

**MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY AND POPEO PC**

Scott A. Rader
The Chrysler Center
666 Third Avenue
New York, NY 10017
Tel: (212) 935-3000

Michael T. Renaud (*pro hac vice* application forthcoming)
James M. Wodarski (*pro hac vice* application forthcoming)
Michael J. McNamara (*pro hac vice* application forthcoming)
Daniel B. Weinger (*pro hac vice* application forthcoming)
Kristina R. Cary (*pro hac vice* application forthcoming)
One Financial Center
Boston, MA 02111
Tel: (617) 542-6000

**UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY
NEWARK DIVISION**

PARKERVISION, INC.,)

Plaintiff,)

v.)

Case No.
Jury Trial Demanded

LG ELECTRONICS, INC., LG)

ELECTRONICS U.S.A., INC., and LG)

ELECTRONICS MOBILECOMM)

U.S.A, INC.,)

Defendants.)

_____)

COMPLAINT

Plaintiff ParkerVision, Inc., with a principal place of business at 7915 Baymeadows Way, Suite 400, Jacksonville, Florida 32256, sues (1) LG Electronics, Inc., with principal place of business at LG Twin Towers, 20 Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721, South Korea; (2) LG Electronics U.S.A., Inc., with principal place of business at 1000 Sylvan Avenue,

Englewood Cliffs, New Jersey 07632; and (3) LG Electronics MobileComm U.S.A, Inc., with a principal place of business at 10101 Old Grove Road, San Diego, California 92131 (together, the “LG Defendants”), and alleges the following:

THE PARTIES

1. ParkerVision is a Florida corporation with its principal places of business at 7915 Baymeadows Way, Suite 400, Jacksonville, Florida 32256 and 1035 Greenwood Boulevard, Lake Mary, Florida 32746.

2. LG Electronics, Inc. is a Korean entity with a principal executive office at LG Twin Towers, 20 Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721, South Korea.

3. LG Electronics U.S.A., Inc. is a Delaware corporation with its principal place of business at 1000 Sylvan Avenue, Englewood Cliffs, New Jersey 07632.

4. LG Electronics MobileComm U.S.A, Inc. is a California corporation with a place of business at 1000 Sylvan Avenue, Englewood Cliffs, New Jersey 07632.

NATURE OF THE ACTION

5. This is a civil action for the infringement of United States Patent No. 6,879,817 (the “817 Patent”) (attached as Exhibit 1 to Complaint, filed Dec. 14, 2015 (“the Complaint”)) entitled “DC Offset, Re-Radiation, and I/Q Solutions Using Universal Frequency Translation Technology”; United States Patent No. 7,929,638 (the “638 Patent”) (attached as Exhibit 2 to the Complaint) entitled “Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments”; United States Patent No. 8,571,135 (the “135 Patent”) (attached as Exhibit 3 to the Complaint) entitled “Method, System and Apparatus For Balanced Frequency Up-Conversion Of A Baseband Signal”; United States Patent No. 9,118,528 (the “528 Patent”) (attached as Exhibit 4 to the Complaint) entitled

“Method And System For Down-Converting An Electromagnetic Signal, And Transforms For Same, And Aperture Relationships” (collectively, the “Patents-in-Suit”) under the patent laws of the United States, 35 U.S.C. § 1, *et. seq.*

6. ParkerVision is the lawful assignee and owner of all right, title and interest in and to the Patents-in-Suit.

7. ParkerVision and LG have been engaged in two other actions on the Patents-in-Suit. ParkerVision filed suit against LG and other defendants in the Middle District of Florida, on December 14, 2015, and is styled *ParkerVision, Inc. v. Apple Inc. et al.*, Case No. 3:15-cv-01477 (“the Florida litigation”). ParkerVision moved to voluntarily dismiss the action against LG without prejudice on July 21, 2017 in view of *TC Heartland LLC v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514 (2017). ParkerVision also filed a complaint against LG and other parties in the International Trade Commission, on December 15, 2015, and is styled *Certain RF Capable Integrated Circuits and Products Containing the Same*, Investigation No. 337-TA-982 (“the ITC Investigation”). The Investigation terminated on April 27, 2017, after ParkerVision withdrew the complaint under Commission Rule 19 C.F.R. § 210.21(a)(1).

8. LG received infringement charts detailing LG’s infringement of the Patents-in-Suit as exhibits to ParkerVision’s Complaint in the Florida litigation.

9. LG received infringement charts detailing LG’s infringement of the Patents-in-Suit as exhibits to ParkerVision’s Complaint in the ITC Investigation. Through discovery during the ITC Investigation, LG received from ParkerVision additional detailed infringement charts of the Patents-in-Suit for the accused products, detailed responses demonstrating the validity of the Patents-in-Suit, expert reports and testimony further demonstrating LG’s infringement and the

validity of the Patents-in-Suit, and a pre-hearing briefing detailing LG's infringement and the validity of the Patents-in-Suit.

10. Despite LG's possession of detailed knowledge of its infringement of the valid Patents-in-Suit, LG continued to make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States that infringe the Patents-in-Suit.

11. LG and/or those acting in concert with them, with actual knowledge of the Patents-in-Suit before the filing of this action, have intentionally induced others to infringe the Patents-in-Suit, by having its direct and indirect customers make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States, and placing into the stream of commerce the accused products, with knowledge that such products infringe the Patents-in-Suit, and using the same in a manner that infringes the Patents-in-Suit. LG's direct and indirect customers include retailers, including AT&T and Verizon, who sell LG's accused products in its physical retail locations in the State of New Jersey and through their online websites to end-user consumers in the State of New Jersey. LG provides instructions and directions directly to its retailers, including AT&T and Verizon, and its end-user consumers on how to initialize and operate the infringing accused produced, including providing operating manuals, service manuals, and/or technical know-how with the intent to induce the retailers and consumers to infringe the Patents-in-Suit.

JURISDICTION AND VENUE

12. This Court has subject matter jurisdiction under 28 U.S.C. § 1331 and 1338(a) because this lawsuit is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 101, *et seq.*

13. Personal jurisdiction exists generally over the LG Defendants because they have sufficient minimum contacts with the forum as a result of business conducted within the State of New Jersey and the District of New Jersey. Personal jurisdiction also exists specifically over the LG Defendants because they, directly or through subsidiaries or intermediaries, make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States, the State of New Jersey, and the District of New Jersey that infringe one or more claims of each of ParkerVision's Patents-in-Suit, as alleged more particularly below.

14. Personal jurisdiction also exists over LG Electronics U.S.A. and LG Electronics MobileComm U.S.A, Inc. as they are residents of the State of New Jersey as each has their place of business in the State of New Jersey. Personal jurisdiction also exists over LG Electronics, Inc. as it regularly conducts business with LG Electronics U.S.A. and LG Electronics MobileComm U.S.A, Inc. in the State of New Jersey.

15. Venue in this District is proper under 28 U.S.C. §§ 1400(b) and 1391(b) and (c), because Defendants are subject to personal jurisdiction in this District and have committed acts of infringement in this District. Defendants make, use, and/or sell infringing products within this District, have continuing presence within the District, and have the requisite minimum contacts with the District such that this venue is a fair and reasonable one. Upon information and belief, Defendants have transacted and, at the time of the filing of this Complaint, are continuing to transact business within the District. Venue is proper in this district as to LG Electronics U.S.A. and LG Electronics MobileComm U.S.A, Inc. as they have a regular and established place of business in the State of New Jersey and have committed acts of infringement in the State of New Jersey. Venue is proper in this district as to LG Electronics, Inc. pursuant to 28 U.S.C. § 1391(c)(1) as it is not resident of the United States and may be sued in any judicial district.

16. All conditions precedent to bringing this action have been performed, been waived or have occurred.

COUNT I
(Defendants' Infringement of the '817 Patent)

17. ParkerVision incorporates the allegations in paragraphs 1 through 16, above.

18. The '817 Patent is valid and enforceable.

19. LG makes, uses, sells, offers to sell, and/or imports into the United States for subsequent sale or use products, services, methods, or processes that infringe, literally and/or under the doctrine of equivalents, or which employ systems, components, and/or processes that make use of systems or processes that infringe, literally and/or under the doctrine of equivalents, one or more of the claims of the '817 Patent. Such devices provided by LG are radio frequency ("RF") receivers, transceivers, other semiconductors that enable wireless technology, and the products that include these semiconductors.

20. On information and belief, LG infringes literally and/or under the doctrine of equivalents, at least claims 1, 5, 6, 7, 11, and 14 of the '817 Patent (the "Asserted Claims of the '817 Patent") due to LG making, using, selling, offering to sell, and/or importing into the United States smartphones and tablets such as the G Flex 2 smartphone and the G3 smartphone ("LG Products"). Included in these exemplary LG Products are Qualcomm-provided RF devices such as the WTR1625 transceiver or the WTR3925 transceiver which are capable of down-converting a higher frequency signal into a lower frequency signal in the same way as claimed by the '817 Patent.

21. Attached to the Complaint as Exhibit 5 is an exemplary claim chart comparing claim 1 of the '817 Patent to the G3 smartphone, which includes a Qualcomm WTR1625 transceiver. Attached to the Complaint as Exhibit 6 is an exemplary claim chart comparing

claim 1 of the '817 Patent to the G Flex 2 smartphone, which includes a Qualcomm WTR3925 transceiver. The capacitors identified in the frequency down-conversion modules in the attached exemplary claim charts of Exhibits 5 and 6, together with the other elements identified, satisfy the frequency down-conversion modules of the Asserted Claims of the '817 Patent. In the alternative, the identified capacitors and/or the capacitors arranged as feedback capacitors in the trans-impedance amplifiers of the accused devices, together with the other elements identified, satisfy the frequency down-conversion modules of the Asserted Claims of the '817 Patent. These claim charts are exemplary and, on information and belief, many other products provided by LG infringe the '817 Patent.

22. With actual knowledge of the '817 Patent before the filing of this action, LG has intentionally induced others to infringe the '817 Patent, by providing instructions and directions to its direct and indirect customers to make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States that infringe the '817 Patent.

23. Despite knowledge of the '817 Patent, including the receipt of explicitly detailed infringement charts and expert analysis establishing the validity of the '817 Patent, LG continues to recklessly, willfully, and/or deliberately infringe the '817 Patent.

24. ParkerVision is entitled to recover damages adequate to compensate ParkerVision for Defendants' infringement.

COUNT II
(Defendants' Infringement of the '638 Patent)

25. ParkerVision incorporates the allegations in paragraphs 1 through 24, above.

26. The '638 Patent is valid and enforceable.

27. LG makes, uses, sells, offers to sell, and/or imports into the United States for subsequent sale or use products, services, methods, or processes that infringe, literally and/or

under the doctrine of equivalents, or which employ systems, components, and/or processes that make use of systems or processes that infringe, literally and/or under the doctrine of equivalents, one or more of the claims of the '638 Patent. Such devices provided by LG are radio frequency ("RF") transmitters, transceivers, other semiconductors that enable wireless technology, and the products that include these semiconductors.

28. On information and belief, LG infringes literally and/or under the doctrine of equivalents, at least claims 1, 4, 5, 6, 7, and 8 of the '638 Patent due to LG making, using, selling, offering to sell, and/or importing into the United States smartphones and tablets such as the G Flex 2 smartphone and the G3 smartphone ("LG Products"). Included in these exemplary LG Products are Qualcomm-provided RF devices such as the WTR1625 transceiver paired with the Qualcomm MSM8975 Baseband Processor or the WTR3925 transceiver paired with the Qualcomm MSM8994 Baseband Processor which are capable of up-converting a lower frequency signal into a higher frequency signal in the same way as claimed by the '638 Patent.

29. Attached to the Complaint as Exhibit 7 is an exemplary claim chart comparing claim 1 of the '638 Patent to the G3 smartphone, which includes a Qualcomm WTR1625 transceiver and Qualcomm MSM8975 Baseband Processor. Attached to the Complaint as Exhibit 8 is an exemplary claim chart comparing claim 1 of the '638 Patent to the G Flex 2 smartphone, which includes a Qualcomm WTR3925 transceiver and Qualcomm MSM8994 Baseband Processor. These claim charts are exemplary and, on information and belief, many other products provided by LG infringe the '638 Patent.

30. With actual knowledge of the '638 Patent before the filing of this action, LG has intentionally induced others to infringe the '638 Patent, by providing instructions and directions

to its direct and indirect customers to make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States that infringe the '638 Patent.

31. Despite knowledge of the '638 Patent, including the receipt of explicitly detailed infringement charts and expert analysis establishing the validity of the '638 Patent, LG continues to recklessly, willfully, and/or deliberately infringe the '638 Patent.

32. ParkerVision is entitled to recover damages adequate to compensate ParkerVision for Defendants' infringement.

COUNT III
(Defendants' Infringement of the '135 Patent)

33. ParkerVision incorporates the allegations in paragraphs 1 through 32, above.

34. The '135 Patent is valid and enforceable.

35. LG makes, uses, sells, offers to sell, and/or imports into the United States for subsequent sale or use products, services, methods, or processes that infringe, literally and/or under the doctrine of equivalents, or which employ systems, components, and/or processes that make use of systems or processes that infringe, literally and/or under the doctrine of equivalents, one or more of the claims of the '135 Patent. Such devices provided by LG are radio frequency ("RF") transmitters, transceivers, other semiconductors that enable wireless technology, and the products that include these semiconductors.

36. On information and belief, LG infringes literally and/or under the doctrine of equivalents, at least claims 22 and 24 of the '135 Patent due to LG making, using, selling, offering to sell, and/or importing into the United States smartphones and tablets such as the G Flex 2 smartphone and the G3 smartphone ("LG Products"). Included in these exemplary LG Products are Qualcomm-provided RF devices such as the WTR1625 transceiver or the

WTR3925 transceiver which are capable of up-converting a lower frequency signal into a higher frequency signal in the same way as claimed by the '135 Patent.

37. Attached to the Complaint as Exhibit 9 is an exemplary claim chart comparing claim 22 of the '135 Patent to the G3 smartphone, which includes a Qualcomm WTR1625 transceiver. Attached to the Complaint as Exhibit 10 is an exemplary claim chart comparing claim 22 of the '135 Patent to the G Flex 2 smartphone, which includes a Qualcomm WTR3925 transceiver. These claim charts are exemplary and, on information and belief, many other products provided by LG infringe the '135 Patent.

38. With actual knowledge of the '135 Patent before the filing of this action, LG has intentionally induced others to infringe the '135 Patent, by providing instructions and directions to its direct and indirect customers to make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States that infringe the '135 Patent.

39. Despite knowledge of the '135 Patent, including the receipt of explicitly detailed infringement charts and expert analysis establishing the validity of the '135 Patent, LG continues to recklessly, willfully, and/or deliberately infringe the '135 Patent.

40. ParkerVision is entitled to recover damages adequate to compensate ParkerVision for Defendants' infringement.

COUNT IV
(Defendants' Infringement of the '528 Patent)

41. ParkerVision incorporates the allegations in paragraphs 1 through 40, above.

42. The '528 Patent is valid and enforceable.

43. LG makes, uses, sells, offers to sell, and/or imports into the United States for subsequent sale or use products, services, methods, or processes that infringe, literally and/or under the doctrine of equivalents, or which employ systems, components, and/or processes that

make use of systems or processes that infringe, literally and/or under the doctrine of equivalents, one or more of the claims of the '528 Patent. Such devices provided by LG are radio frequency ("RF") receivers, transceivers, other semiconductors that enable wireless technology, and the products that include these semiconductors.

44. On information and belief, LG infringes literally and/or under the doctrine of equivalents, at least claims 1, 5, 6, 8, 9, 10, 17, 18, 19, 23, 24, 26, 27, 28, 33, 34, 35, and 36 of the '528 Patent (the "Asserted Claims of the '528 Patent") due to LG making, using, selling, offering to sell, and/or importing into the United States smartphones and tablets such as the G Flex 2 smartphone and the G3 smartphone ("LG Products"). Included in these exemplary LG Products are Qualcomm-provided RF devices such as the WTR1625 transceiver or the WTR3925 transceiver which are capable of down-converting a higher frequency signal into a lower frequency signal in the same way as claimed by the '528 Patent.

45. Attached to the Complaint as Exhibit 11 is an exemplary claim chart comparing claim 1 of the '528 Patent to the G3 smartphone, which includes a Qualcomm WTR1625 transceiver. Attached to the Complaint as Exhibit 12 is an exemplary claim chart comparing claim 1 of the '528 Patent to the G Flex 2 smartphone, which includes a Qualcomm WTR3925 transceiver. The capacitors identified in the attached exemplary claim charts of Exhibits 11 and 12 satisfy the energy storage elements of the Asserted Claims of the '528 Patent. In the alternative, the identified capacitors and/or the capacitors arranged as feedback capacitors in the trans-impedance amplifiers of the accused devices satisfy the energy storage elements of the Asserted Claims of the '528 Patent. These claim charts are exemplary and, on information and belief, many other products provided by LG infringe the '528 Patent.

46. With actual knowledge of the '528 Patent before the filing of this action, LG has intentionally induced others to infringe the '528 Patent, by providing instructions and directions to its direct and indirect customers to make, use, offer for sale, sell, import, advertise, make available and/or market products in the United States that infringe the '528 Patent.

47. Despite knowledge of the '528 Patent, including the receipt of explicitly detailed infringement charts and expert analysis establishing the validity of the '528 Patent, LG continues to recklessly, willfully, and/or deliberately infringe the '528 Patent.

48. ParkerVision is entitled to recover damages adequate to compensate ParkerVision for Defendants' infringement.

PRAYER FOR RELIEF

WHEREFORE, ParkerVision respectfully requests a judgment:

A. that the '817 Patent, the '638 Patent, the '135 Patent, and the '528 Patent are valid and enforceable.

B. that Defendants have infringed, directly and/or indirectly, one or more claims of the '817 Patent, the '638 Patent, the '135 Patent, and the '528 Patent;

C. that awards ParkerVision all appropriate damages under 35 U.S.C. § 284 for Defendants' past infringement, and any continuing or future infringement of the Patents-in-Suit, up until the date such judgment is entered, including interest, costs, and disbursements as justified under 35 U.S.C. § 284 and, if necessary, to adequately compensate ParkerVision for Defendants' infringement, and an accounting;

D. declaring that this case is exceptional within the meaning of 35 U.S.C. § 285 and that ParkerVision be awarded its reasonable attorneys' fees against Defendants that it incurs in prosecuting this action;

- E. for costs, and expenses that ParkerVision incurs in prosecuting this action; and
- F. such further relief at law or in equity as the Court deems just and proper.

DEMAND FOR JURY TRIAL

ParkerVision hereby demands trial by jury on all claims and issues so triable.

Dated: July 21, 2017

By /s/ Scott A. Rader
MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND
POPEO PC
Scott A. Rader
The Chrysler Center
666 Third Avenue
New York, NY 10017
Tel: (212)935-3000
Facsimile: (212) 983-3115
SARader@mintz.com

Michael T. Renaud (*pro hac vice* application forthcoming)
James M. Wodarski (*pro hac vice* application
forthcoming)
Michael J. McNamara (*pro hac vice* application
forthcoming)
Daniel B. Weinger (*pro hac vice* application forthcoming)
Kristina R. Cary (*pro hac vice* application forthcoming)
One Financial Center
Boston, MA 02111
Tel: (617) 542-6000
Facsimile: (617) 542-2241
MTRenaud@mintz.com
JWodarski@mintz.com
MMcNamara@mintz.com
DBWeinger@mintz.com
KRCary@mintz.com

Attorneys for ParkerVision, Inc.