from Pantech's counsel on January 8, 2021, as discussed in Paragraph 42 above, and as of the date of filing of the Original Complaint on May 25, 2021.

56. Since at least as early as September 1, 2020, when they were made aware of the '411 Patent by Pantech, Defendants' infringement has been, and continues to be willful.

57. Upon information and belief, these Coolpad Accused '411 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.

58. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1-14 of the '411 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 Coolpad Accused '411 Instrumentalities constitute direct infringement of at least one claim of the '411 Patent.

59. In particular, Defendants' actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '411 Instrumentalities, and providing instruction materials, training and services regarding the Coolpad Accused '411 Instrumentalities.

60. Any party, including Defendant's partners, clients, customers/subscribers, and end users, using the Coolpad Accused '411 Instrumentalities necessarily infringes the '411 Patent because the inventions of the '411 Patent are required to comply with the relevant cellular standard. Defendants advertise their Coolpad Accused '411 Instrumentalities as compliant with the relevant cellular standards, which induces others to infringe the '411 Patent. Defendants have knowingly induced infringement since at least as early as September 1, 2020, when Defendants were made aware of the '411 Patent during correspondence with Plaintiff as discussed in Paragraph 41 above.

61. Upon information and belief, Defendants are liable as contributory infringers of the '411 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Coolpad Accused '411 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '411 Patent. Each of the Coolpad Accused '411 Instrumentalities is a material component for use in practicing the '411 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the Coolpad Accused '411 Instrumentalities is advertised to be compliant with the relevant standards and primarily used in compliance with such standards.

62. Pantech has been harmed by Defendants' infringing activities.

**COUNT II – INFRINGEMENT OF U.S. PATENT NO. 10,841,142**

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

64. On November 17, 2020 the '142 Patent, entitled "Method and Apparatus for Transmitting and Receiving Reference Signal in Wireless Communication System" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 16/272,473, filed on February 11, 2019. The '142 Patent claims foreign priority to KR 10-2012-0050406, filed on May 11, 2012. A true and correct copy of the '142 Patent is attached as Exhibit 2.

65. Pantech is the assignee and owner of all right, title and interest in and to the '142 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

66. The '142 Patent discloses at least a method and an apparatus for transmitting and receiving a reference signal in a wireless communication system. For example, the '142 Patent

discloses a method of using a reference signal by a User Equipment (UE) in a wireless communication system that includes a cyclic shift hopping initial value parameter and a virtual cell identifier parameter, and using the cyclic shift hopping initial value parameter and virtual cell identifier parameter to determine a base sequence of a reference signal sequence and a cyclic shift value of the reference signal sequence for the reference signal, and generating and transmitting a reference signal based on those values. Compliance with 3GPP TS 36.211 and TS 36.331, as required by at least the LTE cellular standard, requires the use of the inventions recited in at least claim 1 of the '142 Patent, including the functionality described in this paragraph.

67. Upon information and belief, Defendants have and continue to directly infringe at least claim 1 of the '142 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 '142 Patent (the "Coolpad Accused '142 Instrumentalities"). Defendants also have and continue to directly infringe at least claim 1 by practicing claim 1 through the Coolpad Accused '142 Instrumentalities, and by causing the Coolpad Accused '142 Instrumentalities to practice the patented inventions.

68. Coolpad Accused '142 Instrumentalities include, for example, Legacy Series, Snap Series, REVVL PLUS and Rogue Series phones and other LTE-compatible devices that support the use of reference signals in compliance with 3GPP TS 36.211 and TS 36.331. On information and belief, each of the Coolpad Accused '142 Instrumentalities incorporates at least one processor configured to comply with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols. Each of the Coolpad Accused '142 Instrumentalities incorporates at least one processor configured to operate as a LTE Category 6 (cat6, cat-6) or higher category



level. Each of the Coolpad Accused '142 Instrumentalities incorporates at least one processor configured to support LTE TDD duplex modes.

69. Certain exemplary Coolpad Accused '142 Instrumentalities incorporate a MediaTek Helio chipset, application processor, SoC, or system-on-chip (*e.g.*, MediaTek Helio A22). Information and documents from MediaTek's website indicate that each of the incorporated MediaTek Helio chipsets operates as a LTE Category 6 (cat6, cat-6) or higher category level, and/or supports LTE TDD duplex modes. On information and belief, each incorporated MediaTek Helio chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.211 and 3GPP TS 36.213.

70. Certain exemplary Coolpad Accused '142 Instrumentalities incorporate a Qualcomm chipset, application processor, SoC, or system-on-chip (*e.g.*, Qualcomm Snapdragon 665). On information and belief, each of the incorporated Qualcomm chipsets operates as a LTE Category 6 (cat6, cat-6) or higher category level, and/or supports LTE TDD duplex modes. On information and belief, each incorporated Qualcomm chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.211 and 3GPP TS 36.213.

71. Defendants were made aware of the '142 Patent and their infringement thereof at least as early as the correspondence sent from Pantech's counsel on January 8, 2021, as discussed in Paragraph 42 above. Defendants were further made aware of the '142 Patent and their infringement thereof by the date of filing of the Original Complaint on May 25, 2021.

72. Since at least as early as January 8, 2021, when they were made aware of the '142 Patent by Pantech's counsel, or the filing of the Original Complaint on May 25, 2021, Defendants infringement has been, and continues to be willful.

73. Upon information and belief, the Coolpad Accused '142 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.

74. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claim 1 of the '142 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 Coolpad Accused '142 Instrumentalities constitute direct infringement of at least one claim of the '142 Patent.

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

76. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the Coolpad Accused '142 Instrumentalities necessarily infringe the '142 Patent because the inventions of the '142 Patent are required to comply with the LTE cellular standard (3GPP TS 36.211 and 36.331). Defendants advertise its Coolpad Accused '142 Instrumentalities as compliant with LTE, which induces others to infringe the '142 Patent. Defendants have knowingly induced infringement since at least as early as January 8, 2021, when Defendants were

made aware of the '142 Patent during correspondence with Plaintiff as discussed in Paragraph 42 above, or as of the filing of the Original Complaint on May 25, 2021.

77. Upon information and belief, Defendants are liable as contributory infringers of the '142 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Coolpad Accused '142 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '142 Patent. Each of the Coolpad Accused '142 Instrumentalities is a material component for use in practicing the '142 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of these Accused Instrumentalities is advertised to be compliant with the relevant standard and primarily used in compliance with that standard.

78. Pantech has been harmed by Defendants' infringing activities.

**COUNT III – INFRINGEMENT OF U.S. PATENT NO. 9,237,566**

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

80. On January 12, 2016, the '566 Patent, entitled "Method of Transmitting and Receiving Ack/Nack Signal and Apparatus Thereof" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 13/877,827, filed on April 4, 2013. This application is a National Stage Entry of PCT/KR2011/007659, filed on October 14, 2011 and published on April 29, 2012 as WO2012/050389. The '566 Patent claims foreign priority to KR 10-2010-0100988, filed on October 15, 2010. A true and correct copy of the '566 Patent is attached as Exhibit 3.

81. Pantech is the assignee and owner of all right, title and interest in and to the '566 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for its infringement.

82. The '566 Patent discloses methods and apparatuses for transmitting an acknowledgement/not-acknowledgement (ACK/NACK) for a Hybrid Automatic Repeat reQuest (HARQ) by a user equipment in a carrier aggregation system. Based on channel selection, an ACK/NACK is mapped in response to the downlink data transmission onto a combination of one of two ACK/NACK resources and a modulation symbol, and the ACK/NACK is transmitted to the base station by using the combination. For example, claims 1 and 5 of the '566 Patent each recite elements of the HARQ and carrier aggregation functionality mandated by at least the LTE Advanced standard, including at least the following 3GPP technical specifications: TS 36.213 Release 10 and higher, TS 36.331 Release 10 and higher, and TS 36.211 Release 10 and higher. Compliance with these technical specifications, and thus with at least the LTE Advanced standard, requires the use of the inventions recited in at least claims 1 and 5 of the '566 Patent, including the functionality described in this paragraph.

83. Upon information and belief, Defendants have and continue to directly infringe at least claims 1 and 5 of the '566 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 5 of the '566 Patent (the "Coolpad Accused '566 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1 and 5 by practicing claims 1 and 5 through the Coolpad Accused '566 Instrumentalities, and by causing the Coolpad Accused '566 Instrumentalities to practice the patented inventions.

84. The Coolpad Accused '566 Instrumentalities include, without limitation, the Legacy series phones (*e.g.*, Legacy, Legacy S, Legacy SR, Legacy Brisa, Legacy Boost Mobile, Legacy Go) and Snap series products (*e.g.*, Snap Sprint/Boost/T-Mobile) and other LTE-compatible devices that support LTE carrier aggregation, and thus support at least 3GPP TS 36.213 Release 10 and higher, TS 36.331 Release 10 and higher, and TS 36.211 Release 10 and higher. On information and belief, each of the Coolpad Accused '566 Instrumentalities incorporates at least one processor configured to comply with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols. Each of the Coolpad Accused '566 Instrumentalities incorporates at least one processor configured to support LTE carrier aggregation.

85. Certain exemplary Coolpad Accused '566 Instrumentalities each incorporate a MediaTek Helio chipset, application processor, SoC, or system-on-chip (*e.g.*, MediaTek Helio A22). Information and documents from MediaTek's website indicate that each of the incorporated MediaTek Helio chipsets supports LTE carrier aggregation. On information and belief, each incorporated MediaTek Helio chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.213, 3GPP TS 36.331, and 3GPP TS 36.211.

86. Certain exemplary Coolpad Accused '566 Instrumentalities each incorporate a Qualcomm chipset, application processor, SoC, or system-on-chip (*e.g.*, Qualcomm Snapdragon 450, 665, or MSM8909). Information and documents from Qualcomm's website indicate that each of the incorporated Qualcomm Snapdragon chipsets supports LTE carrier aggregation. On information and belief, each incorporated Qualcomm Snapdragon chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later

cellular communication protocols including at least 3GPP TS 36.231, 3GPP TS 36.331, and 3GPP TS 36.211.

87. Defendants were made aware of the '566 Patent and their infringement thereof at least as early as the correspondence sent from Pantech on September 1, 2020, as discussed in Paragraph 41 above. Defendants were further made aware of the '566 Patent and their infringement thereof by further correspondence sent from Pantech's counsel on January 8, 2021, as discussed in Paragraph 42 above, and as of the date of filing of the Original Complaint on May 25, 2021.

88. Since at least as early as September 1, 2020, when they were made aware of the '566 Patent by Pantech, Defendants' infringement has been, and continues to be, willful.

89. Upon information and belief, these Coolpad Accused '566 Instrumentalities are used, marketed, provided to, and/or used by or for the Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

90. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1 and 5 of the '566 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 Coolpad Accused '566 Instrumentalities constitutes direct infringement of at least one claim of the '566 Patent.

91. In particular, the Defendants' actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '566 Instrumentalities and providing instruction materials, training, and services regarding the Coolpad Accused '566 Instrumentalities.

92. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the Coolpad Accused '566 Instrumentalities necessarily infringes the '566 Patent because the inventions of the '566 Patent are required to comply with the relevant cellular standard. Defendants advertise the Coolpad Accused '566 Instrumentalities as compliant with the relevant cellular standard, which induces others to infringe the '566 Patent. Defendants have knowingly induced infringement since at least as early as September 1, 2020, when Defendants were made aware of the '566 Patent during correspondence with Plaintiff as discussed in Paragraph 41 above

93. Upon information and belief, the Defendants are liable as contributory infringers of the '566 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Coolpad Accused '566 Instrumentalities that infringe the patented methods and apparatuses, to be especially made or adapted for use in an infringement of the '566 Patent. Each of the Coolpad Accused '566 Instrumentalities is a material component for use in practicing the '566 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of these Accused Instrumentalities is advertised to be compliant with the relevant standard and primarily used in compliance with that standard.

94. Pantech has been harmed by Defendants' infringing activities.

**COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 8,649,346**

95. The allegations set forth in the foregoing paragraphs 1 through 94 are incorporated into this claim for relief.

96. On February 11, 2014, the '346 Patent, entitled "Method and Apparatus for Transmitting and Receiving Signals in Wireless Communication System" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 13/322,089, filed on December 20, 2011. The '346 Patent claims foreign priority to KR 10-2010-

0131864, filed on December 21, 2010. A true and correct copy of the '346 Patent is attached as Exhibit 4.

97. Pantech is the assignee and owner of all right, title and interest in and to the '346 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for its infringement.

98. The '346 Patent discloses a method and apparatus for transmitting a hybrid automatic repeat request (HARQ) acknowledgement (ACK)/not-acknowledgement (NACK) signal of a user equipment in a time division duplex (TDD) system using a single carrier. For example, the user equipment receives transmit power control (TPC) command for controlling physical uplink control channel (PUCCH) and ACK/NACK resource indicating information for transmitting HARQ ACK/NACK signal on the PUCCH. In particular, the ACK/NACK resource indicating information is received using bits allocated for the transmission of a TPC command. Compliance with 3GPP TS 36.211, 3GPP TS 36.213, and 3GPP TS 36.300, as required by at least the LTE Advanced cellular standard, requires the use of the inventions recited in at least claims 5-7 and 12-14 of the '346 Patent, including the functionality described in this paragraph.

99. Upon information and belief, Defendants have and continue to directly infringe at least claims 5-7 and 12-14 of the '346 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 5-7 and 12-14 of the '346 Patent (the "Coolpad Accused '346 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 5-7 and 12-14 by practicing claims 5-7 and 12-14 through the Coolpad Accused '346 Instrumentalities, and by causing the Coolpad Accused '346 Instrumentalities to practice the patented inventions.



100. The Coolpad Accused '346 Instrumentalities include, without limitation, the Legacy series phones (*e.g.*, Legacy, Legacy S, Legacy SR, Legacy Brisa, Legacy Boost Mobile, Legacy Go) and Snap series products (*e.g.*, Snap Sprint/Boost/T-Mobile) and other LTE-compatible devices that support at least 3GPP TS 36.211 Release 10 and higher and TS 36.213 Release 10 and higher. On information and belief, each of the Coolpad Accused '346 Instrumentalities incorporates at least one processor configured to comply with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols. Each of the Coolpad Accused '346 Instrumentalities incorporates at least one processor configured to support LTE carrier aggregation. Each of the Coolpad Accused '346 Instrumentalities incorporates at least one processor configured to support LTE TDD (time-division duplex).

101. Certain exemplary Coolpad Accused '346 Instrumentalities each incorporate a MediaTek Helio chipset, application processor, SoC, or system-on-chip (*e.g.*, MediaTek Helio A22). Information and documents from MediaTek's website indicate that each of the incorporated MediaTek Helio chipsets supports LTE carrier aggregation. On information and belief, each incorporated MediaTek Helio chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.211, 3GPP TS 36.213, and 3GPP TS 36.300.

102. Certain exemplary Coolpad Accused '346 Instrumentalities each incorporate a Qualcomm chipset, application processor, SoC, or system-on-chip (*e.g.* Qualcomm Snapdragon 450, 665, or MSM8909). Information and documents from Qualcomm's website indicate that each of the incorporated Qualcomm Snapdragon chipsets supports LTE carrier aggregation and/or LTE TDD. On information and belief, each incorporated Qualcomm Snapdragon chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10

or later cellular communication protocols including at least 3GPP TS 36.211, 3GPP TS 36.213, and 3GPP TS 36.300.

103. Defendants were made aware of the '346 Patent and their infringement thereof at least as early as the correspondence sent from Pantech on September 1, 2020, as discussed in Paragraph 41 above. Defendants were further made aware of the '346 Patent and their infringement thereof by further correspondence sent from Pantech's counsel on January 8, 2021, as discussed in Paragraph 42 above, and as of the date of filing of the Original Complaint on May 25, 2021.

104. Since at least as early as September 1, 2020, when they were made aware of the '346 Patent by Pantech, Defendants' infringement has been, and continues to be, willful.

105. Upon information and belief, these Coolpad Accused '346 Instrumentalities are used, marketed, provided to, and/or used by or for the Defendants' partners, clients, customers/subscribers and end users across the country and in this district.

106. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 5-7 and 12-14 of the '346 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 Coolpad Accused '346 Instrumentalities constitutes direct infringement of at least one claim of the '346 Patent.

107. In particular, the Defendants' actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '346 Instrumentalities and providing instruction materials, training, and services regarding the Coolpad Accused '346 Instrumentalities.

108. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the Coolpad Accused '346 Instrumentalities necessarily infringes the '346 Patent because the inventions of the '346 Patent are required to comply with the relevant cellular standards. Defendants advertise the Coolpad Accused '346 Instrumentalities as compliant with the relevant cellular standards, which induces others to infringe the '346 Patent. Defendants have knowingly induced infringement since at least as early as September 1, 2020, when Defendants were made aware of the '346 Patent during correspondence with Plaintiff as discussed in Paragraph 41 above

109. Upon information and belief, the Defendants are liable as contributory infringers of the '346 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Coolpad Accused '346 Instrumentalities that infringe the patented methods and apparatuses, to be especially made or adapted for use in an infringement of the '346 Patent. Each of the Coolpad Accused '346 Instrumentalities is a material component for use in practicing the '346 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of these Accused Instrumentalities is advertised to be compliant with the relevant standard and primarily used in compliance with that standard.

110. Pantech has been harmed by Defendants' infringing activities.

**COUNT V – INFRINGEMENT OF U.S. PATENT NO. 11,012,954**

111. The allegations set forth in the foregoing paragraphs 1 through 110 are incorporated into this claim for relief.

112. On May 18, 2021, the '954 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. 16/733,106, filed on

January 2, 2020. The '954 Patent claims foreign priority to KR 10-2010-0012564, filed on February 10, 2010, KR 10-2010-0027230, filed on March 26, 2010, and KR 10-2011-0008683, filed on January 28, 2011. A true and correct copy of the '954 Patent is attached as Exhibit 5.

113. Pantech is the assignee and owner of all right, title and interest in and to the '954 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

114. The '954 Patent discloses methods and apparatuses, including carrier aggregation methods and apparatuses, for establishing uplink synchronization in a wireless communication system supporting primary and secondary Component Carriers ("CC"), through the use of timing groups. For instance, a user equipment receives, through a primary CC belonging to a first uplink timing group, a Radio Resource Control (RRC) message comprising information related to a second uplink timing group, transmits a Random Access Preamble (RAP) through one or more CCs for a respective second uplink timing group, and receives in response a timing advance value to apply to the secondary CC for the respective second uplink timing group. For example, Claims 1 and 6 of the '954 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 10 and higher. 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 1 and 6 of the '954 Patent, including the functionality described in this paragraph.

115. Upon information and belief, Defendants have and continue to directly infringe at least claims 1 and 6 of the '954 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 6 of the '954 Patent (the "Coolpad Accused '954 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1 and 6 by practicing claims 1 and 6 through the Coolpad Accused '954 Instrumentalities, and by causing the Coolpad Accused '954 Instrumentalities to practice the patented inventions.

116. Coolpad Accused '954 Instrumentalities include the Legacy series phones (*e.g.*, Legacy, Legacy S, Legacy SR, Legacy Brisa, Legacy Boost Mobile, Legacy Go) and Snap series products (*e.g.*, Snap Sprint/Boost/T-Mobile), and other LTE-compatible devices that support LTE carrier aggregation. On information and belief, each of the Coolpad Accused '954 Instrumentalities incorporates at least one processor configured to comply with 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 10 and higher.

117. Certain exemplary Coolpad Accused '954 Instrumentalities each incorporate a MediaTek Helio chipset, application processor, SoC, or system-on-chip (*e.g.*, MediaTek Helio A22). Information and documents from MediaTek's website indicate that each of the incorporated MediaTek Helio chipsets supports LTE carrier aggregation. On information and belief, each incorporated MediaTek Helio chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.300, TS 36.321, TS 36.213, TS 36.331, and TS 36.211.

118. Certain exemplary Coolpad Accused '954 Instrumentalities each incorporate a Qualcomm chipset, application processor, SoC, or system-on-chip (*e.g.*, Qualcomm Snapdragon 450, 665, or MSM8909). Information and documents from Qualcomm's website indicate that each of the incorporated Qualcomm Snapdragon chipsets supports LTE carrier aggregation. On

information and belief, each incorporated Qualcomm Snapdragon chipset, application processor, SoC, or system-on-chip complies with one or more of LTE Advanced, LTE Release 10 or later cellular communication protocols including at least 3GPP TS 36.300, TS 36.321, TS 36.213, TS 36.331, and TS 36.211.

119. Defendants were made aware of the '954 Patent and their infringement thereof at least as early as the date of filing of the Original Complaint on May 25, 2021.

120. Since at least the filing of the Original Complaint on May 25, 2021, when Defendants were made aware of the '954 Patent, Defendants' infringement has been, and continues to be willful.

121. Upon information and belief, these Coolpad Accused '954 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.

122. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1 and 6 of the '954 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 Coolpad Accused '954 Instrumentalities constitutes direct infringement of at least claims 1 and 6 of the '954 Patent.

123. In particular, Defendants' actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '954 Instrumentalities and providing instruction materials, training, and services regarding the Coolpad Accused '954 Instrumentalities.

124. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the Coolpad Accused '954 Instrumentalities necessarily infringes the '954 Patent because the inventions of the '954 Patent are required to comply with the relevant cellular standards. Defendants have knowingly induced infringement since at least as early as the filing of the Original Complaint on May 25, 2021.

125. Defendants advertise the Coolpad Accused '954 Instrumentalities as compliant with the relevant cellular standard, which induces others to infringe the '954 Patent. Defendants have knowingly induced infringement since at least the filing of the Original Complaint on May 25, 2021, when Defendants were made aware of the '954 Patent.

126. Upon information and belief, Defendants are liable as contributory infringers of the '954 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Coolpad Accused '954 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '954 Patent. Each of the Coolpad Accused '954 Instrumentalities is a material component for use in practicing the '954 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use. In particular, each of the Coolpad Accused '954 Instrumentalities is advertised to be compliant with the relevant standard and primarily used in compliance with that standard.

127. Pantech has been harmed by Defendants' infringing activities.

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

128. The allegations set forth in the foregoing paragraphs 1 through 127 are incorporated into this claim for relief.

129. 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 August 6, 2013. The '824 Patent claims priority to U.S. Patent Application No. 13/341,447, filed on December 29, 2011, U.S. Patent Application No. 12/347,352, filed on December 31, 2008, and U.S. Provisional Application No. 61/018,492, filed on January 1, 2008. A true and correct copy of the '824 Patent is attached as Exhibit 6.

130. Pantech 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 infringement of it.

131. 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.

132. Upon information and belief, Defendants have and continue 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 "Coolpad Accused '824 Instrumentalities"). Defendants also have and continue to directly infringe at least



claims 1 and 7 by practicing claims 1 and 7 through the Coolpad Accused '824 Instrumentalities, and by causing the Coolpad Accused '824 Instrumentalities to practice the patented inventions.

133. Coolpad Accused '824 Instrumentalities include the Legacy series phones (*e.g.*, Legacy, Legacy S, Legacy SR, Legacy Brisa, Legacy Boost Mobile, Legacy Go) and Snap series products (*e.g.*, Snap Sprint/Boost/T-Mobile), and other LTE-compatible devices that support the LTE contention based random access procedure. On information and belief, each of the Coolpad Accused '824 Instrumentalities incorporates at least one processor configured to comply with LTE and to support the LTE contention based random access procedure.

134. Defendants were made aware of the '824 Patent and their infringement thereof at least as early as the correspondence sent from Pantech on September 1, 2020, as discussed in Paragraph 41 above. Defendants were further made aware of the '824 Patent and their infringement thereof by further correspondence sent from Pantech's counsel on January 8, 2021, as discussed in Paragraph 42 above, and as of the date of filing of this First Amended Complaint.

135. Since at least September 1, 2020, when Defendants were made aware of the '824 Patent, Defendants' infringement has been, and continues to be willful.

136. Upon information and belief, these Coolpad Accused '824 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.

137. Upon information and belief, Defendants have induced and continue 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 Defendants' partners, clients, customers/subscribers, and end

users, whose use of the Coolpad Accused '824 Instrumentalities constitutes direct infringement of at least claims 1 and 7 of the '824 Patent.

138. In particular, Defendants' actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '824 Instrumentalities and providing instruction materials, training, and services regarding the Coolpad Accused '824 Instrumentalities.

139. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the Coolpad Accused '824 Instrumentalities necessarily infringes the '824 Patent because the inventions of the '824 Patent are required to comply with the relevant cellular standards. Defendants have knowingly induced infringement since at least as September 1, 2020.

140. Defendants advertise the Coolpad Accused '824 Instrumentalities as compliant with the relevant cellular standard, which induces others to infringe the '824 Patent. Defendants have knowingly induced infringement since at least September 1, 2020, when Defendants were made aware of the '824 Patent.

141. Upon information and belief, Defendants are liable as contributory infringers of the '824 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Coolpad 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 Coolpad 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 Coolpad Accused '824 Instrumentalities is advertised to be compliant with the relevant standard and primarily used in compliance with that standard.

142. Pantech has been harmed by Defendants' infringing activities.

**COUNT VII – INFRINGEMENT OF U.S. PATENT NO. 6,809,641**

143. The allegations set forth in the foregoing paragraphs 1 through 142 are incorporated into this claim for relief.

144. On October 26, 2004, U.S. Patent No. 6,809,641, “Method For Disabling Alarm Temporarily In Mobile Communication Terminal” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 10/194,038, filed on July 11, 2002. The ’641 Patent claims foreign priority to KR 10-2001-41909, filed on July 12, 2001. A true and correct copy of the ’641 Patent is attached as Exhibit 7.

145. Pantech is the assignee and owner of all right, title and interest in and to the ’641 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

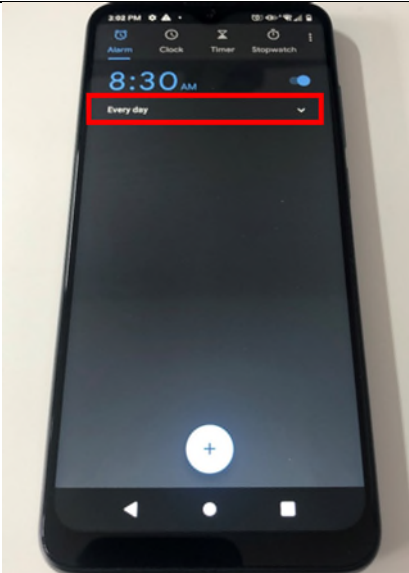
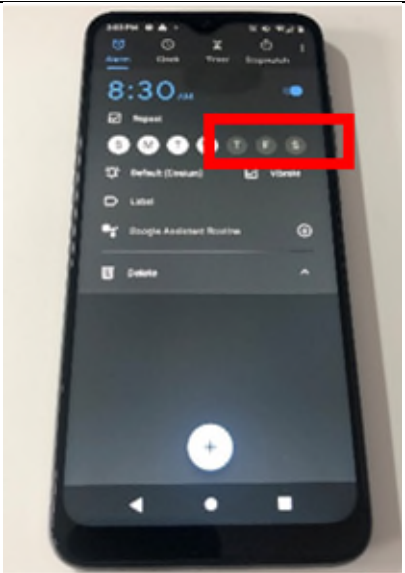
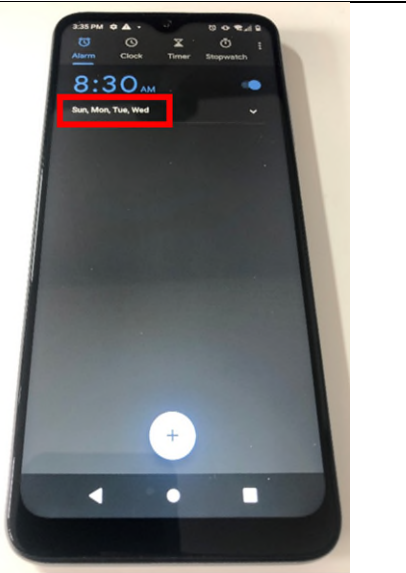
146. The ’641 Patent discloses a method for disabling temporarily a preset alarm in a mobile communication terminal for one day, periodically, or on a designated date.

147. Upon information and belief, Defendants have and continue to directly infringe at least claim 1 of the ’641 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 ’641 Patent (the “Coolpad Accused ’641 Instrumentalities”). Defendants also have and continue to directly infringe at least claim 1 by practicing claim 1 through the Coolpad Accused ’641 Instrumentalities, and by causing the Coolpad Accused ’641 Instrumentalities to practice the patented inventions.

148. Coolpad Accused ’641 Instrumentalities include, for example, the Legacy series phones (*e.g.*, Legacy, Legacy Brisa) and Snap series products (*e.g.*, Snap Sprint/Boost/T-Mobile),

and other Coolpad products running Android which have the same or substantially the same interface for setting and disabling the alarm clock.

149. For example, temporarily disabling a preset alarm in each of the Coolpad Accused '641 Instrumentalities includes a first step of determining whether a temporal disabling menu button (*e.g.*, the drop-down menu showing “Every Day” preselected) has been pushed by a user while the Coolpad Accused '641 Instrumentality (*e.g.*, Legacy Brisa) is in receive wait mode; a second step of displaying temporal disabling menu items (*e.g.*, individual round buttons annotated in red block below indicating days of the week such as Monday, Tuesday, etc. on the next screen) upon push of said temporal disabling menu button by said user; and a third step of temporarily disabling alarms of the date designated by the corresponding menu item upon selection of a temporal disabling menu item by said user.

		
<p>Each day of week preselected</p>	<p>User chooses to disable Thursdays, Fridays, and Saturdays</p>	<p>Thursdays, Fridays, and Saturdays successfully disabled</p>
<p align="center"><b>Screenshots of Coolpad Legacy Brisa (annotated)</b></p>		

150. Defendants were made aware of the '641 Patent and their infringement thereof at least as early as the correspondence sent from Pantech on September 1, 2020, as discussed in Paragraph 41 above. Defendants were further made aware of the '641 Patent and their infringement thereof by further correspondence sent from Pantech's counsel on January 8, 2021, as discussed in Paragraph 42 above, and as of the date of filing of the Original Complaint on May 25, 2021.

151. Since at least September 1, 2020, when they were made aware of the '641 Patent by Pantech's counsel, Defendants' infringement has been, and continues to be, willful.

152. Upon information and belief, these Coolpad Accused '641 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.

153. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claim 1 of the '641 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 Coolpad Accused '641 Instrumentalities constitutes direct infringement of at least claim 1 of the '641 Patent.

154. In particular, Defendants' actions that aid and abet others, such as its partners, customers, subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '641 Instrumentalities and providing instructions regarding the Coolpad Accused '641 Instrumentalities.

155. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the preset alarm disabling function of the Coolpad Accused '641 Instrumentalities infringes the '641 Patent. Defendants have knowingly induced infringement since at least

September 1, 2020, when Defendants were made aware of the '641 Patent during correspondence with Plaintiff as discussed in Paragraph 41 above.

156. Upon information and belief, Defendants are liable as contributory infringers of the '641 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States the Accused Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '641 Patent. Each of the Coolpad Accused '641 Instrumentalities is a material component for use in practicing the '641 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use.

157. Pantech has been harmed by Defendants' infringing activities.

**COUNT VIII – INFRINGEMENT OF U.S. PATENT NO. 9,152,479**

158. The allegations set forth in the foregoing paragraphs 1 through 157 are incorporated into this claim for relief.

159. On October 6, 2015, the '479 Patent, entitled "Apparatus and Method for Processing Event Notification" was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application No. 14/134,548, filed on December 19, 2013. The '479 Patent claims foreign priority to KR 10-2012-0149784, filed on December 20, 2012. A true and correct copy of the '479 Patent is attached as Exhibit 8.

160. Pantech is the assignee and owner of all right, title and interest in and to the '479 Patent, including the right to assert all causes of action arising under said patent and the right to any remedies for its infringement.

161. The '479 Patent discloses an apparatus and method for processing an event notification, specifically, the use of a notification setting that controls a default notification scheme

for an event and determining a modified notification scheme for an event if the default notification scheme is prohibited by the notification setting.

162. Upon information and belief, Defendants have and continue to directly infringe at least claims 1-2 of the '479 Patent by making, using, selling, importing, offering to sell within the United States, and providing to and within the United States, Accused Instrumentalities that practice at least claims 1-2 of the '479 Patent (the "Coolpad Accused '479 Instrumentalities"). Defendants also have and continue to directly infringe at least claims 1-2 by practicing claims 1-2 through the Coolpad Accused '479 Instrumentalities, and by causing the Coolpad Accused '479 Instrumentalities to practice the patented inventions.

163. Coolpad Accused '479 Instrumentalities include, for example, any Coolpad device with built-in Do Not Disturb function, which allows the device (*e.g.*, Coolpad Legacy Brisa) to notify the user of an event, for example, message notifications, using a default notification scheme or a modified notification scheme according to the notification settings.

164. For example, the Coolpad Legacy Brisa provides notifications for events in the form of a sound, vibration and/or visual alert in the form of a pop-up window. The default notification for an incoming message includes at least a pop-up window. The Coolpad Legacy Brisa also provides for Do Not Disturb ("DND") mode which turns off notifications that would otherwise have been activated upon the occurrence of an event and provides these notifications in a modified notification scheme. Further, the DND mode provides for interruption options which allows designated people, for example, to continue providing notifications to the user during DND mode. For example, the Coolpad Legacy Brisa offers message interruptions received from contacts stored in the Coolpad Legacy Brisa while DND mode is active.

165. Defendants were made aware of the '479 Patent and their infringement thereof at least as early as the date of filing of this First Amended Complaint.

166. Since at least the date of filing of this First Amended Complaint, when they were made aware of the '479 Patent, Defendants' infringement has been, and continues to be, willful.

167. Upon information and belief, the Coolpad Accused '479 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.

168. Upon information and belief, Defendants have induced and continue to induce others to infringe at least claims 1-2 of the '479 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 Coolpad Accused '479 Instrumentalities constitute direct infringement of at least claims 1-2 of the '479 Patent.

169. In particular, Defendants' actions that aid and abet others such as its partners, customers/subscribers, clients, and end users to infringe include advertising and distributing the Coolpad Accused '479 Instrumentalities, and providing instruction materials, training and services regarding the Coolpad Accused '479 Instrumentalities.

170. Any party, including Defendants' partners, clients, customers/subscribers, and end users, using the Do Not Disturb function of the Coolpad Accused '479 Instrumentalities infringes the '479 Patent. Defendants have knowingly induced infringement since at least as early as the filing of this First Amended Complaint.

171. Upon information and belief, Defendants are liable as contributory infringers of the '479 Patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United



States the Coolpad Accused '479 Instrumentalities that infringe the patented inventions, to be especially made or adapted for use in an infringement of the '479 Patent. Each of the Coolpad Accused '479 Instrumentalities is a material component for use in practicing the '479 Patent and is specifically made and not a staple article of commerce suitable for substantial non-infringing use.

172. Pantech 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, Plaintiff Pantech demands a trial by jury on all issues triable as such.

### **PRAYER FOR RELIEF**

WHEREFORE, Plaintiff demands judgment for itself and against Defendants as follows:

- A. An adjudication that Defendants have infringed U.S. Patent Nos. 8,538,411, 10,841,142, 9,237,566, 8,649,346, 11,012,954, 9,288,824, 6,809,641, and 9,152,479;
- B. An award of damages to be paid by Defendants adequate to compensate Plaintiff 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 Plaintiff's reasonable attorneys' fees; and
- D. An award to Plaintiff of such further relief at law or in equity as the Court deems just and proper.

Dated: November 26, 2021

Respectfully submitted,

*Of counsel:*

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(\* *pro hac vice* application to be filed)

**CERTIFICATE OF SERVICE**

The undersigned certifies that the foregoing document was filed electronically on November 26, 2021 in compliance with Local Rule CV-5(a). As such, this document was served on all counsel who are deemed to have consented to electronic service. Local Rule CV-5(a)(3)(A).

Dated: November 26, 2021

/s/ James A. Fussell, III  
James A. Fussell, III