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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

VENKEE COMMUNICATIONS, LLC,

Plaintiff,

v.

BELKIN INTERNATIONAL, INC.,

Defendant.

Case No.: 2:18-cv-7824

COMPLAINT FOR PATENT INFRINGEMENT

JURY TRIAL DEMANDED

Plaintiff VenKee Communications, LLC ("Plaintiff" or "VenKee") files this Complaint against Belkin International, Inc. ("Defendant" or "Belkin") seeking damages and other relief for patent infringement, and alleges with knowledge to its own acts, and on information and belief as to other matters, as follows:

I. NATURE OF ACTION

1. This is an action for patent infringement arising under Title 35 of the United States Code, seeking monetary damages and other relief against Defendant due to its infringement of United States Patent No. 6,504,515 (the "'515 Patent") (the "Patent-in-Suit") in accordance with 35 U.S.C. §271.

II. PARTIES

2. VenKee is a limited liability company organized and existing under the laws of the State of Texas, having its principal place of business at 5068 West Plano Parkway, Suite 300, Plano, Texas 75093.

3. Defendant is a California corporation with its principal place of business at 12045 E. Waterfront Drive, Playa Vista, California 90094.

4. Belkin has been on notice of infringement of the '515 Patent since at least on or about May 15, 2018 when VenKee sent to Ms. Jo Greenberg, Belkin Deputy General Counsel at Belkin International, Inc. 12045 Waterfront Dr., Los Angeles, CA 90094, correspondence ("the Correspondence") notifying Belkin of a nonlimiting example of Belkin products and services infringing at least Claim 1 of the '515 Patent:

> Belkin products, such as minimal-input minimal-output ("MIMO") access points that comply with IEEE 802.11ac and 802.11n specifications, have infringed at least claim 1 of the '515 Patent. A specific example of a Belkin product that infringed the '515 Patent includes, but is not limited to, the AC 1800 DB Wi-Fi Dual-Band AC+ Gigabit Router.

Ex. 4 at 1.

III. JURISDICTION AND VENUE

5. This is an action under the patent laws of the United States, 35 U.S.C. §§1, et seq. This Court has subject matter jurisdiction over this action pursuant to

28 U.S.C. §§1331 and 1338(a). Venue is proper under 28 U.S.C. §§1391(a) & (c), and 1400(b).

6. This Court has personal jurisdiction over Defendant under the laws of the State of California, including the California long-arm statute, CAL. CODE OF CIVIL PROCEDURE §410.10.

7. Plaintiff's claims arise directly from Defendant's business contacts and other activities in the State of California and in the Central District of California: Defendant is present within or has minimum contacts within the State of California and the Central District of California; Defendant has purposefully availed itself of the privileges of conducting business in the State of California and in the Central District of California; Defendant has sought protection and benefit from the laws of the State of California; and Defendant regularly conducts business within the State of California and within the Central District of California.

8. Defendant directly or through intermediaries, makes, uses, offers for sale, imports, sells, advertises or distributes products and services in the United States, the State of California, and the Central District of California. This Court also has personal jurisdiction over Defendant because Defendant has committed acts of patent infringement in California, including within this District.

9. Defendant has regularly and systematically conducted and solicited business in this District by and through at least sales and offers for sale of Defendant's products and services.

10. Defendant has been, and currently is, continuously and systematically conducting business in this District and throughout California.

11. Defendant has systematically and continuously harmed Plaintiff in this District by infringing one or more claims of the '515 Patent.

12. Venue is proper in this District because, inter alia, Defendant maintains a regular and established place of business in this judicial District.

13. Belkin has a regular and established place of business at 12045 E. Waterfront Drive, Playa Vista, California 90094.

IV. PATENT-IN-SUIT

U.S. Patent No. 6,504,515

14. On May 1, 2001, Harris Corp. filed United States Patent Application No. 09/846,786 entitled "High Capacity Broadband Cellular/PCS Base Station Using a Phased Array Antenna" with the United States Patent and Trademark Office ("USPTO").

15. Application No. 09/846,786 is a continuation application of United States Patent Application No. 09/138,491, which Harris Corp. filed on Aug. 24, 1998, which issued as United States Patent No. 6,226,531.

16. Application No. 09/846,786 issued as the '515 Patent on January 7, 2003. A true and correct copy of the '515 Patent is attached hereto as "Exhibit 1" and is incorporated herein by reference.

17. The USPTO Reexamined the '515 Patent twice:[1]

a. Upon the completion of the first Reexamination, the USPTO issued a first Reexamination certificate on May 8, 2014 in which the patentability of claims 1-2, 4-5, and 7-9 were confirmed – the other claims were not reexamined.

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[1] ExParte Reexamination takes a fresh look at the novelty and nonobviousness of all subject patent claims without presuming validity. The Reexamination is carried out by Examiners other than those involved in the original examination. Manual of Patent Examination Procedure, §2209 [R-07.2015] Fewer than 15,000 of the approximately 10 million United States ever issued have been reexamined. https://www.uspto.gov/sites/default/files/documents/ex_parte_historical_stats_roll_up.pdf (last accessed July 23, 2018). Probably, only a few handful of patents have been through the Reexamination process twice.

b. Upon the completion of the second Reexamination, the USPTO issued a second Reexamination certificate on March 31, 2015 in which Claims 1 and 7 were determined to be patentable as amended, and Claims 2, 4, 5, 8, and 9 were determined to be patentable based on the amendments to Claims 1 and 7 – Claims 3, 6, and 10 were not reexamined.

18. The ’515 Patent is presumed valid.

19. Plaintiff is the sole owner of the ’515 Patent.

20. The ’515 Patent is directed to systems and methods for increasing the capacity of broadband base stations without a significant increase in hardware by combining a set of wideband digital radios with a phased array antenna to provide higher channel reuse and higher trunking efficiency. *See* ’515 Patent, col. 1, ll. 9-16.

21. Some prior wideband radio systems had limited capacity in a multiple base station environment due to co-channel interference. *Id.* at col. 1, 19-28. As a consequence, these prior wideband radio systems suffered significant disadvantages compared to narrowband systems. *Id.* at col. 1, ll. 29-39.

22. One way to increase the capacity of wideband radios is to implement a sectorized scheme employing directional antennas to subdivide spatial coverage. While increasing capacity with sectorized antennas reduces potential interference, this approach suffers from “reduced channel use” and from reduced “trunking efficiency.” *Id.* at col. 1, ll. 40-53.[2]

23. The ’515 Patent describes how the disclosed systems overcame the disadvantages of prior systems and describes methods and systems for increasing the capacity of broadband base stations, without a significant increase in hardware, by combining a set of wideband digital radios with a phased array antenna to provide higher channel reuse and higher trunking efficiency. *Id.* at col. 1, ll. 9-16.

[2] “Trunking” includes techniques used in data communications transmission systems to provide many users with access to a network by sharing multiple lines or frequencies.

24. As explained in the specification of the ’515 Patent, the system and methods described provide a high capacity base station that combines wideband digital radio equipment with a phased array antenna to provide dynamic beam steering via the phased antenna array without a significant increase in hardware cost. *Id.* at col. 1, ll. 57-62.

25. The system described by the ’515 Patent contrasts with conventional wideband radio systems, and the described system and methods provide an improved approach to wideband digital radio communication. *See, e.g.,* ’515 Patent, col. 1, l. 63 – col. 2, l. 53.

26. The ’515 Patent does not preempt the field of wideband radio communication. As discussed in the BACKGROUND OF THE INVENTION section of the ’515 Patent, other wideband radio communication techniques exist. *Id.* at col. 1, ll. 19-53.

27. The claims of the ’515 Patent are not directed to a method of organizing human activity or to a fundamental economic practice long prevalent in our system of commerce. The claims of the ’515 Patent are directed toward systems and methods that solve a technical problem – how to increase capacity of wideband digital radios while reducing co-channel interference without a significant increase in hardware costs. *Id.* at col. 1, l. 19 – col. 2, ll. 53.

28. The ’515 Patent describes a system that increases the capacity of digital base stations while reducing co-channel interference without a significant increase in hardware costs. *Id.*

29. By increasing capacity of a wideband digital radio base station, the ’515 Patent describes a technical solution to a technical problem that is intrinsically tied to wireless communication systems. *Id.*

30. The ’515 Patent also describes improvements to wideband digital radio base stations. As an example, rather than providing an omnidirectional base station that suffers from co-channel interference or a sectorized base station that suffers

from reduced channel reuse, the '515 Patent describes a high capacity wideband digital radio base station with a phased array antenna that provides dynamic beam steering resulting in increased capacity. *Id*. at col. 1, ll. 19-62.

31. The '515 Patent also discloses multiple inventive concepts and improvements over prior wideband digital radio systems. *Id*. at col. 2, l. 55 – col. 6, l. 20; Figs. 1-4.

32. As demonstrated by its frequent citation by the USPTO in other later-issued patents and pending patent applications involving wireless digital communication, the '515 Patent represents a fundamental technical improvement involving wideband digital radio base stations. Specifically, the '515 Patent has been cited during the prosecution of over eleven subsequently issued U.S. patents and pending U.S. patent applications.

V. COUNT I

Infringement of U.S. Patent No. 6,504,515

33. Plaintiff hereby incorporates by reference the preceding paragraphs of this Complaint as if fully set forth here.

34. Defendant makes, uses, sells, imports, or offers for sale in the United States, without authority, products, equipment, or services that infringe one or more claims of the '515 Patent, including without limitation, the AC 1800 DB Wi-Fi Dual-Band AC+ Gigabit Router (Accused Products). *See* http://www.belkin.com/us/p/P-F9K1118/ (last accessed August 1, 2018). Ex. 2, pp. 1-6.

35. The Accused Products comply with the IEEE 802.11n and the IEEE 802.11ac industry specifications. Ex. 2 at p. 5 ("Specifications" "IEEE 802.11n IEEE 802.11ac (draft)" "AC 1800 DB is backwards compatible with wireless 'G' and 'N' technology.").

36. Defendant has been and continues to directly infringe, either literally or under the doctrine of equivalents, at least Claim 1 of the '515 Patent by making, using, offering to sell, importing, or selling the Accused Products.

37. Claim 1 of the ’515 Patent reads:

> 1. A base station comprising:
>
> a phased array antenna containing antenna elements distributed in a multi-dimensional spatial array;
>
> a plurality of wideband digital radios having an operational bandwidth that contains all communication channels of said base station, each coupled to at least one antenna element of said phased array antenna and being adapted to perform receive channel signal processing in which the digital representation of the entire spectrum for each antenna element is divided into receive channels for a respective waveform of interest, and to perform transmit channel signal processing in which digital representations of individual channels are combined into a single transmission channel.

’515 Patent 2nd Reexamination Certificate (2015) col. 1, l. 22 – col. 2, l. 4.

38. The Accused Products, which include the AC 1800 DB Wi-Fi Dual-Band AC+ Gigabit Router, include base stations having phased array antennas and wideband digital radios having an operational bandwidth that contains all communication channels of the base station. Ex. 2 at p. 4 (“Fastest Dual-Band Speeds Get the fastest dual-band speeds for video streaming and gaming-up to 300Mbps (2.4GHz) + 1.3Gbps (5GHz)† for delivering maximum speed to multiple devices.” “High Powered Signal Exclusive MultiBeam antenna technology provides maximum coverage virtually anywhere in the home.”).

39. The Accused Products include multiple antenna elements to support multiple-input and multiple-output (“MIMO”) operation.

1. MIMO
2. 4 GIGABIT PORTS
3. MODEM PORT
4. USB CONNECTION INDICATORS
5. 2 USB 2.0 PORTS
6. RESET BUTTON
7. POWER PORT
8. AIR VENTS

Ex. 2 at p. 3.

40. The antenna elements of the Accused Products are physically separated from each other and form a multi-dimensional spatial array. The ’515 Accused Products support beamforming, indicating that the antennas form a phased array antenna. Ex. 2 at 4 (“Exclusive Multi Beam antenna technology minimizes dead spots while optimizing video streaming to multiple devices.”).

41. The ’515 Accused Products include multiple wideband digital radios covering the 2.4 GHz and 5 GHz frequency bands. Ex. 2 at 4 (“The AC1800 DB operates 4.3x faster than ‘N’ technology with combined speeds up to 300Mbps (2.4GHz) + 1.3Gbps (5GHz)*.”). The frequency bands include multiple channels, and the multiple wideband digital radios have an operational bandwidth spanning the multiple channels.

42. The '515 Accused Products support multiple user MIMO (MU-MIMO), which requires multiple radio/antenna chains. Ex. 2 at p. 4. Each of the multiple radios is coupled to at least one antenna element. Ex. 2 at p. 2 ("Multi Beam antenna technology minimizes dead spots while optimizing video streaming to multiple devices.").

43. For the Accused Products, "receive" channel signal processing corresponds to the uplink direction in 802.11n and 802.11ac.

44. The Accused Products support channel bonding, which enables the use of multiple 20MHz sub-channels as a single larger channel, such as a 40MHz channel or an 80MHz channel. Ex. 3 at p. 3 (https://www.belkin.com/us/support-article?articleNum=5358 (last accessed August 6, 2018) ("The Belkin AC 1800 DB Wi-Fi Dual-Band AC+ Gigabit Router, F9K1118 is compatible with 802.11ac**,** 802.11b**,** 802.11g**,** 802.11n**,** and 802.11a**.** It supports the 2.4 GHz and 5 GHz frequencies, at the same time supporting the 20 MHz, 40 MHz and 80 MHz channel widths.")). Therefore, the radios of the Accused Products are adapted to perform receive channel signal processing when 40MHz or 80MHz channels are used, such that the digital spectral representation for an antenna element is made up of respective receive channels representing waveforms of interest.

45. For the Accused Products, "transmit" channel signal processing corresponds to the downlink direction in 802.11n and 802.11ac. The 802.11n and 802.11ac industry specifications support channel bonding, which supports the use of multiple 20MHz sub-channels as a single larger channel, such as a 40MHz channel or an 80MHz channel. Matthew S. Gast, 802.11n Survival Guide (O'Reilly Media Inc. 2012) at pp. 61-62; Matthew S. Gast, 802.11ac Survival Guide (O'Reilly Media Inc. 2013) at pp. 40, 47. Ex. 4. The radios of the Accused Products are adapted to perform transmit channel signal processing when 40MHz or 80MHz channels are used, in which digital representations of multiple individual 20MHz channels are combined into a single 40MHz or 80MHz transmission channel.

46. The Accused Products support channel bonding, which enables the use of multiple 20MHz sub-channels as a single larger channel, such as a 40MHz channel or an 80MHz channel. Ex. 3 at p. 3 ("The Belkin AC 1800 DB Wi-Fi Dual-Band AC+ Gigabit Router, F9K1118 is compatible with 802.11ac, 802.11b, 802.11g, 802.11n, and 802.11a. It supports the 2.4 GHz and 5 GHz frequencies, at the same time supporting the 20 MHz, 40 MHz and 80 MHz channel widths.").

47. The radios of the Accused Products are adapted to perform transmit channel signal processing when 40MHz or 80MHz channels are used, such that digital representations of multiple individual 20MHz channels are combined into a single 40MHz or 80MHz transmission channel. Ex. 3 at p. 3.

48. As shown above, the Accused Products support MU-MIMO operation. In MU-MIMO, the Accused Products direct multiple individual spatial streams (i.e., individual channels) to multiple client devices at the same time over the same frequency spectrum (i.e., the spatial streams (individual channels) are combined into a single channel).

49. In view of the foregoing paragraphs, each and every element of Claim 1 of the '515 Patent is found in the Accused Products. By making, using, offering for sale, importing, or selling the Accused Products, Defendant has injured Plaintiff and is liable to Plaintiff for infringing one or more claims (including at least Claim 1) of the '515 Patent, pursuant to 35 U.S.C. §271(a).

50. Where acts constituting direct infringement of the '515 Patent are not performed by Defendant, such acts constituting direct infringement of the '515 Patent are performed by Defendant's customers or end-users.

51. Defendant has had actual knowledge of the '515 Patent since at least as early as the date of receipt of the Correspondence (on or about May 15, 2018). *See* Ex. 4 at p. 1.

52. At least as early as the date of receipt of the Correspondence, Defendant indirectly infringed and continues to infringe the '515 Patent within the United States

by inducement under 35 U.S.C. §271(b). By failing to cease making, using, selling, importing, or offering for sale the Accused Products, Defendant has knowingly and intentionally induced users of the Accused Products to directly infringe one or more claims of the '515 Patent, including, by: (1) providing instructions or information, for example on its publicly available website, to explain how to use the Accused Products in an infringing manner; and (2) touting these infringing uses of the Accused Products in advertisements, including but not limited to, those on its website.

53. At least as early as the date of receipt of the Correspondence, Defendant has indirectly infringed, and continues to indirectly infringe, the '515 Patent within the United States by contributory infringement under 35 U.S.C. §271(c). Defendant is aware, at least as early as the date of receipt of the Correspondence, that components of the Accused Products are a material and substantial part of the invention claimed by the '515 Patent, and that they are designed for a use that is both patented and infringing, and that has no substantial non-infringing uses.

54. Defendant's infringement of the '515 Patent has injured Plaintiff, and Plaintiff is entitled to recover damages from Defendant (or any successor entity to Defendant).

VI. RELIEF REQUESTED

WHEREFORE, Plaintiff respectfully requests that this Court:

A. Enter judgment that Defendant has infringed one or more claims of the '515 Patent literally or under the doctrine of equivalents;

B. Enter judgement that Defendant has induced infringement and continues to induce infringement of one or more claims of the '515 Patent;

C. Enter judgement that Defendant has contributed to and continues to contribute to infringement of one or more claims of the '515 Patent;

D. Enter judgement that Defendant's infringement has been willful;

E. Award Plaintiff past and future damages, to be paid by Defendant, in an amount no less than a reasonable royalty and adequate to compensate Plaintiff for such past and future damages, together with pre-judgment and post-judgment interest for Defendant's infringement of the '515 Patent through the date that such judgment is entered in accordance with 35 U.S.C. §284, and increase such award by up to three times the amount found or assessed in accordance with 35 U.S.C. §284;

F. Declare this case exceptional pursuant to 35 U.S.C. §285; and

G. Award Plaintiff its costs, disbursements, attorneys' fees, and such further and additional relief as is deemed appropriate by this Court.

VII. JURY DEMAND

Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiff hereby demands a trial by jury on all issues so triable.

Dated: September 7, 2018

Respectfully submitted,

/s/ Jeffrey Francis Craft

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