

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

STEELHEAD LICENSING, LLC,

Plaintiff,

v.

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

Defendants.

C.A. No. _____

TRIAL BY JURY DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Steelhead Licensing, LLC (“Steelhead”), by and through its undersigned counsel, for its Complaint against LG Electronics, Inc. (hereinafter, “LGE”), LG Electronics U.S.A., Inc. (hereinafter, “LG USA”), and LG Electronics MobileComm U.S.A., Inc. (hereinafter, “LG Mobile”) (collectively, the “Defendants”), alleges as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code (“U.S.C.”) to prevent and enjoin Defendants from infringing and profiting, in an illegal and unauthorized manner and without authorization and/or consent from Steelhead, from U.S. Patent No. 5,491,834 (hereinafter, the “834 Patent”) and U.S. Patent No. 5,678,185 (hereinafter, the “185 Patent”), attached hereto as Exhibits A and B, respectively, pursuant to 35 U.S.C. §271, and to recover damages, attorneys’ fees, and costs.

THE PARTIES

2. Plaintiff Steelhead is a Delaware limited liability company with its principal place of business at 222 Delaware Avenue, P.O. Box 25130, Wilmington, DE 19899.

3. Defendant LGE is a foreign corporation organized under the laws of the Republic of Korea. Its principal place of business is located at LG Twin Towers, 20 Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721, South Korea.

4. Defendant LGE is the parent corporation of Defendants LG USA and LG Mobile.

5. Defendant LG USA is a Delaware corporation with its principal place of business at 920 Sylvan Ave., Englewood Cliffs, New Jersey 07632. Defendant LG USA is a wholly-owned subsidiary of Defendant LGE. LG USA's registered agent for service of process in California is Alan K. Tse, 10101 Old Grove Road, San Diego, California 92131. Defendant LG USA's registered agent for service of process is United States Corporation Company, 2711 Centerville Road, Suite 400, Wilmington, Delaware 19808.

6. Defendant LG Mobile is a corporation organized and existing under the laws of the state of California, with its principal place of business located at 920 Sylvan Avenue, Englewood Cliffs, New Jersey 07632. LG Mobile's registered agent for service of process in California is Alan K. Tse, 10101 Old Grove Road, San Diego, California 92131. Its registered agent for service of process is national Registered Agents, Inc. of New Jersey, 100 Canal Pointe Blvd. Suite 212, Princeton, New Jersey 08540. Defendant LG Mobile is a wholly owned subsidiary of Defendant LGE.

7. Defendants are in the business of making, using, selling, offering for sale and/or importing mobile communication devices including, but not limited to, mobile phones.

JURISDICTION AND VENUE

8. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§1331 and 1338(a) because the action arises under the patent laws of the United States, 35 U.S.C. §1 et seq.

9. This Court has personal jurisdiction over Defendants by virtue of its systematic and continuous contacts with this jurisdiction, as well as because of the injury to Steelhead and the cause of action Steelhead has raised, as alleged herein.

10. Defendants are subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Delaware Long-Arm Statute, *Del Code. Ann. Tit. 3, §3104*, due to at least their substantial business in this forum, including: (i) at least a portion of the infringement alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Delaware.

11. Defendants have conducted and does conduct business within the state of Delaware, directly or through intermediaries, resellers, agents, or offer for sale, sell, advertise products in Delaware that infringe the '834 and '185 Patents.

12. In addition to Defendants' continuously and systematically conducting business in Delaware, the causes of action against Defendants are connected (but not limited) to Defendants' purposeful acts committed in the state of Delaware, including Defendants' making, using, importing, offering for sale, or selling products which include features that fall within the scope of at least one claim of the '834 and '185 Patents.

13. Venue lies in this District under 28 U.S.C. §§1391 and 1400(b) because, among other reasons, Defendants are subject to personal jurisdiction in this District, and have committed

and continue to commit acts of patent infringement in this District. For example, Defendants have used, sold, offered for sale, and/or imported infringing products in this District.

JOINDER

14. Defendants are properly joined under 35 U.S.C. §299(a)(1) because a right to relief is asserted against the parties jointly, severally, and in the alternative with respect to the same transactions, occurrences, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, and/or selling the same accused products. Specifically, as alleged in detail below, Defendants are alleged to infringe the ‘834 and ‘185 Patents with respect to the same mobile devices including, but not limited to, the Spectrum 2 mobile device and LG Optimus 9.

15. Defendants are properly joined under 35 U.S.C. §299(a)(2). Questions of fact will arise that are common to both defendants, including for example, whether Defendants’ products have features that meet the features of one or more claims of the ‘834 and ‘185 Patents, and what reasonable royalty will be adequate to compensate the owner of the ‘834 and ‘185 Patents for its infringement.

16. Defendant LG Mobile imports mobile communication devices manufactured by Defendant LGE into the United States. Defendant LG USA oversees the operation of Defendant LG Mobile in the United States. All three Defendants commercialize the same mobile devices that infringe on the ‘834 and ‘185 Patents.

17. Defendants use, make, sell, offer for sale and/or import mobile devices that, when used, infringe one or more claims of the ‘834 and ‘185 Patents.

18. At least one right to relief is asserted against these parties jointly, severally, or in the alternative with respect to or arising out of the same transaction, occurrence, or series of

transactions or occurrences relating to the making, using, importing into the United States, offering for sale, or selling of the same accused product and/or process.

FACTUAL ALLEGATIONS

The '834 Patent

19. On February 13, 1996, the United States Patent and Trademark Office (“USPTO”) duly and legally issued the ‘834 Patent, entitled “Mobile Radio Handover Initiation Determination” after a full and fair examination. Steelhead is presently the owner of the patent and possesses all right, title and interest in and to the ‘834 Patent. Steelhead owns all rights of recovery under the ‘834 Patent, including the exclusive right to recover for past infringement. The ‘834 Patent is valid and enforceable.

20. The ‘834 Patent contains eight independent claims and twelve dependent claims. Defendants commercialize, *inter alia*, methods that perform all the steps recited in one or more claim of the ‘834 Patent. Defendants make, use, import, and sell or offer for sale telecommunication products, including mobile devices, which encompass one or more of the features recited and which perform all the steps comprised in the patented claims.

21. The invention claimed in the ‘834 Patent includes a process for determining the manner in which handover is performed in a mobile radio network including a plurality of cells, where each cell is associated with a base station supporting communication with a mobile device.

22. The patented process includes the steps of monitoring the quality of a signal as a function of time respectively transmitted between candidate base stations and the mobile unit. The process further includes producing an indication of either the rise or fall of the signal’s quality as a function of time. Handover from a serving base station supporting communication

with the mobile unit to another base station is initiated based on the rise or fall in the signal's quality.

23. For example, manufacturers of mobile telecommunications devices rely on the patented process to handle service associated with their mobile devices. Specifically, Defendants rely on the patented process to determine the manner in which communication service associated with a mobile device is to be handed over from one cell to another.

The '185 Patent

24. On October 14, 1997, the United States Patent and Trademark Office ("USPTO") duly and legally issued the '185 Patent, entitled "Mobile Radio Handover Determination Based on Rise/Fall of Signal Quality as a Function of Time" after a full and fair examination. Steelhead is presently the owner of the patent and possesses all right, title and interest in and to the '185 Patent. Steelhead owns all rights of recovery under the '185 Patent, including the exclusive right to recover for past infringement. The '185 Patent is valid and enforceable.

25. The '185 Patent contains four independent claims and fourteen dependent claims. Defendants commercialize, *inter alia*, mobile communications systems which incorporate the means and perform the functions recited in one or more claim of the '185 Patent. Therefore, Defendants make, use, import, and sell or offer for sale telecommunication products, including mobile communication devices, which perform the functions recited in one or more of the patented claims.

26. The '185 Patent claims a handover determination system for a mobile network including multiple cells, in which each cell is associated with a base station for supporting communication with a mobile unit. The system includes means for monitoring the quality of a signal respectively transmitted between each of a plurality of candidate base stations and the

mobile unit, as well as means for producing an indication of the rise or fall in quality as a function of time. The patented system also includes control means for initiating a handover from a serving base station supporting communication with the mobile unit to another base station. The initiation occurs based on the size of the areas of coverage being served by the base stations, relative to the speed of the mobile unit, as determined by the rise/fall as a function of time in the quality of the signals associated with the candidate base stations being monitored.

27. Manufacturers of mobile telecommunications devices rely on the patented system to provide the means that perform the functionality enabled in their mobile devices. Specifically, Defendants rely on the patented system to determine the manner in which communication service associated with a mobile device is to be handed over from one cell to another.

DEFENDANTS' PRODUCTS

28. Defendants commercialize mobile devices which support both Universal Mobile Telecommunications System (hereinafter, "UMTS") and Long Term Evolution (hereinafter, "LTE") standards. These products will be hereinafter identified as Defendants' UMTS/LTE Products.

29. In addition, Defendants also commercialize mobile devices which support both 3G Code-Division Multiple Access (hereinafter, CDMA) and Long Term Evolution (hereinafter, "LTE") standards. These products will be hereinafter identified as Defendants' CDMA/LTE Products.

30. UMTS is a third-generation (3G) of mobile phone technology for radio systems. It is an integrated solution for mobile voice and data capabilities with wide area coverage. It allows users to send and/or receive text, voice, video, and multimedia files at theoretical transfer rates of up to 2Mbps.

31. 3G CDMA (or CDMA2000) is a leading mobile phone technology. CDMA technology operates by transmitting multiple digital signals simultaneously over the same carrier frequency (i.e., the same channel), thus optimizing the use of available bandwidth. In CDMA implementations, every user is allocated the entire spectrum all of the time, and connections are uniquely identified using codes.

32. LTE is a fourth-generation (4G) wireless broadband technology. LTE provides high-speed communication and data transfer with increased bandwidth capacity. It derives from the GSM/UMTS technologies and is faster than 3G. Unlike earlier mobile technologies, all communication in LTE devices is handled as data.

33. In mobile telephony, it is necessary to maintain an established user connection even if the user is changing locations, or the radio access environment surrounding the user is changing, while a connection is still active. “Handover” refers to the transfer of user connection from one access point to another. For both Defendants’ CDMA/LTE Products and Defendants’ UMTS/LTE Products, Defendants rely on the patented process to determine mobile device communication conditions for initiating a handover from one cell to another.

DEFENDANTS’ INFRINGEMENT

34. Defendants practice patented mobile telecommunications methods with respect to certain telecommunications devices commercialized in this judicial district. Also within this judicial District, Defendants make, use, sell, offers to sell and/or import mobile telecommunications devices which include the means for performing the handover determination function enabled by the patented system.

DEFENDANTS' UMTS/LTE PRODUCTS

35. Defendants' UMTS/LTE Products include, but are not limited to, the LG Optimus 9 mobile phone.

36. Each Defendants' UMTS/LTE Product forms a mobile terminal that can be used on a mobile radio network such as that provided by a telecommunications company or a carrier. This network is formed by a plurality of cells.

37. Each Defendants' UMTS/LTE Product includes a processor and a memory device with instructions stored therein. Upon execution, these instructions perform a handover determination method in which each of Defendants' UMTS/LTE Products searches for a better cell pursuant to the cell reselection process stated in the UMTS and LTE standards.

38. Each Defendants' UMTS/LTE Product complies with the UMTS and LTE standards. As such, when communicating, it maintains an active list of base stations with which the Defendants' UMTS/LTE Product has sufficient signal strength to communicate. The active list of base stations is used by each Defendants' UMTS/LTE Product itself to initiate cell reselection.

39. Specifically, when Defendants' UMTS/LTE Product is used in a mobile radio network, it receives signals from base stations within range. In accordance with UMTS and LTE standards, Defendants' UMTS/LTE Products periodically measure the signals received from base stations in the vicinity for handover determination purposes. Then, each Defendants' UMTS/LTE Product generates an indication of the quality of the received signal. Each device produces a ranking of available base stations based on a set of measured criteria, including quality of each received signal.

40. Pursuant to the UMTS standard, Defendants' UMTS/LTE Product initiates the switch to a new cell (the handover of communication) based on how the new cell is ranked and only if the new cell is ranked higher than the cell currently handling the communication for a given period of time. If the ranking of a potential new cell falls, such drop is an indication of a fall in the measured criteria (e.g., quality).

41. Under the UMTS standard, when Defendants' UMTS/LTE Product identifies a better candidate cell, it sends a message to the base station currently servicing the communication. Such message indicates that a switch should occur, such that communication is handed over to the new base station. The message sent by each Defendants' UMTS/LTE Product initiates the handover of service from a current cell to a new, better cell.

42. When Defendants' UMTS/LTE Product operates under the LTE standard, the devices periodically measure the signals received from base stations in the vicinity for cell selection and reselection purposes. Then, each Defendants' UMTS/LTE Product selects a suitable cell based on idle mode measurements and cell selection criteria, including quality of the signal. When camped on a cell, Defendants' UMTS/LTE Product will regularly search for better cells according to the cell selection criteria. For example, if the ranking of the new cell rises above the ranking of the serving cell during a particular time frame, then the characteristics of the potential new cell may rise as a function of time. Conversely, if the ranking of the new cell falls below the ranking of the serving cell during a particular time frame, then the characteristics of the potential new cell may fall as a function of time. Thus, the behavior of the characteristics of the potential new cell over the certain time interval produces an indication of the rise or fall of at least one measurement or criteria as a function of time. If a better cell is found, then that better cell is selected which initiates the handover of Defendants' UMTS/LTE Product from a current cell to

the better cell. The initiation of a handover is based on the fact that, for example, the new cell did not fall below the quality of the serving cell during the time frame.

43. The patented method recited in one or more claims of the '834 Patent is performed when a cell reselection is made by any Defendants' UMTS/LTE Product when it is using either the UMTS or LTE standards to communicate.

44. Defendants also implement the handover determination system a recited in one or more claims of the '185 Patent. For example, each Defendants' UMTS/LTE Product forms a mobile terminal that can be operated on a mobile radio network such as that provided by a telecommunications company or a carrier. This mobile network includes multiple cells.

45. Each Defendants' UMTS/LTE Product includes a processor and a memory device with instructions stored therein. Upon execution, these instructions perform a handover determination function causing each of Defendants' UMTS/LTE Products to search for a better cell pursuant to the cell reselection process stated in the UMTS and LTE standards. If one is found, that new cell is selected and communication is handed over.

46. The Defendants thus implement a system with means for monitoring the quality of a signal respectively transmitted between each of a plurality of candidate base stations and the mobile terminal, as well as means for producing an indication of the rise or fall in quality as a function of time. It is the Defendants' UMTS/LTE Product which provides the means to perform the functionality offered by the handover determination system.

47. Pursuant to the UMTS and/or LTE standard, each Defendants' Product provides control means for initiating a handover from a serving base station supporting communication with the mobile terminal to another base station. The initiation function enabled by the infringing means occurs based on the size of the areas of coverage being served by the base

stations, relative to the speed of the mobile terminal, as determined by the rise/fall as a function of time in the quality of the signals associated with the candidate base stations being monitored.

DEFENDANTS' CDMA/LTE PRODUCTS

48. Defendants' CDMA/LTE Products include, but are not limited to, the Spectrum 2.

49. Each Defendants' CDMA/LTE Product forms a mobile unit that can be used on a mobile radio network such as that provided by a telecommunications company or a carrier. This network is formed by a plurality of cells.

50. Each Defendants' CDMA/LTE Product includes a processor and a memory device with instructions stored therein. Upon execution, these instructions perform a handover determination method in which each of Defendants' CDMA/LTE Products searches for a better cell pursuant to the cell reselection process stated in the CDMA and LTE standards. Under CDMA standards, each Defendants' CDMA/LTE Product sends out route update messages to the serving base stations, when conditions dictate, to initiate a cell reselection to a better base station.

51. Each Defendants' CDMA/LTE Product complies with the 3G CDMA and LTE standards. As such, when communicating, it maintains an active list of base stations with which the Defendants' CDMA/LTE Product has sufficient signal strength to communicate. The active list of base stations is used by each Defendants' CDMA/LTE Product itself to initiate cell reselection.

52. Specifically, when Defendants' CDMA/LTE Product is used in a mobile radio network, it receives signals from base stations within range. In accordance with CDMA standards, each Defendants' CDMA/LTE Product maintains a set of pilot channels transmitted by each sector in the neighborhood of the serving sector in which the cell phone is used. The strength of each pilot channel is a quality of a signal from each candidate base station that is

monitored by each Defendants' CDMA/LTE Product as a function of time. The pilots are ranked in order of signal strength. The action of the drop timer in connection with monitoring the strength of the pilot channels evidence whether the strength or quality of each signal is rising or falling as a function of time. Whenever conditions indicate, each Defendants' CDMA/LTE Product initiates a handover to a better cell by sending out a route update message. The initiation of the handover is based on the fact that, for example, the signal strength of the pilot was not disabled by the action of a drop timer.

53. When using LTE standards to communicate, Defendants' CDMA/LTE Products periodically measure the signals received from base stations in the vicinity for cell selection and reselection purposes. Then, each Defendants' CDMA/LTE Product selects a suitable cell based on idle mode measurements and cell selection criteria, including but not limited to, quality of the signal. When camped on a cell, the Defendants' CDMA/LTE Product will regularly search for better cells according to the cell selection criteria. For example, if the ranking of the new cell rises above the ranking of the serving cell during a particular time frame, then the characteristics of the potential new cell may rise as a function of time. Conversely, if the ranking of the new cell falls below the ranking of the serving cell during a particular time frame, then the characteristics of the potential new cell may fall as a function of time. Thus, the behavior of the characteristics of the potential new cell over the certain time interval produces an indication of the rise or fall of at least one measurement or criteria as a function of time. If a better cell is found, then that better cell is selected which initiates the handover of Defendants' CDMA/LTE Product from a current cell to the better cell. The initiation of a handover is based on the fact that, for example, the new cell did not fall below the quality of the serving cell during the time frame.

54. The patented method recited in one or more claims of the '834 Patent is performed when a cell reselection is made by any Defendants' CDMA/LTE Product when it is using either the 3G CDMA or LTE standards to communicate.

COUNT 1
DIRECT INFRINGEMENT OF THE '834 PATENT

55. Plaintiff realleges and incorporates by reference the allegations set forth in paragraphs 1-54.

56. Defendants' UMTS/LTE and CDMA/LTE Products shall be subsequently referred to hereinafter as Defendants' Infringing Products.

57. Taken together, either partially or entirely, the features included in the Defendants' Infringing Products including, but not limited to, Spectrum 2 and LG Optimus 9, when used perform the process recited in one or more claims of the '834 Patent.

58. Defendants directly infringe one or more claims of the '834 Patent by using Defendants' Infringing Products, which perform the process defined by one or more claims of the '834 Patent. For example, without limitation, Defendants directly infringe at least claim 8 of the '834 Patent by using Defendants' Infringing Products, including use by Defendants' employees and agents, use during product development and testing processes, and use when servicing and/or repairing phones on behalf of customers.

59. By engaging in the conduct described herein, Defendants have injured Steelhead and are thus liable for infringement of the '834 Patent, pursuant to 35 U.S.C. §271.

60. Defendants have committed these acts of infringement without license or authorization.

61. To the extent that facts learned in discovery show that Defendants' infringement of the '834 Patent is or has been willful, Steelhead reserves the right to request such a finding at the time of trial.

62. As a result of Defendants' infringement of the '834 Patent, Steelhead has suffered monetary damages and is entitled to a monetary judgment in an amount adequate to compensate for Defendants' past infringement, together with interests and costs.

63. Steelhead will continue to suffer damages in the future unless Defendants' infringing activities are enjoined by this Court. As such, Steelhead is entitled to compensation for any continuing or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement.

64. Steelhead has also suffered and will continue to suffer severe and irreparable harm unless this Court issues a permanent injunction prohibiting Defendants, their officers, directors, agents, servants, employees, attorneys, affiliates, divisions, branches, parents, and those persons in active concert or participation with any of them from directly or indirectly infringing the '834 Patent.

COUNT 2
DIRECT INFRINGEMENT OF THE '185 PATENT

65. Plaintiff realleges and incorporates by reference the allegations set forth in paragraphs 1-64.

66. Taken together, either partially or entirely, the features included in the Defendants' Infringing Products including, but not limited to, Spectrum 2 and LG Optimus 9, implement the system recited in one or more claims of the '185 Patent.

67. Defendants directly infringe one or more claims of the '185 Patent by making, using, selling, offering to sell, and/or importing Defendants' Infringing Products, which provide

the means that perform the functions defined by one or more claims of the '185 Patent. For example, without limitation, Defendants directly infringe at least claim 9 of the '185 Patent by making, using, selling, offering to sell, and/or importing Defendants' Infringing Products, including use by Defendants' employees, agents, and customers, as well as by use during product development, testing, and marketing to prospective customers. Furthermore, Defendants directly infringe at least claim 9 of the '185 Patent when servicing and/or repairing phones on behalf of customers.

68. By engaging in the conduct described herein, Defendants have injured Steelhead and are thus liable for direct infringement of the '185 Patent, pursuant to 35 U.S.C. §271.

69. Defendants have committed these acts of infringement without license or authorization.

70. To the extent that facts learned in discovery show that Defendants' infringement of the '185 Patent is or has been willful, Steelhead reserves the right to request such a finding at the time of trial.

71. As a result of Defendants' infringement of the '185 Patent, Steelhead has suffered monetary damages and is entitled to a monetary judgment in an amount adequate to compensate for Defendants' past infringement, together with interests and costs.

72. Steelhead will continue to suffer damages in the future unless Defendants' infringing activities are enjoined by this Court. As such, Steelhead is entitled to compensation for any continuing or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement.

73. Steelhead has also suffered and will continue to suffer severe and irreparable harm unless this Court issues a permanent injunction prohibiting Defendants, their officers, directors,

agents, servants, employees, attorneys, affiliates, divisions, branches, parents, and those persons in active concert or participation with any of them from directly or indirectly infringing the ‘185 Patent.

DEMAND FOR JURY TRIAL

74. Steelhead demands a trial by jury of any and all causes of action.

PRAYER FOR RELIEF

Steelhead respectfully prays for the following relief:

1. That Defendants be adjudged to have infringed the ‘834 and ‘185 Patents;
2. That Defendants, their officers, directors, agents, servants, employees, attorneys, affiliates, divisions, branches, parents, and those persons in active concert or participation with any of them, be preliminarily and permanently restrained and enjoined from directly and/or indirectly infringing the ‘834 and ‘185 Patents;
3. An award of damages pursuant to 35 U.S.C. §284 sufficient to compensate Steelhead for Defendants’ past infringement and any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement, including compensatory damages;
4. An assessment of pre-judgment and post-judgment interests and costs against Defendants, together with an award of such interests and costs, in accordance with 35 U.S.C. §284;
5. That Defendants be directed to pay enhanced damages, including Steelhead’s attorneys’ fees incurred in connection with this lawsuit pursuant to 35 U.S.C. §285; and

6. That Steelhead have such other and further relief as this Court may deem just and proper.

Dated: January 4, 2013

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