**IN THE UNITED STATES DISTRICT COURT**
**FOR THE SOUTHERN DISTRICT OF NEW YORK**

| | |
|---|---|
| **JSDQ MESH TECHNOLOGIES LLC,**<br><br>**Plaintiff,**<br><br>**v.**<br><br>**UBIQUITI INC. (fka UBIQUITI NETWORKS, INC.),**<br><br>**Defendant.** | **Case No.: 1:21-cv-03430**<br><br>**JURY TRIAL DEMANDED** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff JSDQ Mesh Technologies LLC complains of Defendant Ubiquiti Inc. (fka Ubiquiti Networks, Inc.) as follows:

## NATURE OF LAWSUIT

1. This is a claim for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

## THE PARTIES

2. JSDQ Mesh Technologies LLC ("JSDQ" or "Plaintiff") is a Delaware limited liability company with its principal place of business at 401 Lake Avenue, Round Lake Beach, Illinois 60073.

3. JSDQ is the named assignee of, owns all right, title and interest in, and has standing to sue for infringement of United States Reissue Patent No. RE43,675, entitled "Wireless Radio Routing System," which issued on September 18, 2012 (the "'675 Patent") (a true and correct copy is attached as Exhibit A); and United States Reissue Patent No. RE44,607, entitled "Wireless Mesh Routing Method," which issued on November 19, 2013 (the "'607 Patent") (a true and correct copy is attached as Exhibit B) (collectively, the "Patents-in-Suit").

4. Ubiquiti Inc. (fka Ubiquiti Networks, Inc.) ("Ubiquity" or "Defendant") is a Delaware corporation with its principal place of business at 685 Third Avenue, 27th Floor, New York, New York 10017.

5. Ubiquity claims on its website (available at http://www.ui.com and related urls) the use of mesh technology, Access Points ("APs") that automatically mesh roam, mesh-multi hop routing, directional signals, beamforming technologies, and plug & play mesh technology.

6. Ubiquity provides home and enterprise wireless mesh networking solutions and professional services such as plan management, network commissioning, network design center, installation, and training to homes and businesses throughout the United States and this Judicial District.

## JURISDICTION AND VENUE

7. This Court has exclusive jurisdiction over the subject matter of this Complaint under 28 U.S.C. §§ 1331 and 1338(a).

8. Personal jurisdiction over Defendant is proper in this Court because Ubiquity maintains its principal place of business in New York, has minimum contacts with the State of New York, and has purposefully availed itself of the privileges of conducting business in the State of New York.

9. Venue in this Judicial District is proper under 28 U.S.C. § 1400(b) because Ubiquity resides in this Judicial District.

## BRIEF HISTORY OF JSDQ AND ATTEMPTS TO ENGAGE UBIQUITY

10. JSDQ is wholly owned by inventor, Mr. Jerry Schloemer, and patent attorney, Mr. David Quinlan. Mr. Schloemer is a prolific inventor of mesh related technologies as a 35-year industry veteran. Nearly a decade before a working group would even form at IEEE, necessary

solutions to the challenges of optimized mesh networks were disclosed in the JSDQ Patent Portfolio.

11. JSDQ has invested a great deal of time and money to develop and legally protect its intellectual property.

12. JSDQ attempted to engage Ubiquity in amicable discussions regarding the JSDQ Patent Portfolio outside of litigation by sending an initial letter via email and certified first class mail on July 23, 2019 and detailed follow up emails and letters between September 19, 2019 and April 7, 2020. Despite JSDQ's attempt to engage in discussions with Ubiquity, even after providing Ubiquity with representative claims and evidence of use information, Ubiquity refused to engage in meaningful discussions with JSDQ. JSDQ's only recourse was through the filing of this Complaint.

**THE ACCUSED WIRELESS ROUTING SYSTEMS**

13. Ubiquity has infringed certain method claims of the Patents-in-Suit through the use (in conjunction with the manufacture, sale, offer for sale, advertisement, importation, shipment, distribution, service, installation and/or maintenance) of Ubiquity's AmpliFi™ and UniFi® wireless mesh networking products, services and solutions – including hardware, software, and firmware components (*e.g.*, access points, routers, antennas and antenna technologies, mobile apps for iOS and/or Android, dedicated and/or cloud servers, and enterprise management controllers, etc.), associated therewith (herein referred to as the "Accused Wireless Routing Systems").

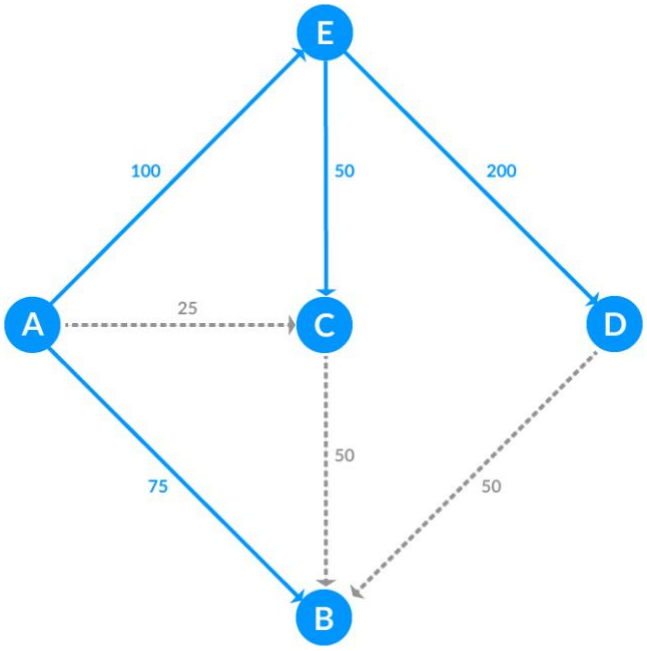
14. The Accused Wireless Routing Systems subject to this Complaint necessarily include all substantively similar products and any predecessor and/or successor versions of the foregoing that infringed the Patents-in-Suit (during the relevant time period).

15. After adequate discovery, JSDQ may seek leave to amend this Complaint to include additional details of infringement, if any, by other products hereafter discovered to infringe the Patents-in-Suit.

**UBIQUITI AMPLIFI MESH TECHNOLOGY**

16. Upon information and belief, Ubiquiti's AmpliFi Accused Wireless Routing Systems included at least the following known product lines: AmpliFi™ Mesh WiFi System, AmpliFi™ HD Mesh WiFi System, AmpliFi™ Gamers Edition, AmpliFi™ Instant Mesh WiFi System, AmpliFi™ HD Mesh Router. (https://www.ui.com/products/#amplifi).

17. As explained on the AmpliFi's blog under the title "What is Home Wi-Fi Mesh Technology" dated September 15, 2016, Ubiquiti's CTO states "Routers prioritize their paths by minimizing congestion and latency, and maximizing capacity. For example, router A communicates with router C via router E even though it has a direct path to router C. The direct path has a lower capacity in the example, 25, as compared to 50 if it relays the communication via router E."



AmpliFi mesh points are self-forming and self-healing and scan the environment to select the best path back to the AmpliFi router; even after mesh points choose their preferred paths back to the AmpliFi router, they still know about alternatives. Self-healing also comes into play if there are temporary obstructions to the wireless link. Ubiquiti further explains: "For example, if the link between the Router and Mesh Point-Bedroom 1 gets weaker temporarily, it can seamlessly shift over and relay via Mesh Point-Bedroom 2, until the obstruction no longer remains," as shown in the series of images below where the dotted lines are alternative paths and the waves are the best path at that time based on radio parameters:

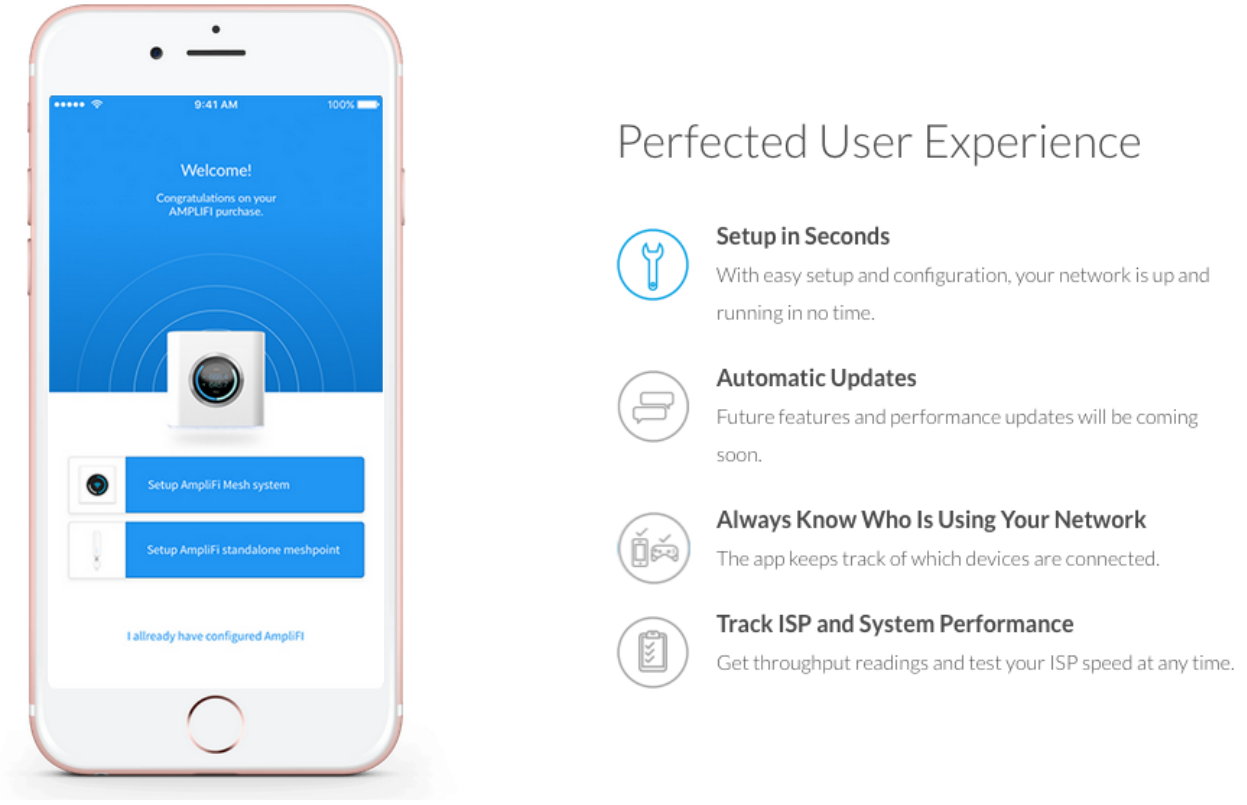

MP-Bedroom 2
Smartphone 1
Smart TV
1.3 Gbps
Smartphone 2
1.3 Gbps
195 Mbps
780 Mbps
585 Mbps
780 Mbps
975 Mbps
1.3 Gbps
WiFi Printer
MP-Bedroom 1
MP-Backyard
MP-Patio
WiFi Camera
Smart Thermostat
Laptop
Tablet


(See https://blog.amplifi.com/2016/09/15/what-is-home-wi-fi-mesh-technology/).

18. As explained on the AmpliFi's blog under the title "What's Under AmpliFi's Hood: MIMO Explained" dated October 14, 2016, Ubiquiti's CTO states: "MIMO allows multiple streams of data to be sent in parallel. Unlike other home Wi-Fi mesh systems, all AmpliFi Routers and Mesh Points use 3-stream MIMO, allowing three streams of data to be sent to a supporting device." "The wireless transmission is focused more in the direction of the client. Known as Beamforming, this allows us to dynamically focus the wireless energy in the relative direction of

the client device." Beamforming technologies create directional signals. (See https://blog.amplifi.com/2016/10/14/whats-under-amplifis-hood-mimo-explained/).

19. Ubiquiti's AmpliFi mesh provided all installation requirements for the customers as a plug and play solution. All AmpliFi customers were required to either download the AmpliFi app on to an iOS and/or Android device or to log in to the AmpliFi Internet Portal to set up and continue to operate the Accused Wireless Routing Systems. Furthermore, Ubiquiti made automatic updates for future features and performance updates for the Accused Wireless Routing System to AmpliFi customers using the AmpliFi App (https://help.amplifi.com/hc/en-us/articles/231456348-Firmware-Release-Notes):

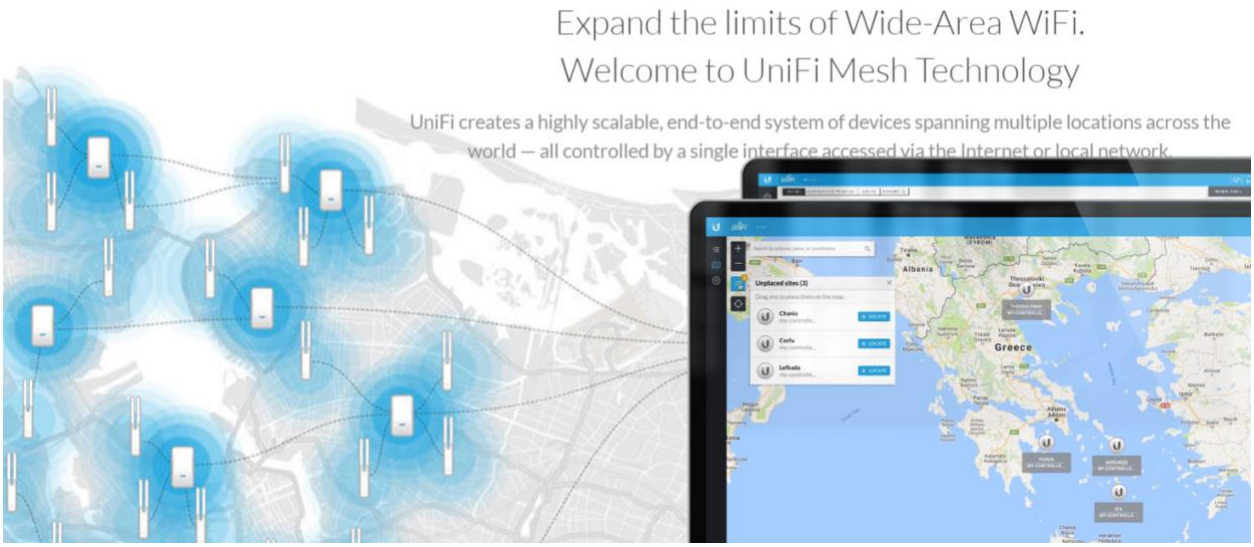



(See https://amplifi.com/app#feature).

**UBIQUITI UNIFI MESH TECHNOLOGY**

20. Upon information and belief, Ubiquiti's UniFi® Accused Wireless Routing Systems included at least the following known mesh product lines: UniFi® AC Mesh, UniFi Controller, UAP-AC-M, UAP-AC-M-P, UniFi Mobile App, UniFi Mesh Antenna, UniFi AP Flex HD, and all other UniFi Access Points with multi-hop mesh capabilities, and Ubiquiti directional antenna options used in a UniFi mesh network (https://www.ui.com/products/#unifi; https://unifi-network.ui.com/wi-fi; and https://www.ui.com/products/#airmax).

21. UniFi Mesh Technology provides plug and play mesh multi-hop networks using a variety of access points and directional signals that automatically mesh roam to maintain the quality of the network using measurements of radio parameters.




(See https://unifi-mesh.ui.com/).

DATASHEET

UniFi AC MESH

UniFi®

## Scalable Enterprise Wi-Fi Management

UniFi® is the revolutionary Wi-Fi system that combines enterprise performance, unlimited scalability, and a central management controller. The UniFi AC Mesh APs have a refined industrial design and can be easily installed using the included mounting hardware.

Easily accessible through any standard web browser and the UniFi mobile app (iOS or Android), the UniFi Controller software is a powerful software engine ideal for high-density client deployments requiring low latency and high uptime performance.

Use the UniFi Controller software to quickly configure and administer an enterprise Wi-Fi network – no special training required. RF map and performance features, real-time status, automatic UAP device detection, and advanced security options are all seamlessly integrated.

## Features

**Save Money and Save Time** UniFi comes bundled with a non-dedicated software controller that can be deployed on an on-site PC, Mac, or Linux machine; in a private cloud; or using a public cloud service. You also have the option of using the UniFi Cloud Key with built-in software.

**Powerful Hardware** The UniFi AC Mesh APs feature Wi-Fi 802.11AC with Plug & Play Mesh technology.

**Intuitive UniFi Controller Software** Configure and manage your APs with the easy-to-learn user interface.

**Expandable** Unlimited scalability: build wireless networks as big or small as needed. Start with one and expand to thousands while maintaining a single unified management system.

# Model Comparison

| | UAP-AC-M | UAP-AC-M-PRO |
|---|---|---|
| Environment | Indoor/Outdoor | Outdoor |
| Simultaneous Dual-Band | ✓ | ✓ |
| 2.4 GHz Radio Rate | 300 Mbps | 450 Mbps |
| 2.4 GHz MIMO | 2x2 | 3 x 3 |
| 5 GHz Radio Rate | 867 Mbps | 1300 Mbps |
| 5 GHz MIMO | 2x2 | 3 x 3 |
| Secondary Ethernet Port | | ✓ |
| PoE Mode | 24V Passive PoE 802.3af PoE: Alternative A | 802.3af PoE |
| Wall Mount | ✓ | ✓ |
| Pole Mount | ✓ | ✓ |
| Fast Mount | ✓ | |

# Use Cases

**Mesh Multi-Hop** A large outdoor area, such as a park with minimal infrastructure, can take advantage of a mesh network comprised of the UniFi AC Mesh models.

**Omnidirectional Coverage, Indoors or Outdoors** The UAP-AC-M includes adjustable dual-band omni antennas.

You have the option to use a 5 GHz omni antenna[1] for spot-beam coverage in high-density locations with numerous APs and clients, like a conference hall or event center.

**Directional Coverage, Outdoors** The UAP-AC-M is versatile.

You have the option to use a 5 GHz sector antenna[2] (wide beam in the azimuth plane and narrow in the elevation plane) for broad outdoor coverage.

**Maximum Coverage, Outdoors** The UAP-AC-M-PRO is ideal for applications requiring 3x3 MIMO data rates for close-in omni coverage.

**Temporary Installations** Deploy the UniFi AC Mesh models for outdoor installations requiring quick setup and takedown, such as a street fair, music festival, or concert venue.

[1] Different antenna gains are allowed for each regulatory domain or country. It is the installer's responsibility to check local regulations.

(See http://dl.ui.com/datasheets/unifi/UniFi_AC_Mesh_DS.pdf).

UniFi® | Antenna

Directional Dual-Band Antenna for UAP-AC-M

Model: UMA-D

Dual-Band, Dual-Polarity Optimized for 802.11ac

High Efficiency Directional Radiation Pattern

Three-Axis Ball Joint Mount for Precise Aiming

UBIQUITI NETWORKS

DATASHEET

UniFi® | Antenna

## Hardware Overview

The UniFi Antenna, model UMA-D, is an optional mesh antenna designed to work with the UniFi® AC Mesh AP, model UAP-AC-M. With dual-band support, the UMA-D expands range coverage and provides customized pattern shaping. It is available in single- and five-packs.

**Antenna Features** Optimized for 802.11ac, the UMA-D offers a high efficiency directional radiation pattern with dual polarity.

**Weather-Resistant Enclosure** Encased in UV-stabilized plastic, the UMA-D can be used indoors or outdoors.

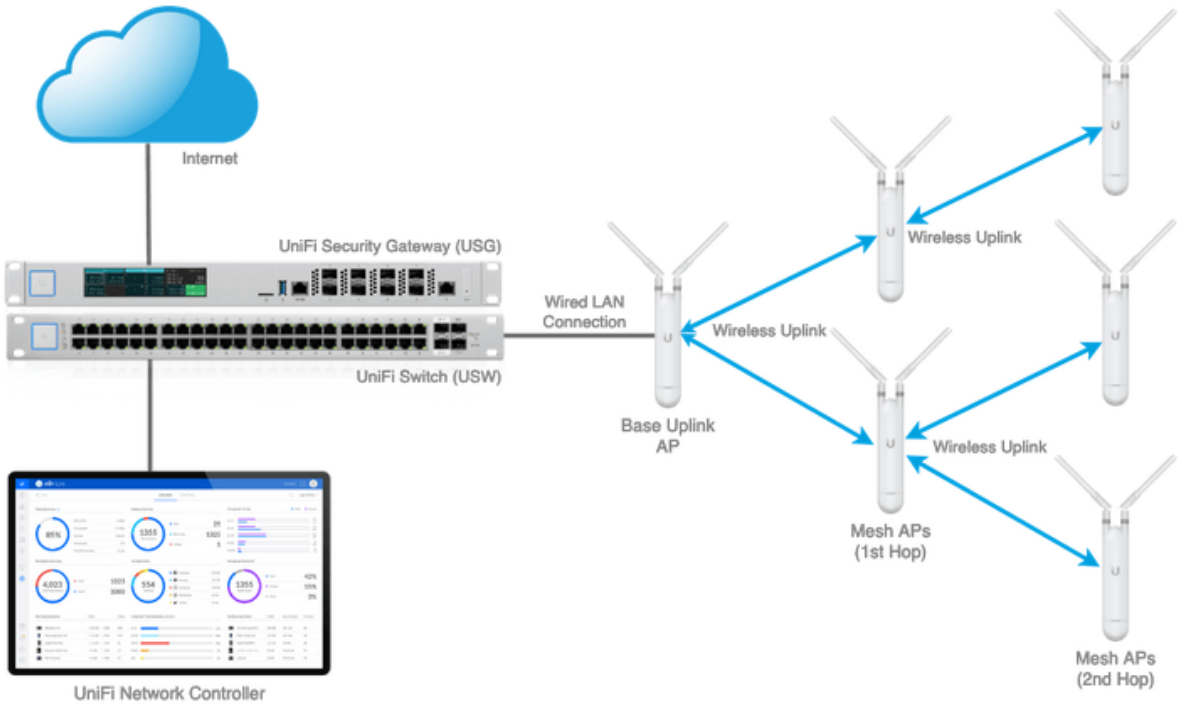
**Versatile Mounting** The UMA-D has a ball joint mount designed for precise aiming and can be mounted on a pole or wall.

**Compatibility** The UMA-D is a connectorized antenna that is compatible with the UAP-AC-M.

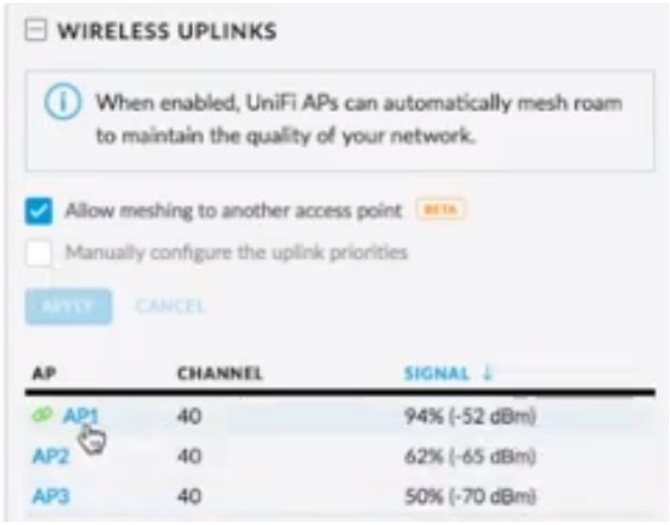
*Pole-Mount Installation*

(See https://dl.ubnt.com/datasheets/unifi_accessories/UniFi_UMA-D_DS.pdf).

**Multi-hop Wireless Uplink**: A deployment that uses a base station but has more than one level of wireless uplink with intermediate APs relaying data to and from the base station. When using multiple levels of APs, the uplink tiers can be referred to by root (base station), first hop, second hop, etc. See the example below:




(See https://help.ubnt.com/hc/en-us/articles/115002262328-UniFi-UAP-Configuring-Wireless-Uplink).




(See https://www.youtube.com/watch?v=ss27ePIHM48).

UniFi Access Points - Wireless Uplink Compatibility Matrix

| Model | Supports Wireless Uplink | Supports Multi-hop Wireless Uplink |
|---|---|---|
| UAP-BeaconHD | ✓ | ✓ |
| UAP-FlexHD | ✓ | ✓ |
| UWB-XG | ✓ | ✓ |
| UAP-XG | ✓ | ✓ |
| UAP-IW-HD | ✓ | ✓ |
| UAP-nanoHD | ✓ | ✓ |
| UAP-HD/SHD | ✓ | ✓* |
| UAP-AC-PRO | ✓ | ✓* |
| UAP-AC-LR | ✓ | ✓* |
| UAP-AC-LITE | ✓ | ✓* |
| UAP-AC-IW/IW-PRO | ✓ | ✓* |
| UAP-AC-EDU | ✓ | ✓* |
| UAP-AC-M | ✓ | ✓ |
| UAP-AC-M-PRO | ✓ | ✓ |

(See https://help.ui.com/hc/en-us/articles/115002262328-UniFi-UAP-Configuring-Wireless-Uplink).

22. Ubiquiti provided a UniFi controller software, mobile app, cloud key or web browser as a requirement for installation and further use as a mesh plug and play solution. All UniFi customers were required to download the UniFi controller software to set up and continually maintain, provide firmware updates, and use daily network management functions of the Accused Wireless Routing Systems. (See https://www.ui.com/download-software/).

## INFRINGEMENT BY DEFENDANT UBIQUITY

### INFRINGEMENT OF UNITED STATES REISSUE PATENT NO. RE 43,675

23. JSDQ realleges and incorporates by reference paragraphs 1 through 22, inclusive, as though fully set forth herein.

24. Ubiquity directly infringed independent method claim 15 of the ‘675 Patent (prior to its expiration on or about August 26, 2019).

**Claim 15**

25. The Accused Wireless Routing Systems provided a radio communication route among individual nodes capable of distribution arbitrarily relative to each other, in accordance with the limitations of claim 15 of the '675 Patent.

26. The Accused Wireless Routing Systems performed each of the limitations of claim 15 of the '675 Patent by:

(a) establishing radio links between respective pairs of said nodes, at least one said node using a directional radio signal transmitted from said node and received directly by another said node without regard to the relative locations of said nodes;

(b) measuring a value of a radio parameter of a said directional radio signal received by at least one said node;

(c) transmitting from said at least one node a radio signal with an associated routing message based on at least one measured value of the radio parameter; and

(d) assembling a radio communication route between an originating node and a destination node, said route being assembled by computers in a plurality of said nodes using routing messages received by said nodes, wherein said computers in said nodes assemble said route independently of any computer separate from said nodes in said route, and said route includes at least one route segment with a said node transmitting a directional radio signal.

27. Upon information and belief, Ubiquity likely infringed at least dependent method claims 17, 18, 19, 20 and 22 of the '675 Patent (prior to its expiration on or about August 26, 2019).

28. After adequate discovery, JSDQ reserves the right to assert allegations of infringement of additional method claims of the '675 Patent.

29. To the extent required by law, JSDQ has complied with the provisions of 35 U.S.C. § 287.

30. Ubiquity had notice of the '675 Patent and the likelihood of infringement thereof at least as early as July 23, 2019 pursuant to email and certified first class mail correspondence from JSDQ to Ubiquity's chief executive officer.

31. Ubiquity's infringement as described above has injured JSDQ and JSDQ is entitled to recover damages adequate to compensate it for such infringement, but in no event less than a reasonable royalty from April 19, 2015 to August 26, 2019.

**INFRINGEMENT OF UNITED STATES REISSUE PATENT NO. RE 44,607**

32. JSDQ realleges and incorporates by reference paragraphs 1 through 22, inclusive, as though fully set forth herein.

33. Ubiquity directly infringed independent method claims 3 and 11 of the '607 Patent (prior to its expiration on or about August 26, 2019).

**Claim 3**

34. The Accused Wireless Routing Systems provided at least two radio communication routes among individual nodes capable of distribution arbitrarily relative to each other, in accordance with the limitations of claim 3 of the '607 Patent.

35. The Accused Wireless Routing Systems performed each of the limitations of claim 3 of the '607 Patent by:

(a) establishing radio links between respective pairs of said nodes using radio signals transmitted from said nodes and received by other said nodes, wherein at least some of said radio signals include routing messages;

(b) using a directional radio signal transmitted from one said node in a directional link and received directly by the other said node in said directional link;

(c) measuring a parameter of radio signals received by at least some of said nodes;

(d) transmitting from at least some of said nodes radio signals with associated routing messages based on said measured parameter; and

(e) assembling radio communication routes between at least two originating nodes and at least one destination node, wherein computers in a plurality of said nodes use routing messages received by said nodes to assemble said routes independently of any computer separate from said nodes in said routes and without regard to the relative locations of said nodes in a said route, both said routes including at least one said directional link.

36. Upon information and belief, Ubiquity likely infringed at least dependent method claims 5, 6 and 7 of the '607 Patent (prior to its expiration on or about August 26, 2019).

**Claim 11**

37. The Accused Wireless Routing Systems provided at least two radio communication routes among individual nodes capable of distribution arbitrarily relative to each other, in accordance with the limitations of claim 11 of the '607 Patent.

38. The Accused Wireless Routing Systems performed each of the limitations of claim 11 of the '607 Patent by:

(a) establishing radio links between respective pairs of said nodes using radio signals transmitted from said nodes and received by other said nodes, wherein at least some of said radio signals include routing messages;

(b) using a directional radio signal transmitted from at least one said node in a directional link and received directly by the other said node in said directional link; and

(c) assembling radio communication routes between at least two originating nodes and at least one destination node, said routes being assembled by computers in a plurality of said nodes using routing messages received by said nodes, wherein said computers in said nodes assemble said routes independently of any computer separate from said nodes in said routes without regard to the relative locations of said nodes in a said route said originating nodes simultaneously receive communication signals from different originating remotes, and both said routes include at least one said directional link.

39. Upon information and belief, Ubiquity likely infringed at least dependent method claim 16 of the '607 Patent (prior to its expiration on or about August 26, 2019).

40. After adequate discovery, JSDQ reserves the right to assert allegations of infringement of additional method claims of the '607 Patent.

41. To the extent required by law, JSDQ has complied with the provisions of 35 U.S.C. § 287.

42. Ubiquity had notice of the '607 Patent and the likelihood of infringement thereof at least as early as July 23, 2019 pursuant to email and certified first class mail correspondence from JSDQ to Ubiquity's chief executive officer.

43. Ubiquity's infringement as described above has injured JSDQ and JSDQ is entitled to recover damages adequate to compensate it for such infringement, but in no event less than a reasonable royalty from April 19, 2015 to August 26, 2019.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff JSDQ Mesh Technologies LLC respectfully requests this Court to enter judgment against Defendant Ubiquiti Inc. (fka Ubiquiti Networks, Inc.) – and against each

of its subsidiaries, successors, parents, affiliates, officers, directors, agents, servants, employees, and all persons in active concert or participation with it – granting the following relief:

A. The entry of judgment in favor of Plaintiff and against Defendant;

B. An award of damages against Defendant adequate to compensate Plaintiff for the infringement that occurred from April 19, 2015 (six years prior to the filing of this action pursuant to 35 U.S.C. § 286) through the respective expirations of the Patents-in-Suit, but in no event less than a reasonable royalty as permitted by 35 U.S.C. § 284, together with prejudgment interest from the date the infringement began; and

C. Such other relief to which Plaintiff is entitled under the law and any other and further relief that this Court or a jury may deem just and proper.

**JURY DEMAND**

Plaintiff demands a trial on all issues presented in this Complaint.

Dated: April 19, 2021

Respectfully submitted,

*S/ Timothy J. Haller*

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