UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZTE (USA) Inc., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc.,

Petitioner

v.

Evolved Wireless LLC,

Patent Owner

PETITIONERS' EXHIBIT LIST

Case No. IPR2016-01342

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Patent Trial and Appeal Board U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450



PETITIONERS' EXHIBIT LIST

| Exhibit No. | Short Name | Description |
|-------------|------------------|--|
| 1001 | 481 Patent | U.S. Patent No. 8,218,481 |
| 1002 | Panasonic 700 | "RACH preamble evaluation in E-UTRA uplink," 3GPP Tdoc R1-060700, Panasonic, TSG-RAN WG1 Meeting #44, Denver, USA, February 13-17, 2006 |
| 1003 | Panasonic 114 | "Random access design for E-UTRA uplink," 3GPP Tdoc R1-061114, Panasonic, TSG-RAN WG1 Meeting #45, Shanghai, China, May 8-12, 2006 |
| 1004 | Chu | "Polyphase Codes With Good Periodic Correlation Properties," D.C. Chu, <i>IEEE</i> <i>Transactions on Information Theory</i> , pp. 531- 32, July 1972 |
| 1005 | 481 File History | File History of U.S. Patent Application No. 12/303,947, which issued as the 481 Patent |
| 1006 | Huawei 797 | "RACH design for E-UTRA," 3GPP Tdoc R1-060797, Huawei, TSG-RAN WG1 Meeting #44bis, Athens, Greece, March 27-31, 2006 |
| 1007 | Samsung 028 | U.S. Patent No. US 7,702,028 B2, originally assigned to Samsung Electronics Co., Ltd. |
| 1008 | Motorola/TI 893 | "Proposal for RACH Preambles," 3GPP Tdoc TSGR1#6(99)893, Motorola and Texas Instruments, TSG-RAN WG1 Meeting #6, Espoo, Finland, July 13-16, 1999 |



| Exhibit No. | Short Name | Description |
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| 1009 | TI 058 | "RACH Preamble Design," 3GPP Tdoc R1- 051058, Texas Instruments, TSG-RAN WG1 Meeting #42bis, San Diego, USA, October 10- 14, 2005 |
| 1010 | Motorola 884 | "Random Access Sequence Design," 3GPP Tdoc R1-060884, Motorola, TSG-RAN WG1 Meeting #44-bis, Athens, Greece, March 24-26, 2006 |
| 1011 | Nortel 908 | "On the performances of LTE RACH," 3GPP Tdoc R1-060908, Nortel Networks, TSG-RAN WG1 Meeting #44-bis, Athens, Greece, March 27-31, 2006 |
| 1012 | TI 867 | "A new preamble shape for the Random Access preamble in E-UTRA," 3GPP Tdoc R1-060867, Texas Instruments, TSG-RAN WG1 Meeting #44-bis, Athens, Greece, March 27-31, 2006 |
| 1013 | NTT/NEC 992 | "Investigations on Random Access Channel Structure for E-UTRA Uplink," 3GPP Tdoc R1-060992, NTT DoCoMo and NEC, TSG- RAN WG1 Meeting #44bis, Athens, Greece, March 27-31, 2006 |
| 1014 | Min Decl. | Declaration of Paul S. Min, Ph.D |
| 1015 | Zhisong Decl. | Declaration of Zuo Zhisong |
| 1016 | Butler Aff. | Affidavit of Christopher Butler |
| 1017 | 3GPP FAQs | Printout of 3GPP FAQs, available at http://www.3gpp.org/about-3gpp/3gpp-faqs |
| 1018 | Delegates Corner | Printout of Delegates Corner, available at http://www.3gpp.org/specifications-groups/delegates-corner |



| Exhibit No. | Short Name | Description |
|-------------|----------------------------|---|
| 1019 | 44 Docs | Printout of http://www.3gpp.org/ftp/tsg_ran/ WG1_RL1/TSGR1_44/Docs/ |
| 1020 | Motorola 595 | U.S. Patent Application Publication No. US 2007/0058595 A1 |
| 1021 | Tdoclist 44 | Printout of list of Tdocs submitted at RAN1 Meeting 44 |
| 1022 | 45 Docs | Printout of http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_45/Docs/ |
| 1023 | 5/2/06 Hiramatsu E-Mail | Printout of archived version of e-mail from Katsuhiko Hiramatsu to RAN1's e-mail exploder list on May 2, 2006 |
| 1024 | Tdoclist 45 | Printout of list of Tdocs submitted at RAN1 Meeting 45 |
| 1025 | Chu Citations | Printout of IEEE Xplore Abstract (Citations) - Polyphase codes with good periodic correlation properties (Corresp.), available at http://ieeexplore.ieee.org/xpl/abstractCitations.j sp?tp=&arnumber=1054840&filter%3DAND% 28p_IS_Number%3A22664%29 |
| 1026 | LG 916 | U.S. Patent No. 7,746,916 |
| 1027 | 153 Patent | U.S. Patent No. 5,553,153 |
| 1028 | 284 Publication | U.S. Patent App. Pub. 2004/0047284 |
| 1029 | 3GPP FAQs Archive | Printout of archived version of 3GPP Frequency Asked Questions, <i>available at</i> http://web.archive.org/web/20060225053110/ht tp://www.3gpp.org/faq/faq_2005_2.htm |



| Exhibit No. | Short Name | Description |
|-------------|--------------------------|---|
| 1030 | 4/30/06 List Archives | Printout of archived version of LISTSERV Archives at LIST.ETSI.ORG, available at https://web.archive.org/web/20060430104216/h ttp://list.3gpp.org/ |
| 1031 | 44 Participant List | Printout of 3GPP Meeting Registration |
| 1032 | 45 Participant List | Printout of 3GPP Meeting Registration |
| 1033 | Dahlman | Excerpts from Dahlman, Erik. 3G Evolution: HSPA and LTE for Mobile Broadband. Amsterdam: Academic, 2008 |
| 1034 | TI 062 | "On Uplink Pilot in EUTRA SC-FDMA," 3GPP Tdoc R1-051062, Texas Instruments, TSG-RAN WG1 Ad Hoc on LTE, San Diego, USA, October 10-14, 2005 |
| 1035 | 3GPP TR 21.905 v7.0.0 | 3GPP TR 25.905 v7.0.0 (2005-09) |
| 1036 | 3GPP TR 25.814 v1.0.2 | 3GPP TR 25.814 v1.0.2 (2006-01) |
| 1037 | Ericsson 445 | "E-UTRA Random Access," 3GPP Tdoc R1- 051445, Ericsson, TSG-RAN WG1 #43, Seoul, Korea, November 7-11, 2005 |
| 1038 | Motorola 025 | "RACH Design for EUTRA," 3GPP Tdoc R1- 060025, Motorola, TSG-RAN WG1 #43, Helsinki, Finland, January 23-25, 2006 |
| 1039 | 3GPP TS 25.211 v6.7.0 | 3GPP TS 25.211 v6.7.0 (2005-12) |



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