IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MIDLAND/ODESSA DIVISION

K.MIZRA LLC, Plaintiff, v. BROADCOM INC. AND BROADCOM CORP., Defendants.	CIVIL ACTION NO. 7:25-cv-164 **JURY TRIAL DEMANDED**

PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff K.Mizra LLC files this Complaint against Defendants Broadcom Inc. and Broadcom Corp. (collectively "Broadcom" or "Defendant") for infringement of U.S. Patent No. 8,374,154 ("the '154 patent") and U.S. Patent No. 8,873,531 ("the '531 patent") (collectively, the "Asserted Patents").

THE PARTIES

1. K.Mizra LLC ("K.Mizra") is a Delaware Limited Liability Company with a place of business at 777 Brickell Avenue, #500-96031, Miami, Florida 33131.

2. On information and belief, Broadcom Inc. is a corporation organized under the laws of Delaware with a regular and established place of business in this District, including at 2901 Via Fortuna Drive, Austin, Texas. Broadcom conducts business in Texas and in the Western District of Texas, directly or through intermediaries (including subsidiaries, distributors, affiliates, retailers, suppliers, integrators, customers, and others). Broadcom has appointed Corporation Service Company d/b/a CSC-Lawyers Incorporating Service Company, located at 211 E. 7th St., Suite 620, Austin, TX 78701, as its agent for service of process.

3. On information and belief, Broadcom Corp. is a corporation organized under the laws of Delaware with a regular and established place of business in this District, including at 2901 Via Fortuna Drive, Austin, Texas. Broadcom conducts business in Texas and in the Western District of Texas, directly or through intermediaries (including subsidiaries, distributors, affiliates, retailers, suppliers, integrators, customers, and others). Broadcom has appointed Corporation Service Company d/b/a CSC-Lawyers Incorporating Service Company, located at 211 E. 7th St., Suite 620, Austin, TX 78701, as its agent for service of process.

JURISDICTION AND VENUE

4. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1, *et seq*., including, without limitation, 35 U.S.C. §§ 271, 281, 284, and 285.

5. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. Broadcom is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and judicial district, including: (1) at least part of its infringing activities alleged herein; and (2) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from goods sold and services provided to Texas residents.

7. Venue is proper in this judicial district under 28 U.S.C. § 1400(b). Broadcom has committed acts of infringement in this district, including by selling products that support Wi-Fi 5, Wi-Fi 6 and/or Wi-Fi 7 (the "Accused Products") to consumers in this District or using devices that implement Wi-Fi 5, Wi-Fi 6 and/or Wi-Fi 7 at its offices in this District, and it has a regular and established place of business in this District, including at 2901 Via Fortuna Drive, Austin, Texas.

THE ASSERTED PATENTS

8. K.Mizra is the sole and exclusive owner of all right, title, and interest in the Asserted Patents and holds the exclusive right to take all actions necessary to enforce its rights in, and to, the Asserted Patents, including the filing of this patent infringement lawsuit. Indeed, K.Mizra owns all substantial rights in the Asserted Patents, including the right to exclude others and to recover damages for all past, present, and future infringements.

9. The '154 patent is entitled, "Device, System and Method of Simultaneously Communicating with a Group of Wireless Communication Devices." The '154 patent lawfully issued on February 12, 2013 and stems from U.S. Patent Application No. 12/645,648, which was filed on December 23, 2009.

10. The '531 patent is entitled, "Device, System and Method of Indicating Station-Specific Information within a Wireless Communication." The '531 patent lawfully issued on October 28, 2014 and stems from U.S. Patent Application No. 12/772,259, which was filed on May 3, 2010.

11. The claims of the Asserted Patents are directed to patent-eligible subject matter under 35 U.S.C. § 101. They are not directed to an abstract idea, and the technologies covered by the claims comprise systems and/or ordered combinations of features and functions that, at the time of invention, were not, alone or in combination, well-understood, routine, or conventional.

12. K.Mizra is not presently aware of any products for which marking with the Asserted Patents was required and has complied with the requirements of 35 U.S.C. § 287 at least by filing this complaint.

PRESUIT NOTICE

13. K. Mizra provided notice of infringement of the Asserted Patents by representative Broadcom products on multiple occasions—and to multiple Broadcom entities and individuals—prior to filing this lawsuit. No Broadcom or Broadcom-affiliated individual ever responded. Based on Broadcom's history of ignoring the pre-suit notices of patent infringement as detailed herein, it is believed that Broadcom will also ignore any jury verdict of infringement, and that Broadcom will not stop selling infringing products even if the jury finds infringement.

COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 8,374,154)

14. K.Mizra incorporates the preceding paragraphs herein by reference.

15. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

16. K.Mizra is the owner of all substantial rights, title, and interest in and to the '154 patent, including the right to exclude others and to enforce, sue, and recover damages for past, present, and future infringements.

17. The '154 patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on February12, 2013, after full and fair examination.

18. Broadcom has infringed (and continues to infringe) one or more claims of the '154 patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import, Accused Products, which include (but are not limited to) Broadcom BCM47722, BCM6765, BCM43740, BCM43720, BCM67263, BCM6726, BCM6715, BCM6756, BCM6757, BCM6753, BCM6710, BCM6750, BCM6752, BCM47622, BCM6755, BCM43694, BCM43684, BCM49408, BCM43525, BCM47452, BCM4366, BCM43460, BCM4360, BCM4389,

BCM4398, and BCM4390. Upon information and belief, each Accused Product supports Wi-Fi communications according to the 801.11ac specifications.

Direct Infringement (35 U.S.C. § 271(a))

19. Broadcom directly infringes one or more claims of the '154 patent in this District and elsewhere in Texas and the United States.

20. To this end, Broadcom directly infringes, either by itself or via its agent(s), at least claim 18 of the '154 patent under 35 U.S.C. § 271(a) by using (including through testing or demonstration), selling, offering to sell, and/or importing Accused Products. Furthermore, Broadcom made and sold the Accused Products outside of the United States and either delivered those products to its customers, distributors, and/or subsidiaries in the United States, or, in the case that it delivered the Accused Products outside of the United States, it did so intending and/or knowing that those products were destined for the United States and/or designed and designated for sale in the United States, thereby directly infringing the '154 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013).

21. By way of illustration only, the Accused Products meet each and every element of claim 18 of the '154 patent. The Accused Products include or are associated with memory that stores instructions for implementing wireless communications according to 802.11ac (Wi-Fi 5) standards (i.e., the Accused Products include "[a] computer program product comprising a non-transitory storage medium having stored thereon instructions").

22. The Accused Products include instructions that, when executed, result in "reserving, by a wireless communication unit, a wireless communication medium for a time period." For example, as evidenced by the 802.11ac standards, the Accused Products include

instructions that cause a wireless access point to transmit a VHT NDP Announcement frame, which is a control frame that, among other things, reserves a WLAN channel for a period indicated by a "Duration" field.

8.3.1.20 VHT NDP Announcement frame format

The frame format of the VHT NDP Announcement frame is shown in Figure 8-29j.

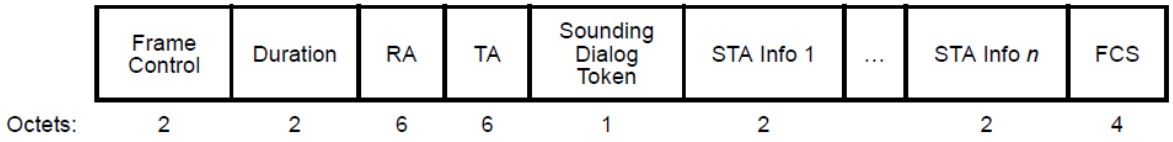

Figure 8-29j—VHT NDP Announcement frame format

IEEE 802.11ac-2013, p. 44.

23. The Accused Products include instructions that, when executed, result in a wireless communication unit "during the reserved time period, transmitting at least one beamforming-training initiation frame from the wireless communication unit to a group of plurality of wireless communication devices using one or more addresses assigned to the plurality of wireless communication devices in the group." For example, as evidenced by the 802.11ac standards, the Accused Products include instructions that cause a wireless access point unit to transmit a VHT NDP frame ("beamforming-training initiation frame") to a group of STAs represented by the GroupID subfield of the VHT-SIG-A field included in the VHT NDP frame.

22.3.12 VHT preamble format for sounding PPDUs

NDP is the only VHT sounding format.

The format of a VHT NDP PPDU is shown in Figure 22-28.

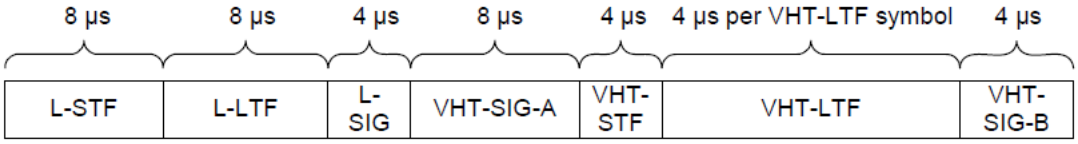

Figure 22-28—VHT NDP format

NOTE—The number of VHT-LTF symbols in the NDP is determined by the SU NSTS field in VHT-SIG-A.

The VHT NDP PPDU has the following properties:

— uses the VHT PPDU format but without the Data field
— is a VHT SU PPDU as indicated by the VHT-SIG-A field
— has the data bits of the VHT-SIG-B field set to a fixed bit pattern (see 22.3.8.3.6)

IEEE 802.11ac-2013, p. 295.

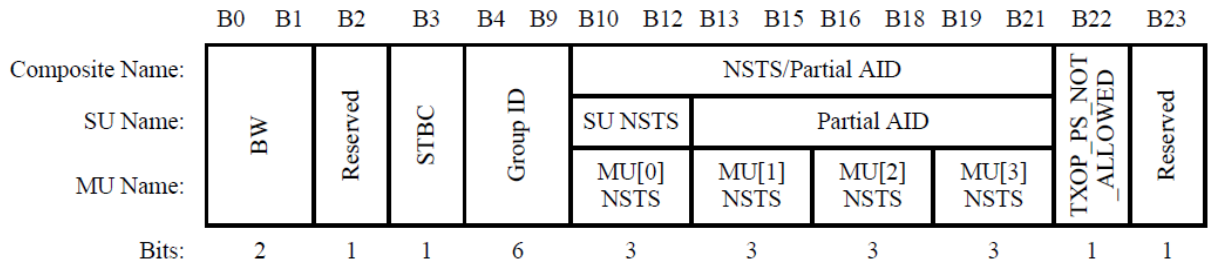

Figure 22-18—VHT-SIG-A1 structure

IEEE 802.11ac-2013, p. 259.

24. The Accused Products include instructions that, when executed, result in "receiving, at the wireless communication unit, two or more feedback frames from two or more wireless communication devices of the plurality of wireless communication devices." For example, as evidenced by the 802.11ac standards, the Accused Products include instructions that cause a wireless communication unit to, after initiating a feedback sequence by transmitting the

VHT NDP announcement frame, receive VHT compressed beamforming feedback from addressed STAs.

> **9.31.5.2 Rules for VHT sounding protocol sequences**
>
> A VHT beamformer shall initiate a sounding feedback sequence by transmitting a VHT NDP Announcement frame followed by a VHT NDP after a SIFS. The VHT beamformer shall include in the VHT NDP Announcement frame one STA Info field for each VHT beamformee that is expected to prepare VHT Compressed Beamforming feedback and shall identify the VHT beamformee by including the VHT beamformee's AID in the AID subfield of the STA Info field. The VHT NDP Announcement frame shall include at least one STA Info field.

IEEE 802.11ac-2013, p. 168.

> **22.3.11.2 Beamforming Feedback Matrix *V***
>
> Upon receipt of a VHT NDP sounding PPDU, the beamformee shall remove the space-time stream CSD in Table 22-11 from the measured channel before computing a set of matrices for feedback to the beamformer. The beamforming feedback matrix, $V_{k,u}$, found by the beamformee u for subcarrier k shall be compressed in the form of angles using the method described in 20.3.12.3.6. The angles, $\phi(k,\upsilon)$ and $\psi(k,u)$, are quantized according to Table 8-53e. The number of bits for quantization is chosen by the beamformee, based on the indication from the beamformer as to whether the feedback is requested for SU-MIMO beamforming or DL-MU-MIMO beamforming. The compressed beamforming feedback using 20.3.12.3.6 is the only Clause 22 beamforming feedback format defined.

IEEE 802.11ac-2013, p. 294.

25. The Accused Products include instructions that, when executed, result in "determining two or more beamforming schemes based on the two or more feedback frames, and simultaneously transmitting two or more different wireless communication transmissions from the wireless communication unit to the two or more wireless communication devices, respectively, using the two or more beamforming scheme." For example, as evidenced by the 802.11ac standards, the Accused Products include instructions that cause a wireless communication unit to use beamforming feedback received from beamformee STAs to compute steering matrices ("beamforming schemes") that are applied to respective DL signals transmitted to the STAs.

> SU-MIMO and DL-MU-MIMO beamforming are techniques used by a STA with multiple antennas (the beamformer) to steer signals using knowledge of the channel to improve throughput. With SU-MIMO beamforming all space-time streams in the transmitted signal are intended for reception at a single STA. With DL-MU-MIMO beamforming, disjoint subsets of the space-time streams are intended for reception at different STAs.
>
> …

For DL-MU-MIMO beamforming, the receive signal vector in subcarrier k at beamformee u, $y_{k,u} = [y_{k,0}, y_{k,1}, \ldots, y_{k,N_{RX_u}-1}]^T$, is shown in Equation (22-101), where $x_k = [x_{k,0}^T, x_{k,1}^T, \ldots, x_{k,N_{user}-1}^T]^T$ denotes the transmit signal vector in subcarrier k for all N_{user} beamformees, with $x_{k,u} = [x_{k,0}, x_{k,1}, \ldots, x_{k,N_{STS_u}-1}]^T$ being the transmit signal for beamformee u.

$$y_{k,u} = H_{k,u} \times [Q_{k,0}, Q_{k,1}, \ldots, Q_{k,N_{user}-1}] \times x_k + n \quad (22\text{-}101)$$

where

$H_{k,u}$ is the channel matrix from the beamformer to beamformee u in subcarrier k with dimensions $N_{RX_u} \times N_{TX}$

N_{RX_u} is the number of receive antennas at beamformee u

$Q_{k,u}$ is a steering matrix for beamformee u in subcarrier k with dimensions $N_{TX} \times N_{STS_u}$

N_{user} is the number of VHT MU PPDU recipients (see Table 22-6)

n is a vector of additive noise and may include interference

The DL-MU-MIMO steering matrix $Q_k = [Q_{k,0}, Q_{k,1}, \ldots, Q_{k,N_{user}-1}]$ can be determined by the beamformer using the beamforming feedback matrices for subcarrier k from beamformee u, $V_{k,u}$, and SNR information for subcarrier k from beamformee u, $SNR_{k,u}$, where $u = 0, 1, \ldots, N_{user} - 1$. The steering matrix that is computed (or updated) using new beamforming feedback matrices and new SNR information from some or all of participating beamformees might replace the existing steering matrix Q_k for the next DL-MU-MIMO data transmission. The beamformee group for the MU transmission is signaled using the Group ID field in VHT-SIG-A (see 22.3.8.3.3 and 22.3.11.4).

IEEE 802.11ac-2013, pp. 293-94.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

26. In addition and/or in the alternative to its direct infringements, Broadcom has indirectly infringed one or more claims of the ’154 patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

27. At a minimum, Broadcom had knowledge of the ’154 patent and its infringements since notice was provided by K. Mizra and/or the filing of this complaint. Since receiving notice of its infringements, Broadcom actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b) and continues to induce such infringement presently and into the future. Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the ’154 patent. On information and belief,

Broadcom intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products (e.g., advertisements and instructive materials that promote the support and use of Wi-Fi 5, Wi-Fi 6, and/or Wi-Fi 7 by Accused Products); creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available datasheets supporting use of the Accused Products that promote their features, specifications, and applications; providing technical documentation and tools for the Accused Products, such as white papers, brochures, and/or manuals that describe how to implement support of Wi-Fi communications by the Accused Products); promoting the incorporation of the Accused Products into end-user products; testing and certifying related to conformance with Wi-Fi standards for Accused Products; and/or by providing technical support and/or related services for the Accused Products to purchasers in the United States.

Damages

28. K.Mizra has been damaged as a result of Broadcom's infringing conduct described in this Count. Broadcom is, thus, liable to K.Mizra in an amount that adequately compensates it for Broadcom'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.

29. On information and belief, despite having knowledge of the '154 patent and knowledge that it directly and/or indirectly infringes one or more claims of the '154 patent, Broadcom has nevertheless continued its infringing conduct and has disregarded an objectively high likelihood of infringement. Broadcom's infringing activities relative to the '154 patent have,

thus, been, and continue to be, willful, wanton, and deliberate in disregard of K.Mizra's rights with respect to the '154 patent, justifying enhanced damages under 35 U.S.C. § 284.

COUNT II

(INFRINGEMENT OF U.S. PATENT NO. 8,873,531)

30. K.Mizra incorporates the preceding paragraphs herein by reference.

31. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

32. K.Mizra is the owner of all substantial rights, title, and interest in and to the '531 patent, including the right to exclude others and to enforce, sue, and recover damages for past, present, and future infringements.

33. The '531 patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on October 28, 2014, after full and fair examination.

34. Broadcom has infringed (and continues to infringe) one or more claims of the '531 patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import, Accused Products, which include (but are not limited to) Broadcom BCM47722, BCM6765, BCM43740, BCM43720, BCM67263, BCM6726, BCM6715, BCM6756, BCM6757, BCM6753, BCM6710, BCM6750, BCM6752, BCM47622, BCM6755, BCM43694, BCM43684, BCM49408, BCM43525, BCM47452, BCM4366, BCM43460, BCM4360, BCM4389, BCM4398, and BCM4390. Upon information and belief, each Accused Product supports Wi-Fi communications according to the 801.11ac specifications.

Direct Infringement (35 U.S.C. § 271(a))

35. Broadcom directly infringes one or more claims of the '531 patent in this District and elsewhere in Texas and the United States.

36. To this end, Broadcom directly infringes, either by itself or via its agent(s), at least claim 16of the ’531 patent under 35 U.S.C. § 271(a) by using (including through testing or demonstration), selling, offering to sell, and/or importing Accused Products. Furthermore, Broadcom made and sold the Accused Products outside of the United States and either delivered those products to its customers, distributors, and/or subsidiaries in the United States, or, in the case that it delivered the Accused Products outside of the United States, it did so intending and/or knowing that those products were destined for the United States and/or designed and designated for sale in the United States, thereby directly infringing the ’531 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013).

37. By way of illustration only, the Accused Products meet each and every element of claim 16 of the ’531 patent. The Accused Products include or are associated with memory that stores instructions for implementing wireless communications according to 802.11ac (Wi-Fi 5) standards (i.e., the Accused Products are “an article including a non-transitory storage medium having stored thereon instructions”).

38. The Accused Products include instructions that, when executed, result in “transmitting beamforming configuration information to a plurality of stations, prior to transmitting a beamformed portion of a wireless communication frame to the plurality of stations using a plurality of respective beamforming configurations.” For example, as evidenced by the 802.11ac standards, the Accused Products include instructions that cause a wireless access point to transmit a VHT PPDU, which includes a VHT-SIG-A field that carries information related to beamforming configuration, to a plurality of STAs.

22.3.2 VHT PPDU format

A single PPDU format is defined for this PHY: the VHT PPDU format. Figure 22-4 shows the VHT PPDU format.

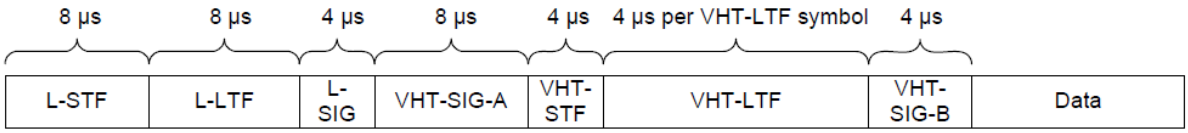

Figure 22-4—VHT PPDU format

IEEE 802.11ac-2013, p. 229. As evidenced above, VHT-SIG-A is transmitted before Data in a VHT PPDU. A Q matrix is applied to the Data portion of a VHT PPDU (i.e., "a beam formed portion of a wireless communication frame") to provide spatial mapping (beamforming) to the Data portion of the VHT PPDU on a per-user bases (i.e., "using a plurality of respective beamforming configurations").

22.3.4.10 Construction of the Data field in a VHT MU PPDU

22.3.4.10.1 General

For an MU transmission, the PPDU encoding process is performed on a per-user basis up to the input of the Spatial Mapping block except CSD (as described in 22.3.8.3.2). All user data is combined and mapped to the transmit chains in the Spatial Mapping block.

22.3.4.10.2 Using BCC

A Data field with BCC encoding is constructed using the process described in 22.3.4.9.1 before the spatial mapping block and repeated for each user that uses BCC encoding.

22.3.4.10.3 Using LDPC

A Data field with LDPC encoding is constructed using the process described in 22.3.4.9.2 before the spatial mapping block and repeated for each user that uses LDPC encoding.

22.3.4.10.4 Combining to form a VHT MU PPDU

The per-user data is combined as follows:

a) Spatial Mapping: The Q matrix is applied as described in 22.3.10.11.1. The combining of all user data is done in this block.

b) Phase rotation: Apply the appropriate phase rotations for each 20 MHz subchannel as described in 22.3.7.4 and 22.3.7.5.

c) IDFT: Compute the inverse discrete Fourier transform.

d) Insert GI and apply windowing: Prepend a GI (SHORT_GI or LONG_GI) and apply windowing as described in 22.3.7.4.

e) Analog and RF: Up-convert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 22.3.7.4 and 22.3.8 for details.

IEEE 802.11ac-2013, p. 243.

39. As evidenced by the 802.11ac standards, the "beamforming configuration information defines the plurality of beamforming configurations." For example, the VHT-SIG-A field defines beamforming configurations for multiple STAs, including configurations provided in the fields MU[0-3] NSTS and MU[1-3] Coding.

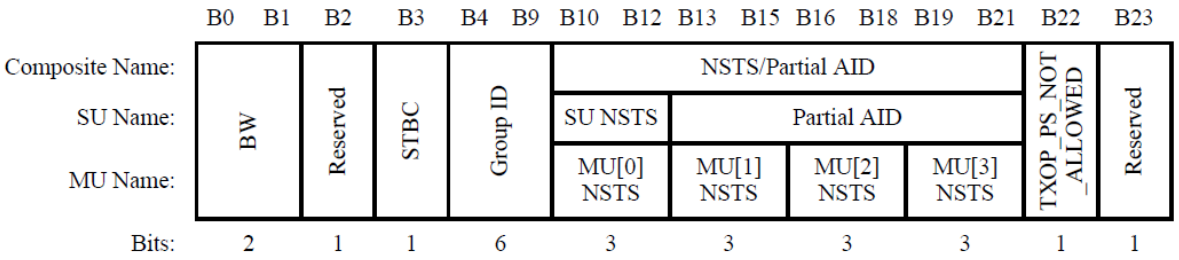

Figure 22-18—VHT-SIG-A1 structure

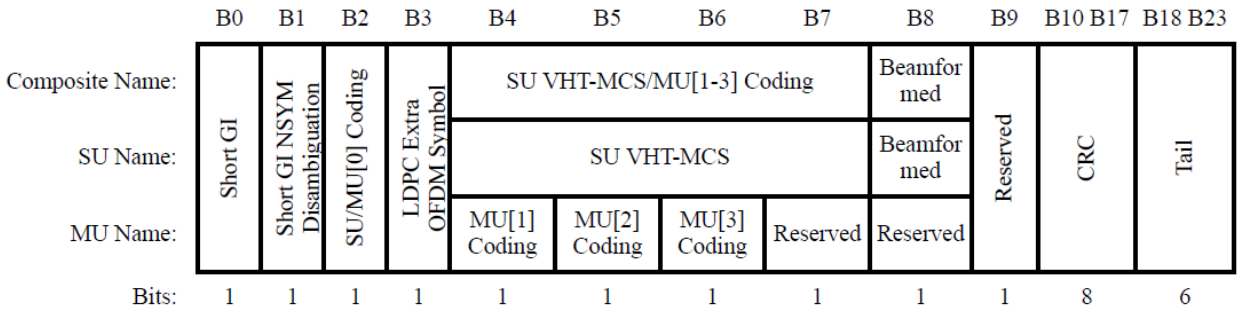

Figure 22-19—VHT-SIG-A2 structure

The VHT-SIG-A field contains the fields listed in Table 22-12. The mapping of the fields is also described in Table 22-12. Note that the mapping of the STBC field, the NSTS/Partial AID field, the SU/MU[0] Coding field, the SU VHT-MCS/MU[1-3] Coding field, and the Beamformed field is different for VHT SU and MU PPDUs.

IEEE 802.11ac-2013, p. 259.

40. As discussed above, the Accused Products include instructions that, when executed, result in "transmitting beamforming configuration information to a plurality of stations." As further evidenced by the 802.11ac standards, the "transmitting the beamforming configuration information comprises transmitting the beamforming configuration information as part of a non-beamformed portion of said wireless communication frame." For example, as illustrated below, spatial mapping (beam forming) is not applied to the VHT-SIG-A field, as evidenced by the fact that the Q matrix is not applied when constructing VHT-SIG-A.

22.3.4.5 Construction of VHT-SIG-A

The VHT-SIG-A field consists of two symbols, VHT-SIG-A1 and VHT-SIG-A2, as defined in 22.3.8.3.3 and is constructed as follows:

a) Obtain the CH_BANDWIDTH, STBC, GROUP_ID, PARTIAL_AID (SU only), NUM_STS, GI_TYPE, FEC_CODING, MCS (SU only), BEAMFORMED (SU only), NUM_USERS, and TXOP_PS_NOT_ALLOWED from the TXVECTOR. Add the reserved bits, append the calculated CRC, then append the N_{tail} tail bits as shown in 22.3.8.3.3. This results in 48 uncoded bits.

b) BCC encoder: Encode the data by a convolutional encoder at the rate of R=1/2 as described in 18.3.5.6

c) BCC interleaver: Interleave as described in 18.3.5.7.

d) Constellation mapper: BPSK modulate the first 48 interleaved bits as described in 18.3.5.8 to form the first symbol of VHT-SIG-A. BPSK modulate the second 48 interleaved bits and rotate by 90° counter-clockwise relative to the first symbol to form the second symbol of VHT-SIG-A.

e) Pilot insertion: Insert pilots as described in 18.3.5.10.

f) Duplication and phase rotation: Duplicate VHT-SIG-A1 and VHT-SIG-A2 over each 20 MHz of the CH_BANDWIDTH. Apply the appropriate phase rotation for each 20 MHz subchannel as described in 22.3.7.4 and 22.3.7.5.

g) IDFT: Compute the inverse discrete Fourier transform.

h) CSD: Apply CSD for each transmit chain as described in 22.3.8.2.1.

i) Insert GI and apply windowing: Prepend a GI (LONG_GI) and apply windowing as described in 22.3.7.4.

j) Analog and RF: Up-convert the resulting complex baseband waveform associated with each transmit chain to an RF signal according to the center frequency of the desired channel and transmit. Refer to 22.3.7.4 and 22.3.8 for details.

IEEE 802.11ac-2013, pp. 237-38; *Cf* IEEE 802.11ac-2013, p. 243 (showing application of spatial multiplexing to Data field).

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

41. In addition and/or in the alternative to its direct infringements, Broadcom has indirectly infringed one or more claims of the ’531 patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products..

42. At a minimum, Broadcom had knowledge of the ’531 patent and its infringements since notice was provided by K. Mizra and/or the filing of this complaint. Since receiving notice

of its infringements, Broadcom actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b) and continues to induce such infringement presently and into the future. Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '531 patent. On information and belief, Broadcom intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products (e.g., advertisements and instructive materials that promote the support and use of Wi-Fi 5, Wi-Fi 6, and/or Wi-Fi 7 by Accused Products); creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available datasheets supporting use of the Accused Products that promote their features, specifications, and applications; providing technical documentation and tools for the Accused Products, such as white papers, brochures, and/or manuals that describe how to implement support of Wi-Fi communications by the Accused Products); promoting the incorporation of the Accused Products into end-user products; testing and certifying related to conformance with Wi-Fi standards for Accused Products; and/or by providing technical support and/or related services for the Accused Products to purchasers in the United States.

Damages

43. K.Mizra has been damaged as a result of Broadcom's infringing conduct described in this Count. Broadcom is, thus, liable to K.Mizra in an amount that adequately compensates it for Broadcom'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.

44. On information and belief, despite having knowledge of the '531 patent and knowledge that it directly and/or indirectly infringes one or more claims of the '531 patent, Broadcom has nevertheless continued its infringing conduct and has disregarded an objectively high likelihood of infringement. Broadcom's infringing activities relative to the '531 patent have, thus, been, and continue to be, willful, wanton, and deliberate in disregard of K.Mizra's rights with respect to the '531 patent, justifying enhanced damages under 35 U.S.C. § 284.

WILLFUL INFRINGEMENT

45. Broadcom was placed on notice of its infringement prior to the filing of this complaint, yet Broadcom ignored the notice of infringement. On information and belief, Broadcom knew of the Asserted Patents' scope, yet continued to manufacture, use, and sell infringing products. At the very least, Broadcom was (and is) willfully blind to the Asserted Patents and its application to the Accused Products. For at least these reasons, Broadcom's infringing activities have been, and continue to be, willful, wanton, and deliberate in disregard of K. Mizra's rights with respect to the Asserted Patents, justifying enhanced damages under 35 U.S.C. § 284. Based on Broadcom's history of ignoring the notice of infringement, it is believed that Broadcom will continue willfully infringing even after the filing of this lawsuit, and regardless of any jury verdict or appeal. Thus, Broadcom has committed and/or will commit pre-suit, post-suit, post-verdict, and post-appeal willful infringement.

CONCLUSION

46. K.Mizra is entitled to recover from Broadcom the damages sustained by K.Mizra as a result of Broadcom's wrongful acts and willful infringements in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

47. K.Mizra has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute may give rise to an exceptional case within the meaning of 35 U.S.C. § 285, and, in such case, K.Mizra is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

JURY DEMAND

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

PRAYER FOR RELIEF

K.Mizra respectfully requests that the Court find in its favor and against Broadcom, and that the Court grant K.Mizra the following relief:

(i) Judgment that one or more claims of the Asserted Patents have been infringed, either literally and/or under the doctrine of equivalents, by Broadcom;

(ii) Judgment that one or more claims of the Asserted Patents have been willfully infringed, either literally and/or under the doctrine of equivalents, by Broadcom;

(iii) Judgment that Broadcom account for and pay to K.Mizra all damages and costs incurred by K.Mizra because of Broadcom's infringements and other conduct complained of herein, including an accounting for any sales or damages not presented at trial;

(iv) Judgment that Broadcom account for and pay to K.Mizra a reasonable, ongoing, post-judgment royalty because of Broadcom's infringements, including continuing infringing activities, and other conduct complained of herein;

(v) Judgment that K.Mizra be granted pre-judgment and post-judgment interest on the damages caused by Broadcom's infringements and other conduct complained of herein;

(vi) Judgment that this case is exceptional under the provisions of 35 U.S.C. § 285 and award enhanced damages; and

(vii) Such other and further relief as the Court deems just and equitable.

Dated: April 14, 2025

Respectfully submitted,

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