

THE UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF FLORIDA  
JACKSONVILLE DIVISION

PARKERVISION, INC.,

*Plaintiff,*

v.

QUALCOMM INCORPORATED,

*Defendant.*

Case No. 3:11-cv-719-J-37-TEM

**Defendant Qualcomm's Answer to ParkerVision's Third Amended Complaint and  
Qualcomm's Counterclaim and Demand for Jury Trial**

Defendant/Counterclaim Plaintiff Qualcomm Incorporated

("Qualcomm") hereby answers the Third Amended Complaint for Patent Infringement of Plaintiff ParkerVision, Inc. ("ParkerVision"):

**ANSWER**

1. Qualcomm denies the allegations of paragraph 1, but admits that ParkerVision purports to seek damages and injunctive relief.
2. Qualcomm denies the allegations of paragraph 2.
3. Qualcomm admits the allegations of paragraph 3.
4. Qualcomm admits that Qualcomm is a Delaware corporation with its principal place of business at 5775 Morehouse Drive, San Diego, California, 92121. Qualcomm admits that it conducts business in the Middle District of Florida. Qualcomm denies the remaining allegations of paragraph 4.
5. Qualcomm denies the allegations of paragraph 5.
6. Qualcomm admits the allegations of paragraph 6.

7. Qualcomm denies the allegations of paragraph 7, but does not assert lack of personal jurisdiction as a defense to this action.

8. Qualcomm denies the allegations of paragraph 8, but does not assert lack of venue as a defense to this action.

9. Qualcomm lacks knowledge or information sufficient to form a belief about the truth of the allegations of paragraph 9, except that Qualcomm denies that the cited patents are valid or enforceable.

10. Qualcomm admits that ParkerVision has not granted Qualcomm a license to practice the patents-in-suit. Qualcomm lacks knowledge or information sufficient to form a belief about the truth of the allegations of ownership of the patents-in-suit.

Qualcomm denies the remaining allegations of paragraph 10.

11. Qualcomm denies the allegations of paragraph 11.

12. Qualcomm denies the allegations of paragraph 12.

13. Qualcomm denies the allegations of paragraph 13.

14. Qualcomm denies the allegations of paragraph 14.

15. Qualcomm denies the allegations of paragraph 15.

#### **Affirmative Defenses**

Qualcomm asserts the following affirmative defenses.

#### **Failure To State A Claim**

ParkerVision's complaint fails to state a claim upon which relief can be granted.

### **Non-Infringement**

Qualcomm has not infringed, and currently does not infringe, any valid claim of any of U.S. Patent Nos. 6,061,551 (the “551 Patent”), 6,266,518 (the “518 Patent”), 6,370,371 (the “371 Patent”), 6,963,734 (the “734 Patent”), 7,496,342 (the “342 Patent”), and 7,724,845 (the “845 Patent”) (collectively, the “Patents-in-Suit”), directly, indirectly, contributorily, by inducement, or in any other manner.

### **Invalidity**

Each claim of the Patents-in-Suit is invalid for failure to comply with one or more provisions of 35 U.S.C. §§ 101, 102, 103, and 112. All of the claims asserted against Qualcomm are invalid as anticipated or obvious in light of the prior art, including:

- A. Shahani, *et al.*, “A 12-mW Wide Dynamic Range CMOS Front-End for a Portable GPS Receiver,” *IEEE Journal of Solid-State Circuits*, Vol. 32, No. 12, December 1997, pp. 2061-2070.
- B. Razavi, “A 1.5V 900MHz Downconversion Mixer,” 1996 IEEE International Solid-State Circuits Conference, Session 3, Paper TP 3.1, pp. 48-49.
- D. DeMaw, “Practical RF Design Manual,” Prentice-Hall, Inc., 1982, pp. 118-136, 188-213.
- D. van Graas, “The Fourth Method: Generating and Detecting SSB Signals,” *QEX*, Sept. 1990, pp. 7-11.
- J. Crols, *et al.*, “A 1.5 GHz Highly Linear CMOS Downconversion Mixer,” *IEEE Journal of Solid-State Circuits*, Vol. 30, No. 7, July 1995, pp. 736-742.
- J. Rudell, *et al.*, “A 1.9-GHz Wide-Band IF Double Conversion CMOS Receiver for Cordless Telephone Applications,” *IEEE Journal of Solid-State Circuits*, Vol. 32, No. 12, December 1997, pp. 2071-2088.

- L. Breems, *et al.*, "A 1.8mW CMOS  $\Sigma\Delta$  Modulator with Integrated Mixer for A/D Conversion of IF Signals" (and associated slide supplement), 1999 IEEE International Solid-State Circuits Conference, Session 3, Paper MP 3.2, pp. 52-53, 444 (paper) and pp. 52-53, 383-384 (slide supplement).
- P. Estabrook, *et al.*, "A Mixer Computer-Aided Design Tool Based in the Time Domain," 1988 IEEE MTT-S Digest, pp. 1107-1110.
- P. Weisskopf, "Subharmonic Sampling of Microwave Signal Processing Requirements," *Microwave Journal*, May 1992, pp. 239-247.
- ParkerVision's Cameraman MDS-2000 product.
- R. Schetgen, *et al.*, "The ARRL Handbook for Radio Amateurs," The American Radio Relay League, Inc., 1994, Ch. 15.
- U.S. Patent No. 4,346,477, "Phase Locked Sampling Radio Receiver," to R. Gordy.
- U.S. Patent No. 5,015,963, "Synchronous Demodulator," to J. Sutton.
- U.S. Patent No. 5,140,705, "Center-Tapped Coil-Based Tank Circuit for a Balanced Mixer Circuit," to T. Kosuga.
- U.S. Patent No. 5,379,457, "Low Noise Active Mixer," to N. Nguyen.
- U.S. Patent No. 5,630,228, "Double Balanced Mixer Circuit with Active Filter Load for a Portable Communication Receiver," to J. Mittel.
- U.S. Patent No. 6,230,000, "Product Detector and Method Therefor," to R. Tayloe.
- U.S. Patent No. 6,275,687, "Apparatus and Method for Implementing a Low-Noise Amplifier and Mixer," to S. Lloyd.
- U.S. Patent No. 6,121,819, "Switching Down Conversion Mixer for Use in Multi-Stage Receiver Architectures," to K. Traylor.
- Y. Nozawa, "The Merigo Method: SSB Generator/Producing A Demodulator," *Ham Journal*, July/August 1993 Issue, pp. 20-31.

Moreover, several claims of the Patents-in-Suit are invalid under 35 U.S.C. § 112 because terms contained therein are indefinite or because they lack adequate descriptive support in the specification, including the following:

- Claims 113, 161, 202 and 203 of the '551 Patent are invalid as indefinite under 35 U.S.C. § 112, second paragraph, because the term "substantial amounts of energy" fails to particularly point out and distinctly claim the subject matter.
- Claims 113, 202 and 203 of the '551 Patent and Claims 81 and 91 of the '518 Patent are invalid as indefinite under 35 U.S.C. § 112, second paragraph, because the term "accurate voltage reproduction" fails to particularly point out and distinctly claim the subject matter.
- Claim 4 of the '845 Patent is invalid as indefinite under 35 U.S.C. § 112, second paragraph, because the term "A sin (Φt+N)" is characterized in the claim as "an approximate half cycle of the carrier signal" and a person of ordinary skill in the art would understand that "t" represents time, that "Φ" is a fixed phase angle and that N is an integer and thus for the term to make any sense it must have the dimension of phase but it instead has the dimension of "phase times time" and therefore fails to particularly point out and distinctly claim the subject matter.
- Claim 7 of the '845 Patent is invalid as indefinite under 35 U.S.C. § 112, second paragraph, because in the equation:

$$E = \left\{ \int_0^{T_A} A \cdot Si(t) \right\}^2 dt ,$$

"E" cannot represent energy because the placement of the brackets renders the equation insolubly ambiguous.

Qualcomm has provided additional details concerning its allegations that all of the claims that have been asserted against it are invalid in its invalidity contentions served on February 13, 2012, as well as in the expert reports it has served.

### **Laches**

The '551 Patent, the '518 Patent and the '371 Patent are unenforceable, in whole or in part, against Qualcomm under the doctrine of laches, because ParkerVision knew or reasonably should have known of Qualcomm's direct conversion receiver technology since at least December 2000, when Qualcomm publicly announced its Zero Intermediate Frequency (*i.e.* "ZIF" or direct conversion) architecture for the wireless handset market. Indeed, immediately after Qualcomm's announcement, ParkerVision told its investors that Qualcomm would need a license from ParkerVision to sell ZIF technology. ParkerVision, however, waited until July 2011, over 10 years after the issuance of these patents, to sue Qualcomm. This 10 year delay is presumed to be, and is, both unreasonable and prejudicial to Qualcomm.

Additionally, ParkerVision knew, or reasonably should have known, of Qualcomm's alleged infringement since the announcement of Qualcomm ZIF products that included passive mixers.

### **Equitable Estoppel**

The Patents-in-Suit are unenforceable against Qualcomm under the doctrine of equitable estoppel, because ParkerVision knew or reasonably should have known of Qualcomm's direct conversion receiver technology since at least December 2000, when Qualcomm publicly announced its "ZIF" architecture. Indeed, immediately after Qualcomm's announcement, ParkerVision told its investors that Qualcomm would need a license from ParkerVision to sell ZIF technology. ParkerVision, however, waited until July 2011, over 10 years after the issuance of these patents, to sue Qualcomm. Qualcomm relied on ParkerVision's inaction in developing and introducing its product

lines, and planning its business. Due to its reliance, Qualcomm will be materially prejudiced if ParkerVision is allowed to proceed with its claims of infringement.

**Prayer For Relief**

WHEREFORE, Qualcomm respectfully requests that this Court enter a Judgment and Order dismissing the Complaint, and each count thereof, with prejudice and denying ParkerVision any relief whatsoever, and awarding Qualcomm any such other costs and further relief as the Court may deem just and proper.

**COUNTERCLAIM**

Defendant/Counterclaim Plaintiff Qualcomm Incorporated (“Qualcomm”), for its Counterclaim against Plaintiff/Counterclaim Defendant ParkerVision, Inc. (“ParkerVision”), upon knowledge as to matters relating to itself and upon information and belief as to all other matters, alleges as follows:

**Parties**

1. Qualcomm is a Delaware corporation with its principal place of business at 5775 Morehouse Drive, San Diego, California. Qualcomm is a corporation engaged in the design, manufacture, and sale of wireless communication equipment and technology, including, primarily, cell phone technology. Qualcomm is the world’s largest supplier of cell phone chips. Since its formation in 1985, Qualcomm has invested billions of dollars in research and development.

2. ParkerVision is a Florida corporation with its principal place of business at 7915 Baymeadows Way, Jacksonville, Florida.

**Jurisdiction**

3. This Court has jurisdiction over this counterclaim pursuant to 28 U.S.C. §§ 1331, 1332, 1338(a), 1367, and 2201.

4. Qualcomm seeks, *inter alia*, declaratory relief pursuant to 28 U.S.C. §§ 2201-2202 and Rule 57 of the Federal Rules of Civil Procedure.

5. ParkerVision is a resident of the State of Florida and, by filing this action, has submitted to this Court's exercise of personal jurisdiction.

**First Count**

**(Declaration of Non-Infringement of the Patents-in-Suit)**

6. Qualcomm incorporates by reference and realleges paragraphs 1 - 5 above as though fully stated herein.

7. ParkerVision claims to be owner of all right, title and interest in the Patents-in-Suit.

8. ParkerVision has accused Qualcomm of infringement of the Patents-in-Suit and has created a substantial, immediate and real controversy between the parties as to the infringement of the Patents-in-Suit.

9. Qualcomm has not infringed, and currently does not infringe, any valid claim of any of the Patents-in-Suit, directly, indirectly, contributorily, by inducement, or in any other manner, and ParkerVision is entitled to no relief for any claim of alleged infringement.



**Second Count**

**(Declaration of Invalidity of the Patents-in-Suit)**

10. Qualcomm incorporates by reference and realleges paragraphs 1 - 5 above as though fully stated herein.

11. ParkerVision contends that the Patents-in-Suit are valid and has created a substantial, immediate and real controversy between the parties as to the invalidity of the Patents-in-Suit.

12. Each claim of the Patents-in-Suit is invalid for failure to comply with one or more provisions of 35 U.S.C. §§ 101, 102, 103, and 112, and ParkerVision is entitled to no relief for any claim relating to their alleged validity.

13. All of the claims asserted against Qualcomm are invalid as anticipated or obvious in light of the prior art, including:

- A. Shahani, *et al.*, "A 12-mW Wide Dynamic Range CMOS Front-End for a Portable GPS Receiver," IEEE Journal of Solid-State Circuits, Vol. 32, No. 12, December 1997, pp. 2061-2070.
- B. Razavi, "A 1.5V 900MHz Downconversion Mixer," 1996 IEEE International Solid-State Circuits Conference, Session 3, Paper TP 3.1, pp. 48-49.
- D. DeMaw, "Practical RF Design Manual," Prentice-Hall, Inc., 1982, pp. 118-136, 188-213.
- D. van Graas, "The Fourth Method: Generating and Detecting SSB Signals," QEX, Sept. 1990, pp. 7-11.
- J. Crols, *et al.*, "A 1.5 GHz Highly Linear CMOS Downconversion Mixer," IEEE Journal of Solid-State Circuits, Vol. 30, No. 7, July 1995, pp. 736-742.
- J. Rudell, *et al.*, "A 1.9-GHz Wide-Band IF Double Conversion CMOS Receiver for Cordless Telephone Applications," IEEE

Journal of Solid-State Circuits, Vol. 32, No. 12, December 1997, pp. 2071-2088.

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- U.S. Patent No. 5,140,705, "Center-Tapped Coil-Based Tank Circuit for a Balanced Mixer Circuit," to T. Kosuga.
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- Y. Nozawa, "The Merigo Method: SSB Generator/Producing A Demodulator," Ham Journal, July/August 1993 Issue, pp. 20-31.

14. Many of the claims of the Patents-in-Suit are invalid under 35 U.S.C. § 112 because terms contained therein are indefinite or because they lack adequate descriptive support in the specification, including the following:

- Claims 113, 161, 202 and 203 of the '551 Patent are invalid as indefinite under 35 U.S.C. § 112, second paragraph, because the term "substantial amounts of energy" fails to particularly point out and distinctly claim the subject matter.
- Claims 113, 202 and 203 of the '551 Patent and Claims 81 and 91 of the '518 Patent are invalid as indefinite under 35 U.S.C. § 112, second paragraph, because the term "accurate voltage reproduction" fails to particularly point out and distinctly claim the subject matter.
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Qualcomm has provided additional details concerning its allegations that all of the claims that have been asserted against it are invalid in its invalidity contentions served on February 13, 2012, as well as in the expert reports it has served.

**Prayer for Relief**

WHEREFORE, Qualcomm respectfully requests that this Court enter a Judgment and Order:

- A. Declaring that all asserted claims of the Patents-in-Suit are invalid, not infringed, and/or unenforceable;
- B. Finding that this case is an exceptional case pursuant to 35 U.S.C. § 285 or otherwise, and awarding Qualcomm its costs, together with reasonable attorneys' fees and all of its expenses for defending this suit;
- C. Awarding Qualcomm any such other costs and further relief as the Court may deem just and proper.

**Jury Demand**

Pursuant to Federal Rule of Civil Procedure 38(b), Qualcomm demands trial by jury on all issues so triable as to the Counterclaim and Affirmative Defenses.

April 11, 2013

CRAVATH, SWAINE & MOORE LLP

By: s/ Keith R. Hummel  
Keith R. Hummel (admitted pro hac vice) (Trial Counsel)  
khummel@cravath.com  
David Greenwald (admitted pro hac vice)  
dgreenwald@cravath.com  
Worldwide Plaza  
825 Eighth Avenue  
New York, New York 10019  
Telephone: (212) 474-1000  
Facsimile: (212) 474-3700

-and-

BEDELL, DITTMAR, DeVAULT, PILLANS & COXE

Professional Association

John A. DeVault, III

Florida Bar No. 103979

[jad@bedellfirm.com](mailto:jad@bedellfirm.com)

Courtney K. Grimm

[cgrimm@bedellfirm.com](mailto:cgrimm@bedellfirm.com)

Florida Bar No. 953740

The Bedell Building

101 East Adams Street

Jacksonville, Florida 32202

Telephone: (904) 353-0211

Facsimile: (904) 353-9307

-and-

CADWALADER, WICKERSHAM & TAFT LLP

Christopher A. Hughes (admitted pro hac vice)

[Christopher.Hughes@cwt.com](mailto:Christopher.Hughes@cwt.com)

1 World Financial Center

New York, New York 10281

Telephone: (212) 504-6000

Facsimile: (212) 504-6666

*Counsel for Defendant, Counterclaim Plaintiff Qualcomm Incorporated*

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that on this 11th day of April, 2013, I electronically filed the foregoing with the Clerk of the Court by using the CM/ECF system which will send a notice of electronic filing to all counsel of record.

s/ Keith R. Hummel

Keith R. Hummel (admitted pro hac vice)

khummel@cravath.com

Worldwide Plaza

825 Eighth Avenue

New York, New York 10019

Telephone: (212) 474-1000

Facsimile: (212) 474-3700

*Attorney for Defendant,*

*Counterclaim Plaintiff*