

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NORTH CAROLINA  
WESTERN DIVISION**

**VALENCELL, INC.,**

**Plaintiff,**

v.

**APPLE INC.,**

**Defendant.**

C.A. No. \_\_\_\_

**JURY TRIAL DEMANDED**

**PLAINTIFF'S ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Valencell, Inc. ("Valencell") files this Original Complaint against Apple Inc. ("Apple" or "Defendant") for infringement of U.S. Patent Nos. 8,923,941 ("the '941 patent"); 8,886,269 ("the '269 patent"); 8,929,965 ("the '965 patent"); and 8,989,830 ("the '830 patent") (collectively "the patents-in-suit").

**THE PARTIES**

1. Valencell is a Delaware corporation with its principal place of business at 4601 Six Forks Rd., Suite 103, Raleigh, North Carolina.

2. Apple is a California corporation with a principal place of business at 1 Infinite Loop, Cupertino, California 95014. Apple has designated CT Corporation System, 150 Fayetteville St., Box 1011 Raleigh, NC 27601-2957 as its agent for service of process.

**JURISDICTION AND VENUE**

3. This Court has subject matter jurisdiction of this action under 28 U.S.C. §§ 1331 and 1338(a), as an action arising under an Act of Congress relating to patents, 35 U.S.C. §§ 1 *et seq.*; under 28 U.S.C. § 1338(b), as an action arising under an Act of Congress relating to patents joined with a claim for unfair competition; and under this Court's supplemental jurisdiction. This

Court has personal jurisdiction over Apple. Apple is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the North Carolina long-arm statute, N.C.G.S. § 1-75.4 due at least to its substantial business in this State and judicial district, including: (A) at least part of their infringing activities alleged herein; and (B) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from goods sold and services provided to North Carolina residents.

4. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c) and 1400(b) because, among other things, Apple is subject to personal jurisdiction in this district, has regularly conducted business in this judicial district, and certain of the acts complained of herein occurred in this judicial district. Further, a substantial part of the acts giving rise to the allegations of this Complaint occurred in this District.

#### **FACTUAL ALLEGATIONS**

5. On information and belief, in or around February 2013, Apple assembled a team to develop and/or implement the Apple Watch. At that time, Apple intended to incorporate a heart sensor into the Apple Watch. Around that same time, Liang Hoe, a Senior Partnership Manager at Apple, contacted Valencell regarding a partnership opportunity. Apple expressed an interest in Valencell's heart sensor technology.

6. On information and belief, beginning in March 2013, Apple agents repeatedly accessed [www.valencell.com](http://www.valencell.com) (the "Valencell Website") from at least the following IP addresses: 17.202.109.239, 17.208.106.158, 17.114.122.4, 17.216.30.100, 17.88.158.254, 17.209.11.188, 17.208.31.179, 17.208.110.251, 17.221.47.91, 17.247.87.225 (collectively the "Apple IP Addresses"). Each of the Apple IP Addresses is assigned to Apple.

7. The Valencell Website contains various white papers, which relate to its biometric sensor solutions. Valencell offers such white papers in exchange for various identifying information regarding the downloader. On information and belief, Apple repeatedly accepted this offer, but obtained such white papers by providing fictitious information. On March 27, 2013 and May 5, 2014, one or more Apple agents downloaded the “PerformTek Precision Biometrics: Engaging the Burgeoning Mobile Health and Fitness Market” white paper from Valencell using fictitious names. On March 10, 2014 and April 23, 2015, one or more Apple agents downloaded the “Earbud-Based Sensor for the Assessment of Energy Expenditure, Heart Rate, and VO2 max” white paper from Valencell using fictitious names. On April 1, 2015 an Apple agent downloaded the “Earbud-Based Sensor for the Assessment of Energy Expenditure, Heart Rate, and VO2 max” white paper from Valencell using a fictitious name.

8. On information and belief, the following Apple agents accessed the Valencell Website: Brian Land, Matt Last, Nancy “Wren” Dougherty, Roger Miller, Thomas Pham, Mark Bagnola, and Mitch VanBruggen. Each of these individuals was involved in the design and/or implementation of the Apple Watch. Moreover, each of these individuals was involved in the design and/or implementation of the heart sensor in the Apple Watch.

9. On information and belief, Apple accessed the Valencell Website to obtain information regarding the structure and operation of PerformTek-Powered products. In June 2013, Apple met with Valencell employees, including Dr. Steven LeBoeuf, to discuss incorporating PerformTek-Powered features into some of Apple’s products. The Valencell Website provides notice that PerformTek-Powered products require a license to Valencell’s patents, including the patents-in-suit. Apple reviewed this notice and requested Valencell provide it with PerformTek-Powered products.

10. On information and belief, in or around the summer of 2013, Valencell demonstrated a prototype PerformTek-Powered watch to approximately 15 Apple employees. The back of the watch included a heart-rate monitor that was substantially similar to the Apple Watch. One or more of the Apple employees in attendance was involved in the design and/or implementation of the Apple Watch.

11. On information and belief, in or around August 2013, Apple received PerformTek-Powered products. Between September 2013 and March 2014, Apple conducted detailed testing on these products, including an analysis of the product circuitry.

12. On information and belief, Apple expressed great interest in Valencell's wrist-based heart sensor technology. Throughout 2014, Apple repeatedly requested information from Valencell regarding such technology. Apple did not sell any wrist-based products at that time. The only wrist-based product that Apple sells is the Apple Watch. The Apple Watch was the only wrist-based product that Apple was working on in 2014. In December 2014, Apple met with Valencell employees, including Dr. LeBoeuf, to discuss Valencell's wrist-based technology.

13. On information and belief, Apple began shipping the Apple Watch on April 24, 2015. Since at least that date, Apple has sold the Apple Watch in the United States. The Apple Watch contains a heart rate sensor, which it uses to calculate the pulse of the end user.

14. On information and belief, Apple solicited technical information and know-how from Valencell on the false premise that it wished to license Valencell's PerformTek Technology. Apple did not have an intention of licensing Valencell's PerformTek Technology. Instead, Apple's interaction with Valencell was fueled by a business decision that the benefits of infringing upon Valencell's patented technology outweigh the risk of being caught and ultimately forced to pay damages. This practice is consistent with the statement by Apple CEO Steve Jobs that Apple has "always been shameless about stealing great ideas." Further,

Apple is knowingly using Valencell's patented technology in an effort to achieve a licensing rate that is below a reasonable royalty.

**COUNT I**  
**(Infringement of U.S. Patent No. 8,923,941)**

15. Valencell incorporates paragraphs 1 through 14 herein by reference.

16. Valencell is the assignee of the '941 patent, entitled "Methods and apparatus for generating data output containing physiological and motion-related information," with ownership of all substantial rights in the '941 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements. A true and correct copy of the '941 patent is attached as Exhibit A.

17. The '941 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

18. Apple has and continues to directly infringe one or more claims of the '941 patent in this judicial district and elsewhere in North Carolina and the United States without the consent or authorization of Valencell, by or through their making, having made, offering for sale, selling, importing, and/or using wearable devices incorporating a heart rate sensor, including, but not limited to the Apple Watch. Apple's infringement has been willful.

19. The Apple Watch directly infringes at least claim 14 of the '941 patent.

20. The Apple Watch is a wearable device and includes a housing and a chipset enclosed within the housing. The chipset includes at least one PPG sensor, one motion sensor, and one signal processor that is configured to process signals from the motion sensor and the PPG sensor to reduce motion artifacts from the PPG signals. The Apple Watch housing includes at least one window that optically exposes the at least one PPG sensor to a body of a subject

wearing the device. The Apple Watch housing includes a non-air light transmissive material in optical communication with the at least one PPG sensor and the window.

21. Valencell has been damaged as a result of Apple's infringing conduct described in this Count. Apple is, thus, liable to Valencell in an amount that adequately compensates Valencell for Apple's infringements, 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. 8,886,269)**

22. Valencell incorporates paragraphs 1 through 21 herein by reference.

23. Valencell is the assignee of the '269 patent, entitled "Wearable light-guiding bands for physiological monitoring," with ownership of all substantial rights in the '269 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements. A true and correct copy of the '269 patent is attached as Exhibit B.

24. The '269 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

25. Apple has and continues to directly infringe one or more claims of the '269 patent in this judicial district and elsewhere in North Carolina and the United States without the consent or authorization of Valencell, by or through their making, having made, offering for sale, selling, importing, and/or using wearable devices incorporating a heart rate sensor, including, but not limited to the Apple Watch. Apple's infringement has been willful.

26. The Apple Watch directly infringes at least claim 1 of the '269 patent.

27. The Apple Watch is a monitoring device and includes a band that encircles a portion of the subject's body. The band includes a generally cylindrical outer body portion and a

generally cylindrical inner body portion secured together in concentric relationship. The inner body portion includes a light transmissive material and has outer and inner surfaces. The inner body portion includes a layer of cladding material near the inner body portion inner surface with at least one window formed in the cladding material that serves as a light-guiding interface to the body of the subject. The Apple Watch includes at least one optical emitter and at least one optical detector attached to the band. The light transmissive material is in optical communication with the at least one optical emitter and the at least one optical detector and is configured to deliver light from the at least one optical emitter to one or more locations of the body of the subject via the at least one window and to collect light from one or more locations of the body of the subject via the at least one window and deliver the collected light to the at least one optical detector.

28. Valencell has been damaged as a result of Apple's infringing conduct described in this Count. Apple is, thus, liable to Valencell in an amount that adequately compensates Valencell for Apple's infringements, 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 III**  
**(Infringement of U.S. Patent No. 8,929,965)**

29. Valencell incorporates paragraphs 1 through 28 herein by reference.

30. Valencell is the assignee of the '965 patent, entitled "Light-guiding devices and monitoring devices incorporating same," with ownership of all substantial rights in the '965 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements. A true and correct copy of the '965 patent is attached as Exhibit C.

31. The '965 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

32. Apple has and continues to directly infringe one or more claims of the '965 patent in this judicial district and elsewhere in North Carolina and the United States without the consent or authorization of Valencell, by or through their making, having made, offering for sale, selling, importing, and/or using wearable devices incorporating a heart rate sensor, including, but not limited to the Apple Watch. Apple's infringement has been willful.

33. The Apple Watch directly infringes at least claim 1 of the '965 patent.

34. The Apple Watch has a sensor for detecting and/or measuring physiological information from a subject. The Apple Watch includes a housing, at least one optical emitter that is supported by the housing, at least one optical detector that is supported by the housing, and a first light guide that is supported by the housing. The first light guide is in optical communication with the at least one optical emitter. The first light guide comprises a distal end having an exposed end surface that is configured to engage a portion of a body of the subject. The first light guide is configured to deliver light from the at least one optical emitter directly into the body of the subject via the exposed end surface thereof. The Apple Watch includes a second light guide that is supported by the housing. The second light guide is in optical communication with the at least one optical detector. The second light guide includes a distal end having an exposed end surface that is configured to engage a portion of the body of the subject. The second light guide is configured to collect light directly from the body of the subject via the exposed end surface thereof and deliver collected light to the at least one optical detector.

35. Valencell has been damaged as a result of Apple's infringing conduct described in this Count. Apple is, thus, liable to Valencell in an amount that adequately compensates



Valencell for Apple's infringements, 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 IV**  
**(Infringement of U.S. Patent No. 8,989,830)**

36. Valencell incorporates paragraphs 1 through 35 herein by reference.

37. Valencell is the assignee of the '830 patent, entitled "Wearable light-guiding devices for physiological monitoring," with ownership of all substantial rights in the '830 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements. A true and correct copy of the '830 patent is attached as Exhibit D.

38. The '830 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

39. Apple has and continues to directly infringe one or more claims of the '830 patent in this judicial district and elsewhere in North Carolina and the United States without the consent or authorization of Valencell, by or through their making, having made, offering for sale, selling, importing, and/or using wearable devices incorporating a heart rate sensor, including, but not limited to the Apple Watch. Apple's infringement has been willful.

40. The Apple Watch directly infringes at least claim 1 of the '830 patent. The Apple Watch has a monitoring device configured to be attached to the body of a subject. The Apple Watch includes an outer layer and an inner layer secured together. The inner layer includes light transmissive material and has inner and outer surfaces. The Apple Watch includes a base secured to at least one of the outer and inner layers. The base includes at least one optical emitter and at least one optical detector. The Apple Watch includes a layer of cladding material near the outer surface of the inner layer. The Apple Watch includes at least one window formed in the layer of

cladding material that serves as a light-guiding interface to the body of the subject. The light transmissive material is in optical communication with the at least one optical emitter and the at least one optical detector. The light transmissive material is configured to deliver light from the at least one optical emitter to the body of the subject along a first direction and to collect light from the body of the subject and deliver the collected light in a second direction to the at least one optical detector, and the first and second directions are substantially parallel.

41. Valencell has been damaged as a result of Apple's infringing conduct described in this Count. Apple is, thus, liable to Valencell in an amount that adequately compensates Valencell for Apple's infringements, 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 V**  
**(Breach of Contract I)**

42. Valencell incorporates paragraphs 1 through 41 herein by reference.

43. On the Valencell Website, Valencell offers to provide certain white papers available for download in exchange for the organization, name, and email address of the recipient. Valencell receives this information via a form on the Valencell Website. This information has value to Valencell as it demonstrates industry recognition of Valencell's technological achievements and can inform negotiations.

44. Apple accepted Valencell's offer to provide a white paper on March 27, 2013 from IP address 17.202.109.239, but did not provide the organization, name, and email address of the recipient. A valid contract existed between Apple and Valencell whereby Valencell would provide the "PerformTek Precision Biometrics: Engaging the Burgeoning Mobile Health and Fitness Market" white paper in exchange for the organization, name, and email address of the

recipient. Apple breached this contract by not providing the organization, name, and email address of the recipient.

45. Valencell has been damaged as a result of the breach of contract identified in this Count.

**COUNT VI**  
**(Breach of Contract II)**

46. Valencell incorporates paragraphs 1 through 45 herein by reference.

47. On the Valencell Website, Valencell offers to provide certain white papers available for download in exchange for the organization, name, and email address of the recipient. Valencell receives this information via a form on the Valencell Website. This information has value to Valencell as it demonstrates industry recognition of Valencell's technological achievements and can inform negotiations.

48. Apple accepted Valencell's offer to provide a white paper on March 10, 2014 from IP address 17.216.30.100, but did not provide the organization, name, and email address of the recipient. A valid contract existed between Apple and Valencell whereby Valencell would provide the "Earbud-Based Sensor for the Assessment of Energy Expenditure, Heart Rate, and VO2 max" white paper in exchange for the organization, name, and email address of the recipient. Apple breached this contract by not providing the organization, name, and email address of the recipient.

49. Valencell has been damaged as a result of the breach of contract identified in this Count.

**COUNT VII**  
**(Breach of Contract III)**

50. Valencell incorporates paragraphs 1 through 49 herein by reference.

51. On the Valencell Website, Valencell offers to provide certain white papers available for download in exchange for the organization, name, and email address of the recipient. Valencell receives this information via a form on the Valencell Website. This information has value to Valencell as it demonstrates industry recognition of Valencell's technological achievements and can inform negotiations.

52. Apple accepted Valencell's offer to provide a white paper on April 1, 2015 from IP address 17.208.110.251, but did not provide the organization, name, and email address of the recipient. A valid contract existed between Apple and Valencell whereby Valencell would provide the "Validation of iRiver ON with PerformTek Sensor Technology Earbud Heart Rate Sensor" white paper in exchange for the organization, name, and email address of the recipient. Apple breached this contract by not providing the organization, name, and email address of the recipient.

53. Valencell has been damaged as a result of the breach of contract identified in this Count.

#### **COUNT VIII**

#### **(Unfair and Deceptive Trade Practices/Unfair Competition N.C.G.S § 75-1.1)**

54. Valencell incorporates paragraphs 1 through 53 herein by reference.

55. The actions of Apple as described above (separate and apart from the patent infringement acts) constitute unfair and deceptive trade practices and unfair competition affecting commerce and causing injury to the business and property of Valencell in violation of N.C.G.S § 75-1.1. Such actions include, but are not limited to, the misrepresentations regarding the identity of Apple's agents to Valencell. Such actions also include, but are not limited to, Apple's misrepresentations regarding a sincere interest in partnering with Valencell. Such

actions also include, but are not limited to, Apple's attempts to achieve a licensing rate that is below a reasonable royalty.

56. As a result of Apple's foregoing conduct, Valencell suffered actual damages.

### **JURY DEMAND**

Valencell hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

### **PRAYER FOR RELIEF**

Valencell requests that the Court find in its favor and against Apple, and that the Court grant Valencell the following relief:

- a. A judgment in favor of Valencell and against Apple on each of Valencell's claims;
- b. A judgment that Apple has directly infringed the patents-in-suit, contributorily infringed the patents-in-suit, and/or induced the infringement of the patents-in-suit;
- c. A preliminary and permanent injunction preventing Apple and its officers, directors, agents, servants, employees, attorneys, licensees, successors, and assigns, and those in active concert or participation with any of them, from directly infringing, contributorily infringing, and inducing the infringement of the patents-in-suit;
- d. A judgment that Apple's infringement of the patents-in-suit has been willful;
- e. A ruling that this case be found to be exceptional under 35 U.S.C. § 285, and a judgment awarding to Valencell its attorneys' fees incurred in prosecuting this action;
- f. A judgment and order requiring Apple to pay Valencell damages under 35 U.S.C. § 284, including supplemental damages for any continuing post-verdict infringement up until entry of the final judgment, with an accounting, as needed, and enhanced damages for willful infringement as provided by 35 U.S.C. § 284.
- g. A judgment and order requiring Apple to pay Valencell the costs of this action (including all disbursements);

- h. A judgment and order requiring Apple to pay Valencell pre-judgment and post-judgment interest on the damages awarded;
- i. A judgment and order requiring that in the event a permanent injunction preventing future acts of infringement is not granted, that Plaintiffs be awarded a compulsory ongoing licensing fee;
- j. A judgment and order requiring Apple to specifically perform its contractual obligations to Valencell;
- k. That this Court treble the damages of Valencell pursuant to § 75-16;
- l. That this Court award attorney's fees to Valencell pursuant to § 75-16.1; and
- m. That Valencell be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: January 4, 2016

Respectfully submitted,

/s/ Lynne A. Borchers

Lynne A. Borchers (N.C. Bar No. 32386)

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*Attorneys for Plaintiff Valencell, Inc.*

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that on January 4, 2016, I electronically filed the foregoing with the Clerk of Court for the United States District Court for the Eastern District of North Carolina using the CM/ECF Filing System, which will send notification via electronic means to all counsel of record.

This 4th day of January, 2016.

/s/ Lynne A. Borchers

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