UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of	
CERTAIN WIRELESS COMMUNICATIONS EQUIPMENT AND ARTICLES THEREIN	**Investigation No. _____**

COMPLAINT OF SAMSUNG ELECTRONICS CO., LTD. AND SAMSUNG TELECOMMUNICATIONS AMERICA, LLC UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

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Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures (Release 8)."

19. LTE protocol at 3GPP TS 36.300 v8.5.0 entitled, "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2 (Release 8)."

20. LTE protocol at 3GPP TS 36.321 v8.5.0 entitled, "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) Medium Access Control (MAC) protocol specification (Release 8)."

21. List of licensees and parties in receipt of a covenant not to assert for the Asserted Patents **(CONFIDENTIAL)**.

22. Ericsson Product Specification Sheets for Exemplary Accused Products.

23. EJL Wireless Research Report (Nov. 2011) **(CONFIDENTIAL)**.

24. Infringement claim charts for U.S. Patent No. 7,782,749 - exemplary base station product RBS 6000 for independent claims 1, 4, 7, 10, and 12.

25. Infringement claim charts for U.S. Patent No. 8,165,081 - exemplary base station product RBS 6000 for independent claims 1, 4, 9, and 12.

26. Infringement claim charts for U.S. Patent No. 8,208,438 - exemplary base station product RBS 6000 for independent claims 1 and 8.

27. Infringement claim charts for U.S. Patent No. 8,228,827 - exemplary base station product RBS 6000 for independent claims 1 and 5.

28. Infringement claim charts for U.S. Patent No. 6,617,929 - exemplary base station product RBS 6000 for independent claims 1 and 5.

29. Infringement claim charts for U.S. Patent No. 6,767,813 - exemplary base station product RBS 6000 for independent claims 1, 5, 11, and 19.

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57. Domestic Industry claim chart for U.S. Patent No. 8,165,081 - claims 1 and 5.

58. Domestic Industry claim charts for U.S. Patent No. 8,208,438 - claims 1 and 15.

59. Domestic Industry claim charts for U.S. Patent No. 8,228,827 - claims 1 and 9.

60. Domestic Industry claim chart for U.S. Patent No. 6,617,929 - claim 1 **(CONFIDENTIAL)**.

61. Domestic Industry claim chart for U.S. Patent No. 6,767,813 - claim 1 (**CONFIDENTIAL**).

62. Domestic Industry claim chart for U.S. Patent No. 6,865,682 - claim 1 (**CONFIDENTIAL**).

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64. Texas Instruments TPS40197 Datasheet.

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70. RBS 6000 WCDMA Baseband Product Description

APPENDICES

Appendix Item	Description
A.	Certified copy of file wrapper for U.S. Patent No. 7,782,749.
B.	Certified copy of file wrapper for U.S. Patent No. 8,165,081.
C.	Certified copy of file wrapper for U.S. Patent No. 8,208,438.
D.	Certified copy of file wrapper for U.S. Patent No. 8,228,827.
E.	Certified copy of file wrapper for U.S. Patent No. 6,617,929.
F.	Certified copy of file wrapper for U.S. Patent No. 6,767,813.
G.	Certified copy of file wrapper for U.S. Patent No. 6,865,682.
H.	Technical references cited in file wrapper for U.S. Patent No. 7,782,749.
I.	Technical references cited in file wrapper for U.S. Patent No. 8,165,081.
J.	Technical references cited in file wrapper for U.S. Patent No. 8,208,438.
K.	Technical references cited in file wrapper for U.S. Patent No. 8,228,827.
L.	Technical references cited in file wrapper for U.S. Patent No. 6,617,929.
M.	Technical references cited in file wrapper for U.S. Patent No. 6,767,813.
N.	Technical references cited in file wrapper for U.S. Patent No. 6,865,682.

I. INTRODUCTION

1. This Complaint is filed by Samsung Electronics Co., Ltd. and Samsung Telecommunications America, LLC (collectively, "Samsung" or "Complainants") under Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, based on the unlawful importation into the United States, the sale for importation into the United States, and the sale within the United States after importation, by the proposed Respondents of certain wireless communications equipment, and articles therein that infringe certain claims of United States Patent Nos. 7,782,749 ("the '749 patent"), 8,165,081 ("the '081 patent"), 8,208,438 ("the '438 patent"), 8,228,827 ("the '827 patent"), 6,617,929 ("the '929 patent"), 6,767,813 ("the '813 patent"), and 6,865,682 ("the '682 patent") (collectively, the "Asserted Patents") either literally or under the doctrine of equivalents.

2. Samsung is one of the world's leading electronics companies, specializing in wireless communications, digital appliances and media, semiconductors, memory and system integration. Today, Samsung's innovative and top-quality products and processes are world recognized. Many of these advances concern Samsung's innovative wireless communications business, including both wireless communications devices ranging from smart phones to tablets as well as the hardware that supports the networks to which those devices connect.

3. The proposed Respondents Ericsson Inc. and Telefonaktiebolaget LM Ericsson (collectively, "Ericsson" or "Respondents") manufacture, import, sell for importation, sell after importation, service, and repair, among other things, wireless communications systems and equipment used in those systems, such as wireless communication base stations (collectively, the "Accused Products"). The Accused Products incorporate, without license, many technologies developed by Samsung and protected by patents issued to and owned by Samsung.

4. Certified copies of the Asserted Patents are included at Exhibits 1, 2, 3, 4, 5, 6, and 7. A list of foreign counterparts to the Asserted Patents is included at Exhibit 8. Samsung owns all rights, title, and interest in each of the Asserted Patents. Certified copies of the assignment records for each of the Asserted Patents are included at Exhibits 9, 10, 11, 12, 13, 14, and 15.

5. A domestic industry as required by 19 U.S.C. §§ 1337(a)(2) and (3) exists and/or is in the process of being established in the United States relating to the technology protected by the Asserted Patents, including substantial investment and expenditures of Samsung and/or Samsung's partners, and substantial investment in the exploitation of the inventions claimed in the Asserted Patents, including through engineering, research and development, and servicing.

6. Samsung seeks as relief a permanent limited exclusion order under 19 U.S.C. § 1337(d) barring from entry into the United States directly-infringing or indirectly-infringing wireless communications equipment and articles therein manufactured or sold by or on behalf of Respondents. Samsung further seeks as relief a permanent cease and desist order under 19 U.S.C. § 1337(f) prohibiting Respondents from marketing, distributing, selling, offering for sale, warehousing inventory for distribution, or otherwise transferring or bringing into the United States infringing wireless communications equipment and articles therein.

II. COMPLAINANTS

7. Complainant Samsung Electronics Co., Ltd. ("SEC") is a corporation organized and existing under the laws of the Country of Korea, having its principal place of business at Samsung Main Building, Taepyung-ro 2-ka, Chung-ku, Seoul 100-742 Korea. SEC is the assignee of the Samsung patents with the right to sue for all past, present, and future infringement thereof.

8. Complainant Samsung Telecommunications America, LLC ("STA") is a limited liability company organized and existing under the laws of the State of Delaware, having its principal place of business at 1301 East Lookout Drive, Richardson, Texas 75082. STA is a subsidiary of SEC.

9. Samsung is in the business of designing, developing and marketing a wide array of products. Founded in 1969, SEC has grown to become a world leader in the design, manufacture and marketing of a wide variety of electronic products, ranging from innovative consumer electronics to semiconductors. SEC is one of the largest manufacturers of wireless communications devices in the world and has long focused on the United States as a critical market for its products. In 1996, Samsung established STA to engage in activities in the United States relating to wireless communications devices. Complainants design, develop, manufacture, market, and support wireless communications equipment to consumers and commercial wireless providers, including wireless base stations, phones, and other components using protocols such as LTE and others. As a result of its consistent investment in these activities, Samsung is the number one provider by volume of mobile devices in the United States. Additional information concerning Samsung can be obtained from its 2011 Annual Report at Exhibit 49.

10. Complainants have substantial operations in the United States, including with respect to the Asserted Patents. Complainants have research and development, testing and engineering, manufacturing, assembly, packaging, installation, customer service, repair, warranty support, sales and marketing, and business offices in Richardson, TX; Frisco, TX; Plano, TX; Herndon, VA; San Jose, CA; Washington, DC; Ridgefield, NJ; Overland Park, KS; Atlanta, GA; and Bellevue, WA. Additionally, Complainants work with thousands of contract employees in

the United States to supplement their own work force dedicated to projects concerning the Asserted Patents.

11. Complainants also employ the inventions claimed in the Asserted '813 Patent in manufacturing the integrated circuits used in their 45 nm Application Processor products. These integrated circuits and application processors are manufactured at Samsung Austin Semiconductor, LLC (SAS), a subsidiary of SEC with substantial semiconductor fabrication facilities in Austin, Texas. The manufacture of integrated circuits for Complainants' 28 nm Application Processor products is scheduled to begin at the Austin semiconductor fabrication facility in 2013 and significant expenditures have been made towards that end. The 28 nm products also practice the inventions claimed in the '813 patent.

12. Complainants researched and developed technology that is protected by the Asserted Patents. Complainant SEC is the full owner of all rights and title to all of the Asserted Patents. Certified copies of the relevant assignment records are attached at Exhibits 9, 10, 11, 12 13, 14, and 15.

13. Complainants have made and continue to make significant investment in the design and development of products protected by the Asserted Patents. In the United States, Complainants, their partners, and their contractors exploit the technologies covered by the Asserted Patents by various activities, including research and development, engineering, manufacturing, assembly, installation and warranty support among others, and as discussed more fully below. In connection with the exploitation of these technologies, Complainants have made significant investments in the United States in facilities, equipment, labor, and capital, also as described in Section X below.

III. THE PROPOSED RESPONDENTS

14. On information and belief, Ericsson Inc. is a corporation organized and existing under the laws of the State of Delaware, having its principal place of business at 6300 Legacy Drive, Plano, Texas 75024. On information and belief, Ericsson Inc. imports into the United States wireless communications equipment and articles therein, including base stations (or "NodeB"), antennas, transmitters, switching systems and other products used to build wireless networks. Additionally, on information and belief, Ericsson Inc. is a wholly owned subsidiary of Telefonaktiebolaget LM Ericsson.

15. On information and belief, Telefonaktiebolaget LM Ericsson is a corporation organized and existing under the laws of the Country of Sweden, having its principal place of business at Torshamnsgatan 23, Kista, Stockholm, Sweden 164 83. On information and belief, Telefonaktiebolaget LM Ericsson manufactures, develops, sells for importation, and exports to the United States wireless communications equipment, and articles therein, including base stations, antennas, transmitters, switching systems and other products used to build wireless networks.

16. On information and belief, Respondents collectively design, develop, manufacture, sell, import into the United States, sell after importation into the United States, export, and import wireless communications equipment for use with LTE applications and articles therein, which include amplifiers, microprocessor modules, and semiconductors, including wireless network base stations, that are imported in the United States, as further described in Section VI below.

IV. THE TECHNOLOGY AND PRODUCTS AT ISSUE

17. The technologies at issue relate to wireless communications base stations for use with LTE applications and including certain Doherty amplifiers, semiconductors, and/or microprocessor modules as components. The base stations are used by wireless carriers in the United States to build wireless networks.

18. The Accused Products are wireless communications devices, including wireless base stations for use with LTE applications, and also articles therein, which include, among other things, baseband processor chips or chipsets, amplifiers, semiconductors, or any other circuitry, chips or chipsets that carry out functions and/or possess structures of the wireless communications equipment of which they are a part. The Accused Products are sold for importation into, imported into, sold after importation into, and used within the United States by or on behalf of Respondents.

V. THE PATENTS IN SUIT AND NONTECHNICAL DESCRIPTIONS OF THE INVENTIONS

19. As set forth below, SEC owns by assignment the entire right, title, and interest in and to each of the Asserted Patents. *See* Exhibits 9, 10, 11, 12, 13, 14, and 15.

20. Pursuant to Commission Rule 210.12(c), four copies of the certified prosecution histories of each of the Asserted Patents have been submitted with this Complaint as Appendices A, B, C, D, E, F, and G. Pursuant to Commission Rule 210.12(c), the cited references for each of the Asserted Patents also have been submitted with this Complaint as Appendices H, I, J, K, L, M, and N.

A. Nontechnical Description of the '749 Patent[1]

21. United States Patent No. 7,782,749, entitled "Method for Mapping Physical Downlink Control Channel to Resources and Apparatus for Transmitting/Receiving the Mapped Physical Downlink Control Channel in a Wireless Communication System," issued on August 24, 2010, to inventors Jae-Chon Yu, Hwan-Joon Kwon, Dong-Hee Kim, and Yeon-Ju Lim. The '749 patent expires on July 29, 2028. The '749 patent issued from U.S. Patent App. Ser. No. 12/053,155, filed on March 21, 2008, and was previously published as U.S. Patent Pub. No. 2008/0232495 on September 25, 2008. The '749 patent claims priority to Korean Patent Application Nos. 10-2007-0027753, filed March 21, 2007, and 10-2007-0036198, filed April 12, 2007.

22. The '749 patent contains 14 claims, including 6 independent claims and 8 dependent claims. Complainants assert that Respondents' wireless communications equipment for use with LTE applications and activities relating thereto infringe at least claims 1-13 the '749 patent, either literally or under the doctrine of equivalents.

23. The '749 patent generally concerns a method and apparatus for mapping the physical downlink control channels to resources in a wireless communications system to achieve improved interference diversity. Generally, control channels that a Node B generates for a plurality of users are mapped to resource elements prior to transmission to users, and are often mapped in the same manner, which may cause interference. The '749 patent inventors

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[1] These descriptions and any other non-technical descriptions within this Complaint are for illustrative purposes only. Nothing contained within this complaint is intended to, either implicitly or explicitly, express any position regarding the proper construction of any claim of the Asserted Patents.

developed a novel way of transmitting and receiving mapped control channels and method for mapping the same to reduce this interference in which control channel elements are allocated to the channels and concatenated, interleaved, and mapped to resource elements.

B. Nontechnical Description of the '081 Patent

24. United States Patent No. 8,165,081, entitled "Control and Data Multiplexing in Communication Systems," issued on April 24, 2012, to inventors Aris Papasakeliariou and Joon-Young Cho. The '081 patent expires on September 14, 2030. The '081 patent issued from U.S. Patent App. Ser. No. 12/365,608, filed on February 4, 2009, and was previously published as U.S. Patent Pub. No. 2009/0232101 on September 17, 2009. The '081 patent claims priority to U.S. Provisional App. No. 61/025,925, filed on February 4, 2008.

25. The '081 patent contains 16 claims, including 8 independent claims and 8 dependent claims. Complainants assert that Respondents' wireless communications equipment for use with LTE applications and activities relating thereto infringe at least claims 1, 4, 9, and 12 of the '081 patent, either literally or under the doctrine of equivalents.

26. The '081 patent generally concerns a method and apparatus for control and data multiplexing in communication systems. In a wireless communication system, a mobile user equipment transmits data information and, in addition, several types of control information, including acknowledgement and non-acknowledgement (ACK/NACK) signals, channel quality indicator (CQI) signals, pre-coding matrix indicator (PMI) signals, and rank indicator (RI) signals, to a base station over an uplink channel. The transmission formats of the data and control information may be different to achieve different respective levels of reception reliability. To decouple reception reliability while minimizing signaling overhead associated with the transmission of separate data and control information transmission formats, the '081 patent inventors developed a novel method and apparatus to efficiently relate the control and data

information transmission formats using offset values and to transmit information regarding those offset values to a mobile user element.

C. Nontechnical Description of the '438 Patent

27. United States Patent No. 8,208,438, entitled "Method and Apparatus for Allocating Resources of a Control Channel in a Mobile Communication System using Orthogonal Frequency Division Multiplexing," issued on June 26, 2012, to inventors Jin-Kyu Han, Ju-Ho Lee, Hwan-Joon Kwon, Young-Bum Kim, Byung-Sik Kim, and Hyoung-Ju Ji. The '438 patent expires on September 27, 2030. The '438 patent issued from U.S. Patent App. Ser. No. 12/244,445, filed on October 2, 2008, and was previously published as U.S. Patent Pub. No. 2009/0097447 A1 on April 16, 2009. The '438 patent claims priority to Korean Patent Application No. 10-2007-0099537, filed on October 2, 2007; Korean Patent Application No. 10-2007-0118847, filed on November 20, 2007; and Korean Patent Application No. 10-2008-0000400, filed on January 2, 2008.

28. The '438 patent contains 28 claims, including 4 independent claims and 24 dependent claims. Complainants assert that Respondents' wireless communications equipment for use with LTE applications and activities relating thereto infringe at least claims 1-14 of the '438 patent, either literally or under the doctrine of equivalents.

29. The '438 patent generally concerns a method and apparatus for mapping the physical downlink control channels to resources in a wireless communications system to achieve improved transmission and reception properties. Generally, the invention relates to the pattern by which information is arranged for transmission; the information is arranged in groups and ordered first in time, then in frequency. By mapping in this manner, frequency difference roughly increases with increasing resource element groups with improved transmission and reception properties in a LTE OFDM system.

D. Nontechnical Description of the '827 Patent

30. United States Patent No. 8,228,827, entitled "Method and Apparatus for Detecting Contention During Random Access Procedure in a Mobile Communication System," issued on July 24, 2012, to inventors Kyeong-In Jeong, Gert Jan Van Lieshout, Himke Van Der Velde, and Soeng-Hun Kim. The '827 patent expires on September 25, 2030. The '827 patent issued from U.S. Patent App. Ser. No. 12/028,508, filed on February 8, 2008, and was previously published as U.S. Patent Pub. No. 2008/0194243 A1 on August 14, 2008. The '827 patent claims priority to Korean Patent Application No. 10-2007-0014024, filed on February 9, 2007.

31. The '827 patent contains 14 claims, including 4 independent claims and 10 dependent claims. Complainants assert that Respondents' wireless communications equipment for use with LTE applications and activities relating thereto infringe at least claims 1-8 of the '827 patent, either literally or under the doctrine of equivalents.

32. The '827 patent concerns a method and apparatus for performing a random access procedure in a mobile communication system. Generally, the invention relates to efficiently detecting contention and reducing signaling overhead during a random access procedure, for example, by minimizing unnecessary transmission of contention resolution messages.

E. Nontechnical Description of the '929 Patent

33. United States Patent No. 6,617,929, entitled "Full Output Matching Apparatus of a Microwave Doherty Amplifier," issued on September 9, 2003, to inventors Bumman Kim, Youngoo Yang, Jaehyok Yi, and Young Yun Woo. The '929 patent expires on February 19, 2022. The '929 patent issued from U.S. Patent App. Ser. No. 10/076,636, filed on February 19, 2002, and was previously published as U.S. Patent Pub. No. 2002/0135425 on September 26, 2002. The '929 patent claims priority to Korean Patent Application No. 2001-14516, filed March 21, 2001.

34. The '929 patent contains 8 claims, including 2 independent claims and 6 dependent claims. Complainants assert that Respondents' wireless communications equipment and activities relating thereto that contain a Doherty Amplifier infringe claims 1-8 of the '929 patent, either literally or under the doctrine of equivalents.

35. The '929 patent generally concerns a Doherty amplifier, which is a well-known type of radio frequency amplifier that uses a combination of carrier and peaking amplifiers. Doherty amplifiers are widely used in modern wireless communication base stations, but conventional designs have shown limited efficiency. To improve efficiency, the '929 patent's inventors developed a novel Doherty amplifier that includes novel combinations of load matching circuits and phase tuning elements used in conjunction with the carrier and peaking amplifiers.

F. Nontechnical Description of the '813 Patent

36. United States Patent No. 6,767,813, entitled "Integrated Circuit Devices Having Active Regions with Expanded Effective Widths and Methods of Manufacturing Same," issued on July 27, 2004, to inventors Kang-yoon Lee and Jong-woo Park. The '813 patent expires on October 26, 2021. The '813 patent issued from U.S. Patent App. Ser. No. 10/057,745, filed on October 26, 2001, and was previously published as U.S. Patent Pub. No. 2002/0109182 on August 15, 2002. The '813 patent claims priority to Korean Patent Application No. 2000-63711, filed October 28, 2000.

37. The '813 patent contains 24 claims, including 4 independent claims and 20 dependent claims. Complainants assert that Respondents' wireless communications equipment and activities relating thereto that contain an integrated circuit device having active regions with expanded effective widths infringe at least claims 1-3, 5-12, and 14-23 of the '813 patent, either literally or under the doctrine of equivalents.

38. The '813 patent generally concerns an integrated circuit device having active regions with expanded effective widths. Generally, as the size of a semiconductor device, such as a memory device, decreases, the gate length of a transistor in the semiconductor device and the width of an active region within the transistor may also decrease. This may make it difficult to ensure that the transistor maintains a sufficient drive capability as the semiconductor device becomes smaller. The '813 patent inventors developed a novel integrated circuit device that increases the effective width of the transistor active region, resulting in an increase in the driving capability. This integrated circuit is used, for example, in baseband processors, which are components of wireless communications equipment.

G. Nontechnical Description of the '682 Patent

39. United States Patent No. 6,865,682, entitled "Microprocessor Module with Integrated Voltage Regulators," issued on March 8, 2005, to inventors Gerald Talbot and Hanwoo Cho. The '682 patent expires on June 18, 2019. The '682 patent issued from U.S. Patent App. Ser. No. 09/335,940, filed on June 18, 1999, and was not previously published.

40. The '682 patent contains 9 claims, including 1 independent claim and 8 dependent claims. Complainants assert that Respondents' wireless communications equipment and activities relating thereto that contain a microprocessor module infringe at least claims 1, 2, 4, and 8 of the '682 patent, either literally or under the doctrine of equivalents.

41. The '682 patent generally concerns a microprocessor module with integrated voltage regulators. Microprocessor modules typically consist of a circuit panel having one or more processor chips and supporting electronics such as random access memory mounted onto the panel. The circuit panel attaches via a communication interface to a motherboard module, which typically has one or more voltage regulators that adjust the voltage, sourced from an external power supply, to a level suitable for the processors and support electronics on the circuit

panel. However, as advancing semiconductor technologies require smaller component devices operating at higher clock rates and lower voltages, upgrading the typical microprocessor-motherboard assembly requires replacing not only the circuit panel, but also replacing and/or reprogramming the voltage regulators mounted on the motherboard to implement the lower operating voltages. The '682 patent inventors developed an improved microprocessor module in which voltage regulators are integrated directly on the circuit panel, thereby overcoming the power supply limitations of conventional systems and making the processor module readily upgradable without altering the existing motherboard.

H. Foreign Counterparts

42. A list of the foreign counterpart patents and applications to the Asserted Patents is included with this Complaint at Exhibit 8. Complainants own all right, title, and interest in and to each of these foreign counterparts. Complainants are aware of no other foreign counterparts or foreign counterpart applications corresponding to the Asserted Patents that have been issued, abandoned, or rejected.

I. Licensees

43. Samsung and Ericsson previously cross-licensed their respective patent portfolios relating to certain cellular communications protocols under an agreement that was entered into on December 18, 2001, and terminated on December 31, 2005. The companies again entered into a cross license on June 29, 2007, that terminated on March 31, 2011. Confidential Exhibit 21 includes a list of entities that are either licensed under the Asserted Patents or have received a covenant not to assert from Samsung with respect to the Asserted Patents.

VI. UNLAWFUL AND UNFAIR ACTS OF RESPONDENT—PATENT INFRINGEMENT

44. Respondents have engaged in unlawful and unfair acts including the sale for importation into the United States, importation into the United States, and/or sale within the United States after importation of the Accused Products that infringe one or more of the following claims:

Patent Number	Asserted Claims
'749 Patent	1-13
'081 Patent	1,4, 9, 12
'438 Patent	1-14
'827 Patent	1-8
'929 Patent	1-8
'813 Patent	1-3, 5-12, 14-23
'682 Patent	1, 2, 4, 8

45.

A. Infringement Of The '749 Patent

46. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '749 patent.

47. On information and belief, the Accused Products infringe at least claims 1-13 of the '749 patent. On information and belief, Respondents directly infringe at least claims 1-13 of the '749 patent by making, using, selling, offering for sale within the United States and/or importing into the United States, Accused Products for use with LTE applications that implement the LTE wireless communications standards, including 3GPP TS 36.211 v8.5.0. *See* Exhibit 16. Exemplary Accused Products include the RBS 6000 series base stations. *See* Exhibit 22.

48. On information and belief, Respondents actively induce others, including LTE network service providers who deploy the Accused Products in their LTE networks, to commit direct infringement of at least claims 1-13 of the '749 patent. On information and belief, service providers who deploy the Accused Products in their LTE networks and make routine use of the

Accused Products directly infringe at least claims 1-13 of the '749 patent. On information and belief, Respondents are aware of the '749 patent or have acted with willful blindness to its existence at least through the parties' longstanding licensing negotiations, Samsung's ETSI disclosures, the specific applicability of Samsung's LTE patents to the LTE standard—a standard that Respondents adopted knowing that their LTE products would be covered by third party patents, including Samsung's patents, and/or the filing of this Complaint. Further, on information and belief, Respondents induce service providers who deploy the Accused Products in their LTE networks, by providing at least manuals, training, guides, and/or demonstrations, to perform acts intended by Respondents to cause direct infringement of at least claims 1-13 of the '749 patent.

49. On information and belief, Respondents contribute to infringement of at least claims 1-13 of the '749 patent of others, including LTE network service providers who deploy the Accused Products in their LTE networks, by providing the Accused Products or articles therein, which are specially made or adapted for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use. On information and belief, as discussed in the prior paragraph, Respondents had knowledge or acted with willful blindness that the Accused Products or articles therein were specially made or adapted for use in an infringement of the '749 patent and not a staple article of commerce suitable for substantial noninfringing use.

50. Exemplary claim charts comparing the '749 patent asserted independent claims 1, 4, 7, 10, and 12 to Respondents' LTE base station products are attached at Exhibit 24.

B. Infringement Of The '081 Patent

51. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '081 patent.

52. On information and belief, the Accused Products that implement the LTE wireless communications standards, including 3GPP TS 36.212 v8.5.0 entitled, "3rd Generation Partnership Project: Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Multiplexing and Channel Coding (Release 8)" and 3GPP TS 36.213 v8.5.0 entitled, "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures (Release 8)," relating to the transmission of information promulgated by 3GPP, infringe at least claims 1, 4, 9, and 12 of the '081 patent. *See* Exhibits 17 and 18. On information and belief, Respondents directly infringe at least claims 1, 4, 9, and 12 of the '081 patent by making, using, selling offering for sale within the United States and/or importing into the United States, Accused Products that implement the LTE wireless communications standards, including 3GPP TS 36.212 v8.5.0 and 3GPP TS 36.213 v8.5.0. Exemplary LTE Accused Products include the RBS 6000 series base stations. *See* Exhibit 22.

53. On information and belief, Respondents actively induce others, including LTE network service providers who deploy the Accused Products in their LTE networks, to commit direct infringement of at least claims 1, 4, 9, and 12 of the '081 patent. On information and belief, Respondents are aware of the '081 patent or have acted with willful blindness to its existence at least through the parties' longstanding licensing negotiations, Samsung's ETSI disclosures, the specific applicability of Samsung's LTE patents to the LTE standard—a standard that Respondents adopted knowing that their LTE products would be covered by third party patents, including Samsung's patents, and/or the filing of this Complaint. Further, on information and belief, Respondents induce service providers who deploy the Accused Products in their LTE networks, by providing at least manuals, training, guides, and/or demonstrations, to

perform acts intended by Respondents to cause direct infringement of at least claims 1, 4, 9, and 12 of the '081 patent.

54. On information and belief, Respondents contribute to the infringement of at least claims 1, 4, 9, and 12 of the '081 patent of others, including LTE network service providers who deploy the Accused Products in their LTE networks, by providing the Accused Products or articles therein, which are specially made or adapted for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use. On information and belief, as discussed in the prior paragraph, Respondents had knowledge or acted with willful blindness that the Accused Products or articles therein were specially made or adapted for use in an infringement of the '081 patent and not a staple article of commerce suitable for substantial noninfringing use.

55. Exemplary claim charts comparing the '081 patent asserted independent claims 1, 4, 9, and 12 to Respondents' LTE base station products are attached at Exhibit 25.

C. Infringement Of The '438 Patent

56. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '438 patent.

57. On information and belief, the Accused Products that implement the LTE wireless communications standards, including 3GPP TS 36.211 v8.5.0 entitled, "3rd Generation Partnership Project: Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation (Release 8)," relating to the transmission of information promulgated by 3GPP, infringe at least claims 1-14 of the '438 patent. *See* Exhibit 16. On information and belief, Respondents directly infringe at least claims 1-14 of the '438 patent by making, using, selling, offering for sale within the United States and/or importing into the United States, Accused Products that implement the LTE wireless

communications standards, including 3GPP TS 36.211 v8.5.0. Exemplary Accused Products include the RBS 6000 series base stations. *See* Exhibit 22.

58. On information and belief, Respondents actively induce others, including LTE network service providers who deploy the Accused Products in their LTE networks, to commit direct infringement of at least claims 1-14 of the '438 patent. On information and belief, service providers who deploy the Accused Products in their LTE networks and make routine use of the Accused Products directly infringe at least claims 1-14 of the '438 patent. On information and belief, Respondents are aware of the '438 patent or have acted with willful blindness to its existence at least through the parties' longstanding licensing negotiations, Samsung's ETSI disclosures, the specific applicability of Samsung's LTE patents to the LTE standard—a standard that Respondents adopted knowing that their LTE products would be covered by third party patents, including Samsung's patents, and/or the filing of this Complaint. Further, on information and belief, Respondents induce service providers who deploy the Accused Products in their LTE networks, by providing at least manuals, training, guides, and/or demonstrations, to perform acts intended by Respondents to cause direct infringement of at least claims 1-14 of the '438 patent.

59. On information and belief, Respondents contribute to infringement of at least claims 1-14 of the '438 patent of others, including LTE network service providers who deploy the Accused Products in their LTE networks, by providing the Accused Products or articles therein, which are specially made or adapted for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use. On information and belief, as discussed in the prior paragraph, Respondents had knowledge or acted with willful blindness that the Accused Products or articles therein were specially made or adapted for use in

an infringement of the '438 patent and not a staple article of commerce suitable for substantial noninfringing use.

60. Exemplary claim charts comparing each of the '438 patent asserted independent claims 1 and 8 to Respondents' LTE base station products are attached at Exhibit 26.

D. Infringement Of The '827 Patent

61. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '827 patent.

62. On information and belief, the Accused Products that implement the LTE wireless communications standards, including 36.212 v8.5.0, entitled "3rd Generation Partnership Project: Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Multiplexing and Channel Coding (Release 8)," 3GPP TS 36.300 v8.5.0, entitled "3rd Generation Partnership Project: Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2 (Release 8)," and 36.321 v8.5.0, entitled "3rd Generation Partnership Project: Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Medium Access Control (MAC) protocol specification (Release 8)" promulgated by 3GPP infringe at least claims 1-8 of the '827 patent. *See* Exhibits 17, 19, 20. On information and belief, Respondents directly infringe at least claims 1-8 of the '827 patent by making, using, selling, offering for sale within the United States and/or importing into the United States, Accused Products that implement the LTE wireless communications standards, including 36.212 v8.5.0, 3GPP TS 36.300 v8.5.0, and 36.321 v8.5.0. Exemplary Accused Products include the RBS 6000 series base stations. *See* Exhibit 22.

63. On information and belief, Respondents actively induce others, including LTE network service providers who deploy the Accused Products in their LTE networks, to commit direct infringement of at least claims 1-8 of the '827 patent. On information and belief, service providers who deploy the Accused Products in their LTE networks and make routine use of the Accused Products directly infringe at least claims 1-8 of the '827 patent. On information and belief, Respondents are aware of the '827 patent or have acted with willful blindness to its existence at least through the parties' longstanding licensing negotiations, Samsung's ETSI disclosures, the specific applicability of Samsung's LTE patents to the LTE standard—a standard that Respondents adapted knowing that their products would be covered by third party patents, including Samsung's patents, and/or the filing of this Complaint. Further, on information and belief, Respondents induce service providers who deploy the Accused Products in their LTE networks, by providing at least manuals, training, guides, and/or demonstrations, to perform acts intended by Respondents to cause direct infringement of at least claims 1-8 of the '827.

64. On information and belief, Respondents contribute to infringement of at least claims 1-8 of the '827 patent of others, including LTE network service providers who deploy the Accused Products in their LTE networks, by providing the Accused Products or articles therein, which are specially made or adapted for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use. On information and belief, as discussed in the prior paragraph, Respondents had knowledge or acted with willful blindness that the Accused Products or articles therein were specially made or adapted for use in an infringement of the '827 patent and not a staple article of commerce capable for substantial noninfringing use.

65. Exemplary claim charts comparing each of the '827 patent asserted independent claims 1 and 5 to Respondents' LTE base station products are attached at Exhibit 27.

E. Infringement Of The '929 Patent

66. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '929 patent.

67. On information and belief, the Accused Products containing a Doherty amplifier infringe claims 1-8 of the '929 patent. On information and belief, Respondents directly infringe claims 1-8 of the '929 patent by making, using, selling, offering for sale within the United States and/or importing into the United States, Accused Products that contain a Doherty Amplifier. Exemplary Accused Products include the RBS 6000 series base stations. *See* Confidential Exhibit 23.

68. Additionally, on information and belief, service providers who deploy the Accused Products in their LTE networks and make routine use of Accused Products infringe claims 1-8 of the '929 patent. On information and belief, Respondents are aware of the '929 patent at least through the filing of this Complaint. Further, on information and belief, Respondents knowingly induce users of Accused Products to infringe claims 1-8 of the '929 patent. On information and belief, Respondents contribute to infringement of claims 1-8 of the '929 patent because Respondents know that Accused Products containing a Doherty amplifier are specially made for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use.

69. Exemplary claim charts comparing each of the '929 patent asserted independent claims 1 and 5 to Respondents' RBS 6000 products are attached at Exhibit 28. *See also* Confidential Exhibit 23.

F. Infringement Of The '813 Patent

70. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '813 patent.

71. On information and belief, the Accused Products containing an integrated circuit device having active regions with expanded effective widths infringe at least claims 1-3, 5-12, and 14-23 of the '813 patent. On information and belief, Respondents directly infringe at least claims 1-3, 5-12, and 14-23 of the '813 patent by making, using, selling, offering for sale within the United States and/or importing into the United States, Accused Products that contain an integrated circuit device having active regions with expanded effective widths. Exemplary Accused Products include the RBS 6000 series base stations. *See* Exhibit 22.

72. Exemplary claim charts comparing each of the '813 patent asserted independent claims 1, 5, 11, and 19 to Respondents' RBS 6000 products are attached at Exhibit 29. *See also* Exhibit 70.

G. Infringement Of The '682 Patent

73. On information and belief, Respondents import, sell for importation, and/or sell after importation into the United States, Accused Products that infringe the '682 patent.

74. On information and belief, the Accused Products containing a microprocessor module with integrated voltage regulators infringe at least claims 1, 2, 4, and 8 of the '682 patent. On information and belief, Respondents directly infringe at least claims 1, 2, 4, and 8 of the '682 patent by making, using, selling, offering for sale within the United States and/or importing into the United States, Accused Products that contain a microprocessor module with integrated voltage regulators. Exemplary Accused Products include the RBS 6000 series base stations. *See* Exhibit 22.

75. Additionally, on information and belief, service providers who deploy the Accused Products in their LTE networks and make routine use of the Accused Products infringe at least claims 1, 2, 4, and 8 of the '682 patent. On information and belief, Respondents are aware of the '682 patent at least through the filing of this Complaint. Further, on information and belief, Respondents knowingly induce users of the Accused Products to infringe at least claims 1, 2, 4, and 8 of the '682 patent. On information and belief, Respondents contribute to infringement of at least claims 1, 2, 4, and 8 of the '682 patent because Respondents know that the Accused Products containing a microprocessor module with integrated voltage regulators are made for use in an infringement of these claims and are not staple articles of commerce suitable for substantial noninfringing use.

76. An exemplary claim chart comparing the '682 patent's asserted independent claim 1 to Respondents' RBS 6000 products is attached at Exhibit 30. *See also* Exhibits 63-65, 70.

VII. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

77. On information and belief, Respondents, either themselves or through subsidiaries or third parties acting on behalf of Respondents, are engaged in the manufacture, importation, sale for importation, offer for sale after importation, sale and/or use after importation into the United States of infringing wireless communications equipment and articles therein. On information and belief, the Accused Products are manufactured abroad and imported for sale into the United States.

78. Upon information and belief, Ericsson has signed contracts with U.S. cellular services providers to install base station equipment LTE networks. *See, e.g.*, Exhibits 31, 32, 33, 34, 35, 36, 37, 38, 40, and 41. In Ericsson's 2010 Annual Report, the company stated that "Ericsson is a leading supplier of WCDMA/CDMA and LTE to Verizon, AT&T and

MetroPCS." Exhibit 42, Telefonaktiebolaget LM Ericsson 2010 FORM 20-F, at 27. In fact, as of April 2011, Ericsson stated that "[i]n North America, the world's fastest growing LTE market, we now have four LTE contracts with leading operators in the region." Exhibit 43, Press Release, Ericsson selected to build LTE network for Rogers (Apr. 28, 2011). In its 2011 Annual Report, Ericsson stated that "[t]hrough the year multiple LTE network buildouts have been initiated and launched in both the US and Canada, and Ericsson is a leading supplier to these projects." Exhibit 44, Telefonaktiebolaget LM Ericsson 2011 Annual Report, at 32. Additionally, Ericsson stated that RBS 6000 series base stations "account[] for close to 100% of our radio base station deliveries." Exhibit 44, Telefonaktiebolaget LM Ericsson 2011 Annual Report, at 8. On information and belief, Ericsson's LTE base stations, such as RBS 6000 series base stations, have been and are being imported into the United States for use in engineering, testing, and constructing the Sprint, Verizon, AT&T, MetroPCS, U.S. Cellular, and Netamerica Alliance LTE networks, or portions thereof, under these contracts. Exhibit 31, Press Release, Ericsson Launches its first LTE Network in North America (Sept. 29, 2010); Exhibit 32, J. Middleton, Ericsson wins AT&T LTE deal, telecoms.com (Feb. 10, 2010); Exhibit 33, P. Weaver, Ericsson Partners with NetAmerica to roll out LTE in Rural US, telecoms.com (Mar. 25, 2011); Exhibit 34, K. Fitchard, U.S. Cellular Fast-tracks LTE network, Deploying Ericsson Gear, connectedplanetonline.com (May 6, 2011); Exhibit 35, K. Fitchard, Sprint Strikes Out on its Own with LTE, connectedplanetonline.com (October 7, 2011); Exhibit 36, Sprint News Release, Sprint Announced Network Vision - A cutting-Edge Network Evolution Plan with Partners Alcatel-Lucent, Ericsson and Samsung (Dec. 6, 2010); Exhibit 38, K. Fitchard, Ericsson: Next-gen Base Station Ready for Deployments, connectedplanetonline.com (May 8, 2009); Exhibit 40, K. Fitchard, ALU, Ericsson Continue LTE Momentum with AT&T Win,

connectedplannetonline.com (Feb. 10, 2010); Exhibit 41, K. Fitchard, Ericsson: LTE Gear Shipping in Volume, connectedplanetonline.com (Jul 23, 2010); Exhibit 42, Telefonaktiebolaget LM Ericsson 2010 FORM 20-F, at 4, 9, 27, 30, 36, 137; Exhibit 44, Telefonaktiebolaget LM Ericsson 2011 Annual Report at 8, 32.

VIII. HARMONIZED TARIFF SCHEDULE ITEM NUMBERS

79. On information and belief, the Accused Products fall within at least the classification of the Harmonized Tariff Schedule ("HTS") of the United States attached at Exhibit 45. The identified HTS numbers are intended to be for illustration only and are not exhaustive of the products accused of infringement in this Complaint. The HTS numbers are not intended to limit the scope of the Investigation.

IX. RELATED LITIGATION

80. Samsung and Ericsson had previously cross-licensed their respective patent portfolios relating to certain cellular communications protocols under an agreement entered into on December 18, 2001, and terminated on December 31, 2005, and a second agreement entered into on June 29, 2007, and terminated March 31, 2011. Samsung was previously the complainant and Ericsson a respondent in *Certain Wireless Communication Equipment, Articles Therein, and Products Containing the Same,* Inv. No. 337-TA-577, and related U.S. district court litigations. The 577 Investigation was terminated on August 29, 2007, in response to the parties' joint motion to terminate based on their confidential settlement agreement. Ericsson was previously a complainant and Samsung a respondent in *Certain Wireless Communication Equipment, Articles Therein, and Products Containing the Same,* Inv. No. 337-TA-583, and related U.S. district court litigations. The 583 Investigation was likewise terminated on August

22, 2007, in response to the parties' joint motion to terminate based on their confidential settlement agreement.

81. On November 30, 2012, Ericsson filed a complaint with the Commission, Docket No. 337-TA-2921, naming Samsung as proposed Respondents, along with related U.S. district court litigation in the U.S. District Court for the Eastern District of Texas.

82. None of the Asserted Patents have been the subject of any other foreign or domestic court or agency litigation.

X. THE DOMESTIC INDUSTRY

83. There is a domestic industry, as defined under 19 U.S.C. § 1337(a)(3)(A), (B), and (C), comprising significant investments in physical operations, employment of labor and capital, and exploitation of the Asserted Patents, or in the alternative such a domestic industry is in the process of being established.

84. Samsung makes extensive use of the inventions claimed in the Asserted Patents in numerous products, as set forth more fully in the accompanying declarations of Christina Shin, attached at Exhibit 46 and Burton Nicoson, attached at Exhibit 47. For example, Samsung has sold or sells in the United States base stations, including LTE base stations sold to MetroPCS and Sprint ("eNodeB"), that practice the '749, '081, '438, '827, '929, and '682 patent inventions. Exhibit 46 at ¶ 20. Similarly, Samsung has sold or sells in the United States mobile stations, including Craft Qwerty, Galaxy Indulge, Galaxy Attain, Galaxy Nexus, Galaxy S II Skyrocket, Samsung Stratosphere, Droid Charge, Galaxy Tab 10.1, Galaxy Tab 8.9, Galaxy Tab 7.7, Galaxy Note, Galaxy Note II, Focus 2, Aviator, Galaxy Exhilarate, Galaxy S III and the Verizon Mobile Hotspot LTE (the "Samsung LTE mobile devices"), that practice the '438, '081 and '827 patents. Exhibit 46 at ¶ 3. Moreover, Samsung's Galaxy mobile station products—including Galaxy

Indulge, Galaxy Attain, Galaxy Nexus, Galaxy S II Skyrocket, Galaxy Tab 10.1 and Galaxy Tab 8.9—practice the '813 patent. Exhibit 47 at ¶ 4; Exhibit 48, Samsung Product Specification Sheets for Exemplary Domestic Industry Products. As set forth in greater detail below, these products collectively practice each of the Asserted Patents. Samsung's investments and expenditures in its domestic industries for the Asserted Patents are continuing and on-going.

85. In addition, Samsung makes extensive use of the inventions claimed in the '813 patent by manufacturing and selling in the United States integrated circuits that are used in their 45 nm Application Processor products. Exhibit 47 at ¶ 4. These integrated circuits and application processors are manufactured at Samsung Austin Semiconductor, LLC ("SAS"), Samsung's subsidiary having substantial semiconductor fabrication facilities and operations in Austin Texas. Exhibit 47 at ¶¶ 2, 4, 5. Samsung has scheduled the manufacture of integrated circuits for it 28 nm Application Processor products to begin in 2013 at the Austin semiconductor facility. Exhibit 47 at ¶ 4. The 28 nm products also practice the inventions claimed in the '813 patent. Exhibit 47 at ¶ 4.

A. United States Investments in The Domestic Industry

86. Samsung is one of the leading LTE infrastructure providers in the United States. As a result of consistent investment in design, research, development, testing, deployment, and customer service in the United States as discussed in greater detail below, Samsung has steadily increased the installation of its base stations in additional geographic markets and for new carriers and expects that its activities and investments in the United States will only increase as its success in the networks market continues to grow. *See e.g.*, Exhibit 49, Samsung Electronics, Co., Ltd. 2011 Annual Report at 18-19; Exhibit 37, Sprint Network Vision Information Center (available at http://newsroom.sprint.com/press_kits.cfm?presskit_id=19) (last visited December 20, 2012); Confidential Exhibit 46 at ¶¶ 19-23.

87. With respect to mobile stations, Samsung was the number one provider by volume of mobile phones in the United States, with a market share of more than 25%. Exhibit 51, *Samsung Expands US Handset Lead; Android Smartphone Share Up*, Wall Street Journal (available at http://online.wsj.com/article/BT-CO-20111229-708659.html) (Dec. 29, 2011), Ex. 50, *iPhone 5 pushes Apple to No. 2 spot among U.S. phone makers*, CNET (available at http://news.cnet.com/8301-13579_3-57556783-37/iphone-5-pushes-apple-to-no-2-spot-among-u.s-phone-makers) (Dec. 3, 2012); *see also* Confidential Exhibit 46 ¶¶ 3, 6. In addition to phones, Samsung is also a world leader in the production of other wireless mobile devices, such as tablets and mobile hotspots. *See, e.g.*, Exhibit 52, *CES: Samsung Smartphone, Mobile Hotspot Join Verizon LTE 4G Family*, cnet.com (Jan. 6, 2011); Exhibit 53, Samsung Press Release, SAMSUNG Galaxy Tab™ 10.1, World's Thinnest Mobile Tablet, Makes Official Landing in U.S. (June 2, 2011); *see also* Confidential Exhibit 46 at ¶ 3.

88. Samsung has U.S.-based personnel and resources involved in every stage of its base station and mobile station products at issue, from concept through post-sale warranty and customer support. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-19, 22-32; Confidential Exhibit 47 at ¶¶ 2, 6. Samsung personnel working at Samsung facilities in the U.S., as well as Samsung's U.S. contractors, are involved in, for example, research and development, product deployment, support, engineering, marketing, warranty support, and repair and refurbishment. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-19, 22-32; Confidential Exhibit 47 at ¶¶ 2, 6.

89. Samsung manufactures integrated circuits that are used in their 45 nm Application Processor products at Samsung Austin Semiconductor, LLC ("SAS"), its U.S. subsidiary located in Austin, Texas. Confidential Exhibit 47 at ¶¶ 4-5. These products all practice the inventions claimed in the '813 patent. Confidential Exhibit 47 at ¶¶ 4. The SAS facility is a 1.6 million

square foot building, and is one of the largest single semiconductor facilities in the United States. Confidential Exhibit 47 at ¶ 5. Samsung has been manufacturing the 45 nm products employing the '813 patent since May 2011, and has made substantial investments in engineers and other personnel responsible for the design, development, and manufacture of the products. Confidential Exhibit 47 at ¶¶ 2, 5-6. In 2013, Samsung is scheduled to start manufacturing the 28 nm Application Processor products practicing the '813 invention at the SAS facility. Exhibit 69, Major Semiconductor Investment and R&D Center Expansion to Continue at Samsung's Austin Facility, http://www.bloomberg.com/article/2012-12-13/a4uM_.JrXLTc.html (Dec. 13, 2012); Confidential Exhibit 47 at ¶ 4. A substantial number of SAS employees have been dedicated to the design and development of the 28 nm products. Confidential Exhibit 47 at ¶ 6. The 28 nm products also practice the '813 patent.

90. As set forth below, Samsung's comprehensive approach to U.S.-based development and support for all of its wireless products has required significant expenditures for plant and equipment, labor and capital, and other investments. Samsung's domestic expenditures extend to each U.S. product practicing one or more of the Asserted Patents. Additional confidential business information regarding Samsung's investments in plant, equipment, labor, and research and development related to products that incorporate the technology of the Asserted Patents is set forth in the Declaration of Christina Shin, Samsung Telecommunications America, LLC's Senior Manager, Accounting, attached as Confidential Exhibit 46, and in the Declaration of Burton Nicoson, Samsung Austin Semiconductor, LLC's Vice President of Fab Engineering and General Management, attached as Confidential Exhibit 47.

91. Samsung has made significant investment in plant and equipment with respect to the Samsung products that practice the Asserted Patents. For example, Samsung's 45 nm

Application Processor products, which practice the '813 patent, are manufactured at its 1.6 million square foot semiconductor facility located in Austin, TX. Confidential Exhibit 47 at ¶¶ 2, 4-5. Samsung is currently in the process investing $4 billion in its Austin, Texas, facility to upgrade portions of its Austin facility to manufacture 28 nm Application Processor products, which will practice the 813 patent, at its Austin facility. Exhibit 69, Major Semiconductor Investment and R&D Center Expansion to Continue at Samsung's Austin Facility, http://www.bloomberg.com/article/2012-12-13/a4uM_.JrXLTc.html (Dec. 13, 2012). Samsung's Austin facility now employs 2500 direct employees and 2500 indirect contract employees. *Id.* Samsung's investment in its 28 nm Application Processor product fabrication facilities in Austin will bring Samsung's total investment in Texas to over $15 billion when completed. *Id.*

92. Moreover, STA's U.S. headquarters are located in Richardson, TX. *See* Confidential Exhibit 46 at ¶ 4. As of August 2011, Samsung owned or rented facilities for manufacturing, research and development, engineering, testing, assembly, warranty support, customer service, repair and corporate functions in Austin, TX, Richardson, TX, Frisco, TX, Coppell, TX, Plano, TX, Herndon, VA, San Jose, CA, El Segundo, CA, Washington, DC, Ridgefield, NJ, Overland Park, KS, Atlanta, GA, Bridgewater, NJ, and Bellevue, WA. *See* Confidential Exhibit 46 at ¶¶ 4-5, 9, 12, 14-19, 22-27, 32. Substantial research, development, design, engineering, and testing of the Samsung products that practice the Asserted Patents was done by Samsung employees using or working within these Samsung facilities in the United States. *See* Confidential Exhibit 46 at ¶¶ 4-5, 9, 12, 14-19, 22-27, 32.

93. Samsung has been and is engaged in a significant employment of labor with respect to the Samsung products that practice the Asserted Patents. Samsung has an extensive

staff of full-time and part-time employees, in addition to temporary equivalent employees and contractors, at its U.S. facilities. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-8, 10-18, 22-32; Confidential Exhibit 47 at ¶¶ 2, 6. Many of Samsung's key employees are located at its headquarters in Richardson, Texas, its research facility in San Jose, California, and its semiconductor facility in Austin, Texas, while other offices are near Samsung's major customers to facilitate interactions. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-8, 10-18, 22-32; Confidential Exhibit 47 at ¶ 6. Substantial research, development, design, engineering, and testing of the Samsung products that practice the Asserted Patents was done by Samsung employees, as well as Samsung contractors, working within the United States. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-8, 10-18, 22-32; Confidential Exhibit 47 at ¶ 6.

94. Samsung has made substantial investments in the Samsung products that practice the Asserted Patents, including by way of example investments in engineering, research, and development.

95. With respect to base stations, Samsung is one of the world leaders in 4G, played a leading role in developing 4G standard technical specifications, and has partnered with various operators for LTE businesses. Exhibit 54, Press Release, Samsung Smart LTE Solution Promises More Intelligent 4G Service Offering (Mar. 21, 2011). For example, in September 2010, Samsung introduced the first commercial LTE systems, including its LTE macro base station, and handsets in the United States in partnership with MetroPCS. Exhibit 55, Press Release, SAMSUNG Showcases 4G Total Solution at 4G World 2010, Meeting Demand for exploring Mobile Data Traffic (Oct. 19, 2010); Exhibit 49, Samsung Electronics, Co., Ltd. 2011 Annual Report, at 18-19; Confidential Exhibit 46 at ¶ 21. As another example, Samsung and Sprint are collaborating to deploy a 4G network using LTE technology in the United States and

have widely deployed that network. *See* Exhibit, 37, Sprint Newsroom: Sprint Network Vision Information Center; Exhibit 39, Sprint Newsroom: Powerful Yet Affordable LTE Android Smartphone, Samsung Galaxy Victory 4G LTE from Sprint, http://newsroom.sprint.com/article_display.cfm?article_id=2387 (Sept. 13, 2012); Confidential Exhibit 46 at ¶¶ 19, 22. In yet another example, Samsung is conducting field trials in the United States for Verizon and US Cellular for LTE-compatible picocell base stations. Confidential Exhibit 46 at ¶ 23.

96. Samsung invests substantially in research and development for the technology claimed by these patents. Much of the research and development covered by these investments takes place in the United States. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-12, 14-15, 19, 22-25; Confidential Exhibit 47 at ¶¶ 2, 6. In particular, Samsung has made substantial investments in its headquarters in Richardson, Texas, its research facility in San Jose, California, and its engineering team in Bridgewater, New Jersey, as well as the employment of substantial engineering staff and the necessary equipment to support them. *See* Confidential Exhibit 46 at ¶¶ 4-5, 9-12, 14-15, 19, 22-25. Samsung invests in U.S.-based personnel who provide product design, research and development, and engineering to help design a product that will work on the U.S. market. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-8, 10-18, 22-32; Confidential Exhibit 47 at ¶¶ 2, 6. As only one such example, Samsung engineers and other personnel located in the United States are engaged in the design, development, commercialization, and support for Samsung's base station and mobile station products, as well as the design, development, and manufacture of Samsung's semiconductor products. *See* Confidential Exhibit 46 at ¶¶ 4-5, 7-12, 14-15, 19, 22-24, 27-31; Confidential Exhibit 47 at ¶ 2, 4-6.

97. Samsung further invests in U.S.-based personnel who provide technical support, warranty service, and repair to Samsung customers in the U.S. who have purchased Samsung's base stations and mobile communication devices. *See* Confidential Exhibit 46 at ¶¶ 4, 7, 17, 22, 24, 32. Samsung expects that these domestic design, development, commercialization and support activities will increase because of the increasing popularity of its base stations and mobile communication devices in the United States. *See* Confidential Exhibit 46 at ¶¶ 4, 10, 17, 19, 24.

B. Samsung's Practice of the Asserted Patents

98. As noted above, Samsung makes extensive use of the Asserted Patents in numerous different products. The allocations of R&D expenses and related items for these products are captured in the accompanying Confidential Declarations of Christina Shin and Burton Nicoson (Confidential Exhibits 46 and 47). Specific examples of use are described in the above section and charted in associated exhibits identified below.

99. The Samsung eNodeB practices claims 1-13 of the '749 patent. An exemplary claim chart comparing the Samsung eNodeB to a representative claim of the '749 patent is attached as Exhibit 56.

100. The Samsung eNodeB practices claims 1, 4, 9, and 12 of the '081 patent and the Samsung LTE mobile devices practice claims 5, 8, 13, and 16 of the '081 patent. An exemplary claim chart comparing the Samsung eNodeB or the Samsung LTE mobile devices to representative claims of the '081 patent is attached at Exhibit 57.

101. The Samsung eNodeB practices claims 1-14 of the '438 patent and the Samsung LTE mobile devices practice claims 15-28 of the '438 patent. An exemplary claim chart comparing the Samsung eNodeB or Samsung LTE mobile devices to representative claims of the '438 patent is attached as Exhibit 58.

102. The Samsung eNodeB practices claims 1-8 of the '827 patent and the Samsung LTE mobile devices practice claims 9-14 of the '827 patent. An exemplary claim chart comparing Samsung eNodeB or Samsung LTE mobile devices to representative claims of the '827 patent is attached as Exhibit 59.

103. The Samsung LTE base stations sold to MetroPCS contain the eNodeB LPAP-01A Power Amplifier, which practices claims 1-8 of the '929 patent. An exemplary claim chart comparing the Samsung eNodeB LPAP-01A Power Amplifier to a representative claim of the '929 patent is attached as Confidential Exhibit 60.

104. The Samsung 45 nm and 28 nm Application Processors practice claims 1-3, 5-12, and 14-23 of the '813 patent. An exemplary claim chart comparing the 45 nm and 28 nm Application Processor products to a representative claim of the '813 patent is attached as Exhibit 61.

105. The Samsung LTE base stations sold to MetroPCS and Sprint contain the Samsung DU L9CA-B4T-ZL2005 Channel board, which practices claims 1, 2, 4, and 8 of the '682 patent. An exemplary claim chart comparing the Samsung DU L9CA-B4T-ZL2005 Channel board to a representative claim of the '682 patent is attached as Exhibit 62. *See also* Exhibits 66-68.

XI. RELIEF REQUESTED

106. WHEREFORE, by reason of the foregoing, Complainants respectfully request that the United States International Trade Commission:

a) Institute an immediate investigation, pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(a)(1)(B)(i) and (ii), with respect to violations of Section 337 based upon the importation, sale for importation, and sale after importation, into the

United States of Respondents' certain wireless communications equipment, articles therein, and components thereof made on behalf of Respondents, that infringe one or more asserted claims of Complainants' '749, '081, '438, '827, '929, '813, and '682 patents;

b) Schedule and conduct a hearing pursuant to 19 U.S.C. § 1337 for the purposes of (i) receiving evidence and hearing argument concerning whether there has been a violation of 19 U.S.C. § 1337, and (ii) following the hearing, determining that there has been a violation of 19 U.S.C. § 1337;

c) Issue a permanent exclusion order, pursuant to 19 U.S.C. § 1337(d)(1), barring from entry into the United States all certain wireless communications equipment, articles therein, and components thereof made by or on behalf of Respondents, that infringe one or more asserted claims of Complainants' '749, '081, '438, '827, '929, '813, and '682 patents;

d) Issue a permanent cease and desist order, pursuant to 19 U.S.C. § 1337(f), prohibiting Respondents, and others acting on their behalf, from importing, marketing, advertising, demonstrating, warehousing inventory for distribution, distributing, offering for sale, selling, licensing, using, or transferring outside the United States for sale in the United States any wireless communications devices, articles therein, and components thereof, that infringe one or more asserted claims of Complainants' '749, '081, '438, '827, '929, '813, and '682 patents;

e) Impose a bond, pursuant to 19 U.S.C. § 1337(j), upon importation of any wireless communications devices, articles therein, and components thereof, that infringe one or more asserted claims of Complainants' '749, '081, '438, '827, '929, '813, and '682 patents during any Presidential Review; and

f) Grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Dated: December 21, 2012

Respectfully submitted,

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