

**UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA**

)	
ORLANDO COMMUNICATIONS LLC,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 6:14-cv-01625-Orl-22KRS
)	
SAMSUNG ELECTRONICS CO.,)	
LTD., SAMSUNG ELECTRONICS)	
AMERICA, INC., SAMSUNG)	
TELECOMMUNICATIONS AMERICA,)	
LLC, and T-MOBILE US, INC.,)	
)	
Defendants.)	

**AMENDED COMPLAINT FOR PATENT INFRINGEMENT AND
DEMAND FOR JURY TRIAL – INJUNCTION SOUGHT**

Plaintiff, Orlando Communications LLC (“Orlando”), complains against Defendants, Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Telecommunications America, LLC (together, “Samsung”) and T-Mobile US, Inc., (“the Carrier”) (collectively, “Defendants”).

PARTIES

1. Orlando is a Florida limited liability company with principal place of business at 2400 Dallas Parkway, Suite 200, Plano, TX 75093.
2. Samsung Electronics Co., Ltd. is a Korean corporation with its principal offices at 250, 2-ga, Taepyong-ro, Jung-gu, Seoul, 100-742, South Korea.
3. Samsung Electronics America, Inc. is a New York corporation with its principal place of business at 105 Challenger Road, Ridgefield Park, New Jersey 07660.

4. Samsung Telecommunications America, LLC is a Delaware limited liability company with its principal place of business at 1301 East Lookout Drive, Richardson, Texas 75081.

5. The Carrier is a Delaware corporation with its principal place of business at 12920 SE 38th Street, Bellevue WA 98006.

6. The Carrier provides to its subscribers mobile voice and data services (“the Carrier Services”) on its 3G and 4G wireless network (“the Carrier Network”). The Carrier Services include plans called 1GB, 3GB, 5 GB, Unlimited plans, or Simply Prepaid plans.

7. The Carrier furnishes to its subscribers Carrier Handsets that it uses to provide the Carrier Services. Carrier Handsets include certain Samsung manufactured tablets, smartphones, and other 3G or 4G voice/data mobile units that the Carrier has certified, after testing, as meeting the Carrier’s requirements to be activated on the Carrier Network.

8. The Carrier Handsets include the Galaxy Avant, Galaxy Light, Galaxy Note 3, Galaxy Note II, Galaxy S 4G, Galaxy S3, Galaxy S4, Galaxy S5, Galaxy Exhibit, Galaxy S Blaze, Galaxy S II, Galaxy S Relay, Gravity Q , LTE Mobile HotSpot Pro, Sidekick and possibly others.

9. Samsung sells, offers to sell, and imports the Carrier Handsets.

JURISDICTION

10. This action arises under the patent laws of the United States, Title 35 of the United States Code, 35 U.S.C. §§ 101, et seq. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

11. Personal jurisdiction exists over Defendants because they have responsibility for using, making available, and marketing products in this district, the use of which in this district infringes each of Orlando's patents, as described below.

12. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(b)-(c) and 1400(b).

COUNT I

Infringement of U.S. Patent No. 6,009,553

13. This Count incorporates by reference paragraphs 1-12, above.

14. Orlando owns United States patent number 6,009,553, entitled "Adaptive Error Correction for a Communication Link," ("the '553 patent"), which issued to inventors Dennis Martinez, Thomas Hengeveld, and Michael Axford on December 28, 1999. Ex. A.

15. The Carrier has infringed at least method claims 1, 2, 5, 8, and 9 of the '533 patent by performing each step of those claims.

THE CARRIER NETWORK

16. The Carrier has built and maintains the Carrier Network, which extends across the United States. T-Mobile advertises that its network can achieve more data capacity per customer than competing networks. It advertises that the T-Mobile network has America's fastest 4G LTE network, with more data capacity than their customers. It markets its network as covering 96% of Americans, coast to coast.

17. To maintain the level of performance that it advertises and to compete effectively, the Carrier incorporates in its network considerable technology, and take steps to assure that all components of its Carrier Network meet required standards.

18. In constructing its Carrier Network, the Carrier distributes Carrier Handsets to its subscribers (end users). Before allowing a model of handset to be distributed as a Carrier Handset, certified to be activated and used as part of the Carrier Network, the Carrier specifies requirements that those handset must meet, and subjects samples to testing to confirm those handsets have the required capability.

19. The Carrier provides base stations as part of the Carrier Network, registers its Carrier Handsets in the Carrier Network, and operates both the base stations and the Carrier Handsets, to cause data to be sent from the base stations to its Carrier Handsets.

20. In the Carrier Network, Carrier Handsets communicate wirelessly with a base station, which the Carrier operates. For the Carrier Network to operate effectively, and to meet diverse requirements of security, network speed, network reliability, and spectrum efficiency, among many others, the Carrier must assure that the Carrier Handsets include software compatible with software on the base station, and that the software on the Carrier Handsets enables the Carrier to itself operate and control certain essential functions of the Carrier Handsets, by sending signaling messages to the Carrier Handsets to perform those functions. Without the ability to itself operate and control the Carrier Handsets to perform those essential functions, the Carrier would not be able to maintain its Carrier Network.

21. The Carrier has some control over the programming of the software on the Carrier Handsets, as it requires its subscribers, as a condition of using its Carrier Network, to allow the Carrier to “remotely change software, systems, applications, features or programing on [consumer’s] Device without notice.” Ex. B.

22. The Carrier provides for its Carrier Handsets Subscriber Identity Module (SIM) cards it has uniquely configured for use in the Carrier Network. The Carrier configures its

Carrier Handsets to work within and become part of its Carrier Network, when within range of a cell of its Carrier Network.

23. The Carrier has designed its Carrier Network so that the Carrier, and only the Carrier, maintains complete control over many functions that the Carrier Handsets perform. *See* Ex. C (“Each eNB is a base station that *controls* the mobile in one or more cells....The eNB *controls* the low-level operation of all its mobiles, by sending them signalling messages....”) (Emphasis added.)

INFRINGEMENT

24. The Carrier infringes by performing some steps on the Carrier’s own base station, and performing the other steps by using its base station to send signaling messages to operate and control the functions of its Carrier Handsets that perform those steps (“the handset steps”).

25. The Carrier, and only the Carrier, controls the performance of the handset steps. The end user of the handset does not control that performance. The end user will not even be aware of the claimed steps, or the performance of those steps. Even if the end-user were made aware that the handset steps are performed, he would be powerless to prevent that performance in his use of the handset. The end user cannot program or reprogram these functions of the handset, nor can the end user, when using the handset, prevent the program on the handset from performing those functions.

26. The Carrier thus infringes because it performs all steps of the claimed methods, including through its exclusive control of the performance of the handset steps. No other entity, including the end user, has any control over the performance of any of the steps.

27. The Carrier does not itself design or build the handset, although it does require this functionality. Rather, the Carrier's performance of the handset steps arises from the Carrier's sending signaling messages to the handset, which messages cause that performance.

28. The Carrier also infringes when its employees or other agents use the Carrier Handsets to perform services on the Carrier's behalf.

29. The Carrier also infringes when it performs some steps on its base stations and provides to its subscribers Carrier Handsets programmed to automatically perform the handset steps.

INFRINGING METHOD OF OPERATION

30. Each Carrier Handset has a chipset that implements standard functionality, in the form of hardware, firmware, and software on the chipset. Samsung either produces the chipset itself, or obtains it from a vendor.

31. The standard functionality complies with the LTE and UMTS/HSPA standards, among other things, causing a downlink (base station to Carrier Handset) transfer of data.

32. The Carrier Handsets use LTE when operating in a 4G mode in the Carrier Network, and when the base station is sending data to the Carrier Handset in the downlink direction. In doing so, the Carrier's base station controls certain functions of its Carrier Handsets, without any control by, or even involvement of, the subscriber, and causes the Carrier Handsets to perform those functions.

33. The Carrier Handsets use UMTS/HSPA when operating in a 3G mode in the Carrier Network, and when the base station is sending data to the Carrier Handset in the downlink direction. In doing so, the Carrier's base station controls certain functions of its

Carrier Handsets, without control by, or even involvement of, the subscriber, and causes the Carrier Handsets to perform those functions.

34. In 4G mode, in a downlink data transmission from the base station to the Carrier Handsets in a 4G mode, base stations transmit pilot signals and the Carrier Handsets measure those signals. In the 4G mode, an error correction encoder is determined as a function of the measured signal – by changing the code rate. With LTE, the encoder is a convolutional encoder. Per the LTE standard, each code block is individually turbo encoded.

35. In the 3G mode, per the UMTS/HSPA standard, the Carrier's base stations transmit pilot signals and the Carrier Handsets measure those signals. The Carrier Handsets measure the pilot signals, and determine CQI based thereon. An error correction encoder is determined as a function of the measured signal – by changing the code rate. With UMTS/HSPA, data is encoded, transmitted, and then decoded according to the determined error correction.

36. The puncturing pattern is based on the Transport Block Size (TBS), the number of HS-DSCH codes, and the modulation order. These parameters determine how much puncturing will be needed at the output of the rate-1/3 encoder to fit TBS bits onto N codes using an M-order modulation, resulting in a different code rate. Therefore, for a given number of codes and modulation order, the different rows of the CQI table will result in different code rates.

37. The Carrier Handsets measure signal-to-noise ratio (SNR) or its equivalent to determine CQI. They also measure absolute signal power, or its equivalent.

38. The above is one, but not the only, example of the infringing method of operation.

39. The Carrier thus has liability for infringement of the '553 patent under 35 U.S.C. §271(a).

40. In addition, each end user who operates one of the above listed Carrier Handsets according to the Defendants' instructions necessarily causes the Carrier Handset and other devices in the Carrier Network to perform all the steps of at least claims 1, 2, 5, 8, and 9 of the '553 patent. Those devices automatically run software Defendants have installed; the running of that software infringes the '553 patent. Defendants thus have infringed, and continue to infringe, the '553 patent by actively inducing others to use the Carrier Handsets.

41. The Defendants have taken and continue to take active steps to encourage and facilitate subscribers' use of the Carrier Handsets in the Carrier Network, which use inherently infringes the '553 patent.

42. Defendants' inducement creates liability under 35 U.S.C. § 271(b).

43. Samsung was given explicit notice, when representatives from Orlando's parent company met with Samsung representatives more than nine months ago and when claim charts for the '196 and '553 patents were sent to Samsung's VP IP Acquisition more than eight months ago, that its activities cause others to infringe these patents. The Carrier received notice in June 2014. Despite that notice, they have continued those activities. Defendants thus have known and intended (since receiving such notice) that their continued actions would induce actual infringement of the '553 patent.

44. Defendants, by selling, offering to sell, and importing Carrier Handsets that are used to directly infringe at least claims 1, 2, 5, 8, and 9 of the '553 patent, have contributed to, and continue to contribute to, the infringement by others, including end users of the Carrier Handsets.

45. Defendants contribute by offering to sell, selling, or importing the Carrier Handsets, which have distinct and separate portions of software ("the Components") for use only

in practicing the patented process, constituting a material part of the invention, knowing the Components to be especially made or adapted for use in infringing the '553 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. The Components include the portions of software on the Carrier Handsets, software updates for the Carrier Handsets, and software on individual chips or chipsets forming part of the Carrier Handsets that are used only for performing the steps of the claimed method.

46. Defendants' conduct creates liability under 35 U.S.C. § 271(c).

47. Samsung was given explicit notice, when representatives from Orlando's parent company met with Samsung representatives more than nine months ago and when claim charts for the '196 and '553 patents were sent to Samsung's VP IP Acquisition more than eight months ago, of Orlando's allegations of infringement and identification of the Carrier Handsets, which contain distinct and separate portions of software for use only in infringing at least claims 1, 2, 5, 8, and 9 of the '553 patent and notice of the Components especially made or especially adapted for use in infringing the '553 patent that were not staple articles or commodities of commerce suitable for substantial non-infringing use. The Carrier received notice in June 2014. Despite that notice, they have continued to provide the Carrier Handsets. Defendants thus have known and intended (since receiving such notice) that their continued actions would contribute to infringement of the '553 patent.

48. Defendants' infringement, as set forth above, has damaged Orlando.

49. Each Defendant's infringement and consequent damage will continue unless that Defendant is enjoined.

50. Defendants are liable in an amount that adequately compensates Orlando for the infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

Infringement of U.S. Patent No. 5,687,196

51. This Count incorporates by reference paragraphs 1-12 and 16-29, above.

52. Orlando owns United States patent number 5,687,196, entitled “Range and Bearing Tracking System with Multipath Rejection” (“the ’196 patent”), which issued to inventors James Arthur Proctor, Jr. and James Carl Otto on November 11, 1997. Ex. D.

53. The Carrier, when providing the Carrier Services, and Samsung have infringed at least method claims 12, 13, 14, and 16 of the ’196 patent.

54. This infringement involved the Carrier’s performing each step by the Carrier’s base station’s operating and controlling a Carrier Handset to perform some or all of the claimed functions.

55. Per the Carrier and others, in submissions to the FCC pursuant to Phase II of the E911 rules, and consistent with the UMTS standard, the Carrier’s 3G and 4G networks included location services capabilities, each involving handset-based GPS technology and a fallback technology involving RTT.

56. Per the standard, an RTT determination was used for the positioning function, i.e., a position estimate computation that involves determining distance. The standard contemplated that a multipath signal will be received.

57. On information and belief, the base station in the Carrier included a component that correlated the multipath signal (such as a rake receiver, an element commonly used) into

plural path signals and measured the times of arrivals of those plural path signals. The UMTS/HSPA specification refers to correlation and arrival time measurement (at the base station) of plural multipath components. With the rake receiver, a searcher scans the time domain and measures the times of arrivals of multipath pilot signals.

58. Location software, provided in a Qualcomm gpsOne chip and including an API for interfacing with the software, was provided on at least some of the Carrier Handsets. The location software, when executed, carried out the RTT functionality described above. The location software was executed by the Carrier when it provided location information in response to 911 calls placed on its network.

59. The Carrier did not itself design or build the handset, although it did require this functionality. Rather, the Carrier's performance of the handset steps arose from the Carrier's sending of signaling messages to the handset, which messages caused that performance.

60. The Carrier also infringed when its employees or other agents used the Carrier Handsets to perform services on the Carrier's behalf.

61. The Carrier also infringed when it performed some steps on its base stations and provided to its subscribers Carrier Handsets that Samsung designed and built and that Samsung or a vendor programmed to automatically perform the handset steps.

62. Samsung infringed by using, offering to sell, selling, or importing the Carrier Handsets, which have been programmed, when enabled and ready, to automatically perform each step of those claims.

63. Carrier and Samsung thus have liability for infringement of the '196 patent under 35 U.S.C. § 271(a).

64. In addition, each end user who operated one of the above listed Carrier Handsets according to the Defendants' instructions necessarily caused the Carrier Handset to automatically run software Defendants have installed, and the running of that software infringed the '196 patent. Defendants thus infringed the '196 patent by actively inducing others to use the Carrier Handsets.

65. The Defendants took active steps to encourage and facilitate the subscribers' use of the Carrier Handsets in the Carrier Network, which use inherently infringed the '196 patent.

66. Defendants' inducement created liability under 35 U.S.C. § 271(b).

67. Samsung was given explicit notice about June 24-25, 2014, when representatives from Orlando's parent company met with Samsung representatives, that their activities cause others to infringe these patents. In addition, on July 15, 2014, claim charts for the '196 and '553 patents were sent to Samsung's VP IP Acquisition. The Carrier was given notice in June 2014. Despite that notice, they continued those activities. Defendants thus knew and intended (since receiving such notice) that their continued actions would induce actual infringement of the '196 patent.

68. Defendants, by offering to sell, selling, and importing Carrier Handsets that are used to infringe at least claims 12, 13, 14, and 16 of the '196 patent, contributed to the infringement by others, including end users of the Carrier Handsets.

69. Defendants contributed by offering to sell, selling, or importing the Carrier Handsets, which have distinct and separate portions of software ("the Components") for use only in practicing the patented process, constituting a material part of the invention, knowing the Components to be especially made or adapted for use in infringing the '196 patent and not a staple article or commodity of commerce suitable for substantial non-infringing use. The

Components include the portions of software on the Carrier Handsets, software updates for the Carrier Handsets, and software on individual chips or chipsets forming part of the Carrier Handsets that were used only for performing the steps of the claimed method.

70. Defendants' conduct created liability under 35 U.S.C. § 271(c).

71. Samsung was given explicit notice, when representatives from Orlando's parent company met with Samsung representatives more than nine months ago and when claim charts for the '196 and '553 patents were sent to Samsung's VP IP Acquisition, of Orlando's allegations of infringement and identification of the Carrier Handsets, which contained distinct and separate portions of software for use only in infringing the '196 patent. Samsung also received notice of the Components especially made or especially adapted for use in infringing the '196 patent that were not staple articles or commodities of commerce suitable for substantial non-infringing use. The Carrier received notice in June 2014. Despite that notice, they continued to provide the Carrier Handsets. Defendants thus knew and intended (since receiving such notice) that their continued actions would contribute to infringement the '196 patent.

72. Defendants' infringement, as set forth above, has damaged Orlando.

73. Defendants are liable in an amount that adequately compensates Orlando for the infringement, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

DEMAND FOR JURY TRIAL

Orlando requests a trial by jury.

PRAYER FOR RELIEF

For the above reasons, Orlando respectfully requests that this Court enter judgment:

A. That each Defendant has infringed the '196 and '553 patents;

- B. Enjoining each Defendant, its officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in active concert or privity with it from infringement of the '553 patent, under 35 U.S.C. §283;
- C. That each Defendant pay Orlando damages with interest and costs, under 35 U.S.C. §284;
- D. Declaring this case exceptional under 35 U.S.C. §285 and awarding attorneys' fees; and
- E. Granting any further relief that the Court may decide appropriate.

Date: March 30, 2015

ORLANDO COMMUNICATIONS LLC

/s/ James J. Foster

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CERTIFICATE OF SERVICE

I certify that on March 30, 2015, all counsel of record were served with a copy of the foregoing document via electronic service through the Court's CM/ECF filing system.

/s/ James J. Foster _____