



3. Upon information and belief, Defendant TP-Link Corporation Limited (“TP-Link Corp.”) is a private limited company organized under the laws of Hong Kong, China, with its principal place of business located at Suite 901, New East Ocean Centre, Tsim Sha Tsui, Hong Kong, China. TP-Link Corp. is at least a related entity of TP-Link Tech. (e.g., having a direct or indirect subsidiary-parent or sister company relationship).

4. Upon information and belief, Defendant TP-Link International Ltd. (“TP-Link Intl”) is a private limited company organized under the laws of Hong Kong, with its principal place of business located at Room 901-902,9/F, New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kwun Tong, KL, Hong Kong, China, 518057. TP-Link Intl and TP-Link Corp. share the same corporate office in Hong Kong. TP-Link Intl is at least a related entity of TP-Link Tech. and TP-Link Corp. (e.g., having a direct or indirect subsidiary-parent or sister company relationship). TP-Link Corp., TP-Link Tech., and TP-Link Intl are collectively referred to as “TP-Link” or “Defendants.”

5. TP-Link was founded in 1996 and is “a global provider of reliable networking devices and accessories, involved in all aspects of everyday life.” *About TP-Link*, TP-LINK, <https://www.tp-link.com/us/about-us/corporate-profile/>. Moreover, “as the connected lifestyle continues to evolve, the company is expanding today to exceed the demands of tomorrow.” *Id.* On its global website, TP-Link states that it “is consistently ranked by analyst firm IDC as the No. 1 provider of Wi-Fi devices[], supplying distribution to more than 170 countries and serving billions of people worldwide.” *About TP-Link*, TP-LINK, <https://www.tp-link.com/en/about-us/corporate-profile/>.

6. Upon information and belief, Defendants are engaged in research and development, manufacturing, importation, distribution, sales, and related technical services for home and business networking, Internet of Things (“IoT”), and smart home products and components

(referred to collectively as the “TP-Link Products”). The TP-Link Products include WiFi, Mesh WiFi, and ZigBee networking devices, routers, network expansion devices, network switches, adapters, security cameras, smart plugs, smart lighting, smart switches, and related accessories and services. These TP-Link Products are manufactured outside the U.S. and then imported into the United States, distributed, and sold to end-users via the internet and in brick and mortar stores in the U.S., in Texas and the Eastern District of Texas.

7. Upon information and belief, TP-Link maintains a corporate presence in the United States, including in this judicial district, via at least its wholly-owned U.S.-based subsidiary or related entity TP-Link USA Corporation (“TP-Link USA”), which is a California corporation with its principal office located at 145 South State College Boulevard, Suite 200 Brea, CA 92821 and/or 10 Mauchly, Irvine, California 92618. On behalf and for the benefit of Defendants, TP-Link USA coordinates the importation, distribution, marketing, offers for sale, sale, and use of the TP-Link Products in the U.S. For example, TP-Link maintains distribution channels in the U.S. for TP-Link Products via online stores, distribution partners, retailers, reseller partners, solution partners, and other related service providers. *See Where to Buy*, TP-LINK, <https://www.tp-link.com/us/> (accessible via drop down menu “Where to Buy”); *see also Service Providers*, TP-LINK, <https://service-provider.tp-link.com/>. The TP-Link Products are offered and sold in the U.S. under at least Defendants’ “TP-Link®” “deco,” and “Kasa®” brands. *See, e.g., Products*, KASA SMART, <https://www.kasasmart.com/us/products/smart-plugs>.

8. TP-Link also recruits “TP-Link Brand Ambassadors” via a “Power User” program; these Brand Ambassadors are consumers and users of TP-Link Products that are recruited in the U.S. based on their social media presence and amount of use of TP-Link Products. *See TP-Link Brand Ambassador Program*, TP-LINK, <https://www.tp-link.com/us/brandambassador/>. These

brand ambassadors (also known as “influencers”) are compensated for promoting TP-Link Products on social media and participating in marketing campaigns to raise awareness of TP-Link Products and their respective brands, which, ultimately, increases sales.

9. As a result, via at least TP-Link’s established distribution channels operated and maintained by TP-Link USA in concert with Defendants TP-Link Tech., TP-Link Corp., and TP-Link Intl, TP-Link Products are distributed, sold, advertised, and used nationwide, including being sold to consumers via retail stores operating in Texas and this judicial district. Thus, Defendants do business in the U.S., the state of Texas, and in the Eastern District of Texas.

### **JURISDICTION AND VENUE**

10. This action arises under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others.

11. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

#### ***TP-Link Tech.***

12. Upon information and belief, TP-Link Tech. 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: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of the privilege of conducting those activities in this state and this judicial district and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this judicial district, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this judicial district vicariously through and/or in concert with its alter egos, intermediaries, agents, distributors, importers, customers, subsidiaries, and/or

consumers. For example, TP-Link Tech. is related to, owns, and/or controls subsidiaries (such as TP-Link USA) and business sectors (such as its Kasa Smart business) that have a significant business presence in the U.S. and in Texas. *See Where to Buy*, TP-LINK, <https://www.tp-link.com/us/> (identifying established channels of distribution via online stores, distribution partners, retailers, reseller partners, solution partners, and other related service providers). Such a presence furthers the development, design, manufacture, importation, distribution, sale, and use (including by inducement) of infringing TP-Link Products in Texas, including in this judicial district. For example, TP-Link Tech. is also the applicant for FCC registrations for the sale and use of TP-Link Products in the U.S., including being identified on labels as the manufacturing party. *See, e.g., Label Location*, FCCID.IO, *available for download via* <https://fccid.io/TE7HC4V2/Label/3-Label-and-location-4876532.pdf> (providing a copy of the label for TP-Link model no. AC1200 Whole Home Mesh Wi-Fi Unit).

13. This Court has personal jurisdiction over TP-Link Tech., directly and/or through the activities of TP-Link Tech.'s intermediaries, agents, related entities, distributors, importers, customers, subsidiaries, and/or consumers, including through the activities of Defendant TP-Link Corp., TP-Link Intl, and TP-Link USA. Through direction and control of these entities, TP-Link Tech. has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States, giving rise to this action and/or has established minimum contacts with Texas such that personal jurisdiction over TP-Link Tech. would not offend traditional notions of fair play and substantial justice.

14. Upon information and belief, TP-Link Tech. controls or otherwise directs and authorizes all activities of its subsidiaries and related entities, including, but not limited to Defendant TP-Link Corp., TP-Link Intl, and U.S.-based TP-Link USA. Directly via its agents in

the U.S. and via at least distribution partners, retailers (including national retailers), reseller partners, solution partners, brand ambassadors, and other service providers, TP-Link Tech. has placed and continues to place infringing TP-Link Products into the U.S. stream of commerce. For example, import records show that TP-Link Tech. delivers TP-Link Products to TP-Link USA in the U.S. *See, e.g., Supply Chain Intelligence about: Tp Link Technologies Co. Ltd., PANJIVA*, <https://panjiva.com/Tp-Link-Technologies-Co-Ltd/27804596> (showing at least two shipments to “TP Link USA Corporation” in January of 2021 consisting of, for example, “Kasa smart bulb” and other networking products). TP-Link Tech. has placed such products into the stream of commerce with the knowledge and understanding that such products are, will be, and continue to be sold, offered for sale, and/or imported into this judicial district and the State of Texas. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) (“[T]he sale [for purposes of § 271] occurred at the location of the buyer.”); *see also Semcon IP Inc. v. Kyocera Corporation*, No. 2:18-cv-00197-JRG, 2019 WL 1979930, at \*3 (E.D. Tex. May 3, 2019) (denying accused infringer’s motion to dismiss because plaintiff sufficiently plead that purchases of infringing products outside of the United States for importation into and sales to end users in the U.S. may constitute an offer to sell under § 271(a)).

15. TP-Link Tech. utilizes established distribution channels to distribute, market, offer for sale, sell, service, and warrant infringing products directly to consumers and other users, including providing links to via its own website to online stores, retailers, resellers, distributors, and solution partners offering such products and related services for sale. *See Where to Buy*, TP-LINK, <https://www.tp-link.com/us/>. Such TP-Link Products and services have been sold in retail stores, both brick and mortar and online, within this judicial district and in Texas, including well-known and widely used retailers Amazon.com, HSN, newegg.com, Sears, QVC, Micro Center,

BestBuy, Costco, Lowes, Nebraska Furniture Mart, The Home Depot, Office Depot, Target, Staples, Sam’s Club, Walmart, Conn’s Home Plus, Game Stop, and Brookstone. *See, e.g., TP-Link - Deco AC2200*, BEST BUY, <https://www.bestbuy.com/site/tp-link-deco-ac2200-tri-band-mesh-wi-fi-system-with-built-in-smart-hub-2-pack-white/6324964.p?skuId=6324964> (showing that TP-Link – Deco AC220 is offered for sale at BestBuy location at 190 E Stacy Rd Allen, TX 75002, i.e., in this judicial district). TP-Link Tech. also provides application software (“apps”), the “Deco App” and the “Kasa Smart” app for download and use in conjunction with and as a part of the wireless communication network that connects TP-Link Products and other network devices. These apps are available via digital distribution platforms operated by Apple Inc. and Google for download by users and execution on smartphone devices. *See, e.g., TP-Link Deco*, GOOGLE PLAY, [https://play.google.com/store/apps/details?id=com.tplink.tpm5&hl=en\\_US](https://play.google.com/store/apps/details?id=com.tplink.tpm5&hl=en_US) (offering the application for download and indicating that the application is offered by TP-Link Tech.’s subsidiary or related entity “TP-Link Corporation Limited”).

16. Based on TP-Link Tech.’s connections and relationship with these national retailers and digital distribution platforms, TP-Link Tech. knows that Texas is a termination point of the established distribution channel, namely online and brick and mortar stores offering TP-Link Products and related services and software to distribution partners, retailers (including national retailers), reseller partners, solution partners, brand ambassadors, service providers, consumers, and other users in Texas. TP-Link Tech., therefore, has purposefully directed its activities at Texas, and should reasonably anticipate being brought in this Court, at least on this basis. *See Icon Health & Fitness, Inc. v. Horizon Fitness, Inc.*, 2009 WL 1025467, at (E.D. Tex. 2009) (finding that “[a]s a result of contracting to manufacture products for sale in” national retailers’ stores, the defendant

“could have expected that it could be brought into court in the states where [the national retailers] are located”).

17. Upon information and belief, TP-Link Tech. alone and in concert with other related entities such as Defendant TP-Link Corp., Defendant TP-Link Intl, and U.S.-based TP-Link USA manufactures and purposefully places infringing TP-Link Products in established distribution channels in the stream of commerce, including in Texas, via distributors and reseller partners, such as at least those listed on TP-Link’s website. For example, TP-Link Tech. imports to Texas or through a related entity and directly sells and offers for sale infringing TP-Link Products in Texas to distributor CDW Corporation (“CDW”), which has a distribution location at 5908 Headquarters Dr., Suite 200, Plano, TX 75024, which is in this judicial district. *See Locations*, CDW, <https://www.cdw.com/content/cdw/en/locations.html>. CDW offers infringing TP-Link Products for sale on its website. *See, e.g., TP-Link DECO M5 - Wi-Fi system*, CDW, <https://www.cdw.com/product/tp-link-deco-m5-wi-fi-system-802.11b-g-n-ac-bluetooth-4.2-desktop/5085325?pfm=srh>. Via this website, TP-Link Products are offered for sale to consumers in the state of Texas. TP-Link Tech. also delivers networking products directly to distributors in the U.S., such as Solution Box LLC (located in Miami, FL), as indicated by import records. *See, e.g., Supply Chain Intelligence about: Tp Link Technologies Co. Ltd.*, PANJIVA, <https://panjiva.com/Tp-Link-Technologies-Co-Ltd/27804596> (showing at least one shipment to “Solution Box LLC” in January of 2021 consisting of, for example, networking products). These suppliers and distributors import, advertise, offer for sale and sell TP-Link Products via their own websites to U.S. consumers, including to consumers in Texas. Based on TP-Link Tech.’s connections and relationship, including supply contracts and other agreements with the U.S. and Texas-based distributors and suppliers, such as at least CDW, TP-Link Tech. knows and has



known that Texas is a termination point of the established distribution channels for TP-Link Products. TP-Link Tech., alone and in concert with related entities Defendant TP-Link Corp., Defendant TP-Link Intl, and U.S.-based TP-Link USA has purposefully directed its activities at Texas, and should reasonably anticipate being brought in this Court, at least on this basis. *See Ultravision Technologies, LLC v. Holophane Europe Limited*, 2020 WL 3493626, at \*5 (E.D. Tex. 2020) (finding sufficient to make a *prima facie* showing of personal jurisdiction allegations that “Defendants either import the products to Texas themselves or through a related entity”); *see also Bench Walk Lighting LLC v. LG Innotek Co., Ltd et al.*, Civil Action No. 20-51-RGA, 2021 WL 65071, at \*7-8 (D. Del., Jan. 7, 2021) (denying motion to dismiss for lack of personal jurisdiction based on the foreign defendant entering into supply contract with U.S. distributor and the distributor sold and shipped defendant’s products from the U.S. to the a customer in the forum state).

18. In the alternative, this Court has personal jurisdiction over TP-Link Tech. under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, TP-Link Tech. is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over TP-Link Tech. is consistent with the U.S. Constitution.

19. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391. Defendant TP-Link Tech. is a foreign entity and may be sued in any judicial district under 28 U.S.C. § 1391(c).

***TP-Link Corp.***

20. Upon information and belief, Defendant TP-Link Corp. 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 this judicial district, including: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of

the privilege of conducting those activities in this state and this judicial district and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this judicial district, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this judicial district vicariously through and/or in concert with its partners, alter egos, intermediaries, agents, distributors, importers, customers, subsidiaries, and/or consumers. For example, TP-Link Corp. and related entities Defendant TP-Link Corp., Defendant TP-Link Intl, and U.S.-based TP-Link USA manufacture, import, distribute, offer for sale, sell, and induce infringing use of TP-Link Products to distribution partners, retailers (including national retailers), reseller partners, solution partners, brand ambassadors, service providers, consumers, and other users.

21. This Court has personal jurisdiction over TP-Link Corp., directly and/or indirectly via the activities of TP-Link Corp.'s intermediaries, agents, related entities, distributors, importers, customers, subsidiaries, and/or consumers, including related entities Defendant TP-Link Tech., Defendant TP-Link Intl, and U.S.-based TP-Link USA. Alone and in concert with or via direction and control of or by at least these entities, TP-Link Corp. has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States, giving rise to this action and/or has established minimum contacts with Texas. For example, TP-Link Corp. is at least a related entity with TP-Link Tech., TP-Link Intl, and subsidiary TP-Link USA in a global network of sales and distribution of TP-Link Products that includes retail stores and distributors operating in Texas, including this judicial district. *See Choose Your Location*, TP-LINK, <https://www.tp-link.com/us/choose-your-location/>. TP-Link Corp. directly and via direction and control of or by its related entities participates in the manufacture, shipping, importing and

distribution of TP-Link Products to the U.S. For example, TP-Link Corp. is the applicant for FCC registrations for the sale and use of TP-Link Products in the U.S., including being identified on labels as the manufacturing party. *See, e.g., Label Location, FCCID.IO, available for download via <https://fccid.io/2AXJ4P9V2/Label/2AXJ4P9V2-Label-Location-5079096.pdf>* (providing a copy of the label for TP-Link model no. AC1200 + AV1000). As a part of TP-Link's global manufacturing and distribution network, TP-Link Corp. also purposefully places infringing TP-Link Products in established distribution channels in the stream of commerce, including in Texas, via distribution partners, retailers (including national retailers), reseller partners, solution partners, brand ambassadors, service providers, consumers, and other users. Therefore, TP-Link Corp., alone and in concert with related entities Defendant TP-Link Tech., Defendant TP-Link Intl, and subsidiary TP-Link USA, has purposefully directed its activities at Texas, and should reasonably anticipate being brought in this Court, at least on this basis.

22. This Court has personal jurisdiction over TP-Link Corp., directly and/or through the activities of TP-Link Corp.'s intermediaries, agents, related entities, distributors, importers, customers, subsidiaries, and/or consumers, including through the activities of Defendant TP-Link Tech., TP-Link Intl, and TP-Link USA. Through its own conduct and through direction and control of these entities or control by other Defendants, TP-Link Corp. has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States, giving rise to this action and/or has established minimum contacts with Texas such that personal jurisdiction over TP-Link Corp. would not offend traditional notions of fair play and substantial justice.

23. In the alternative, the Court has personal jurisdiction over TP-Link Corp. under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, TP-Link Corp. is not subject to the jurisdiction of the courts of general

jurisdiction of any state, and exercising jurisdiction over TP-Link Corp. is consistent with the U.S. Constitution.

24. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, TP-Link Corp. is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court’s recent decision in *TC Heartland* does not alter” the alien-venue rule.).

***TP-Link Intl***

25. Upon information and belief, Defendant TP-Link Intl 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 this judicial district, including: (A) at least part of its infringing activities alleged herein which purposefully avail the Defendant of the privilege of conducting those activities in this state and this judicial district and, thus, submits itself to the jurisdiction of this court; and (B) regularly doing or soliciting business, engaging in other persistent conduct targeting residents of Texas and this judicial district, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to and targeting Texas residents and residents of this judicial district vicariously through and/or in concert with its partners, alter egos, intermediaries, agents, distributors, importers, customers, subsidiaries, and/or consumers. For example, TP-Link Intl and related entities Defendant TP-Link Tech., Defendant TP-Link Corp., and U.S.-based TP-Link USA manufacture, import, distribute, offer for sale, sell, and induce infringing use of TP-Link Products to distribution partners, retailers (including national retailers), reseller partners, solution partners, brand ambassadors, service providers, consumers, and other users.

26. This Court has personal jurisdiction over TP-Link Intl, directly and/or indirectly via the activities of TP-Link Intl's intermediaries, agents, related entities, distributors, importers, customers, subsidiaries, and/or consumers, including related entities Defendant TP-Link Tech., Defendant TP-Link Corp., and U.S.-based TP-Link USA. Alone and in concert with or via direction and control of or by at least these entities, TP-Link Corp. has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States, giving rise to this action and/or has established minimum contacts with Texas. For example, TP-Link Intl operates in a global network of sales and distribution of TP-Link Products that includes retail stores and distributors operating in Texas, including this judicial district. *See Choose Your Location*, TP-LINK, <https://www.tp-link.com/us/choose-your-location/>. TP-Link Intl also directly and via direction and control of or by its related entities participates in the manufacture, shipping, importing and distribution of TP-Link Products to the U.S. For example, TP-Link Intl is the applicant for FCC registrations for the sale and use of TP-Link Products in the U.S., including being identified on labels as the manufacturing party. *See, e.g., Label Location*, FCCID.IO, *available for download via* <https://fccid.io/2AXJ4P9V2/Label/2AXJ4P9V2-Label-Location-5079096.pdf> (providing a copy of the label for TP-Link model no. AC1200 + AV1000). TP-Link Intl also delivers TP-Link Products, such as networking products, directly to TP-Link USA in the U.S., according to import records. *See Supply Chain Intelligence about: Tp Link International Ltd.*, PANJIVA, <https://panjiva.com/Tp-Link-International-Ltd/39242970>. As a part of TP-Link's global manufacturing and distribution network, TP-Link Intl also purposefully places infringing TP-Link Products in established distribution channels in the stream of commerce, including in Texas, via distribution partners, retailers (including national retailers), reseller partners, solution partners, brand ambassadors, service providers, consumers, and other users. Therefore, TP-Link Intl, alone

and in concert with related entities Defendant TP-Link Tech., Defendant TP-Link Corp., and subsidiary TP-Link USA, has purposefully directed its activities at Texas, and should reasonably anticipate being brought in this Court, at least on this basis.

27. This Court has personal jurisdiction over TP-Link Intl, directly and/or through the activities of TP-Link Intl's intermediaries, agents, related entities, distributors, importers, customers, subsidiaries, and/or consumers, including through the activities of Defendant TP-Link Tech., TP-Link Corp., and TP-Link USA. Through its own conduct and through direction and control of these entities or control by other Defendants, TP-Link Intl has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States, giving rise to this action and/or has established minimum contacts with Texas such that personal jurisdiction over TP-Link Intl would not offend traditional notions of fair play and substantial justice.

28. In the alternative, the Court has personal jurisdiction over TP-Link Intl under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, TP-Link Intl is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over TP-Link Intl is consistent with the U.S. Constitution.

29. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, TP-Link Intl is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court's recent decision in *TC Heartland* does not alter” the alien-venue rule.).

30. On information and belief, Defendants TP-Link Tech., TP-Link Corp., and TP-Link Intl each have significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

### **THE ASSERTED PATENTS AND TECHNOLOGY**

31. The Asserted Patents cover various aspects of communication, routing, and organizing network nodes within wireless communications networks. The methods and apparatuses described in each of the Asserted Patents apply to mobile ad hoc networks—dynamic wireless networks without any routing structure, such as the networks created between Defendants’ IoT and smart home devices.

32. The ’986 patent involves scheduling time slots for communication links between nodes in a wireless communication network in order to mitigate interference and respond to variations. It discusses using those scheduled time slots and data sent between the nodes to determine metrics and priority levels for establishing additional communication links. The methods claimed in the ’986 patent allow for optimized communication within a wireless network.

33. The ’310 patent provides methods for routing message data between nodes in a wireless communication network. It discusses sending route requests from a source node to determine possible routes to a destination node via different intermediate nodes within the network. By using various metrics that describe the links between the network nodes, the possible routes can then be ranked and the best route from the source node to the destination node can be determined. The ’310 patent describes methods and network structures that provide network routes that are more reliable, timelier, and have less traffic loads than previous solutions.

34. The ’426 patent describes a wireless communications network with multiple channels as well as methods for utilizing such a network in a way that efficiently makes use of the multiple

channels to optimize routing and transmitting data. With multiple channels available, multiple routing requests can be sent and multiple routes can be made available, allowing for an optimal route to be selected.

35. Upon information and belief, a significant portion of the operating revenue of Defendants is derived from the manufacture, distribute, sale, and use of home and business networking, IoT, and smart home products and components, which are imported into the United States, distributed, and ultimately sold to and used by U.S. consumers. For example, TP-Link's global website touts that it is "consistently ranked by analyst firm IDC as the No. 1 provider of Wi-Fi devices[], supplying distribution to more than 170 countries and serving billions of people worldwide...[a]ccording to latest published IDC Worldwide Quarterly WLAN Tracker Report, Q2 2018 Final Release." *See About TP-Link*, TP-LINK, <https://www.tp-link.com/en/about-us/corporate-profile/>.

36. The Asserted Patents cover Defendants' home and business networking, IoT, and smart home products and components, software, services, and processes related to same that generally connect to other devices in a network or other networks (including in IoT and cloud networks) using a wireless protocol, such as ZigBee and WiFi, including, but not limited to, Defendants' Deco Whole Home Mesh Wi-Fi, Home and Business Wi-Fi Routers, Network Expanders, Network Switches, Adapters, Security Cameras, Smart Plugs, Smart Lighting, Smart Switches, and related accessories and software (all collectively referred to as the "Accused Products"). These Accused Products infringe the Asserted Patents by at least their manufacture, importation, distribution, sale, and use in the U.S.

37. Examples of Defendant's Accused Products are at least the family of TP-Link's mesh technology, incorporated in, for example, Deco M9 Plus devices. These device "provide whole-



home IoT coverage with Wi-Fi, Bluetooth, and ZigBee integrated into a single system.” The Asserted Patents also cover TP-Links Products that use ZigBee protocol to communicate with other devices on the network, including those of third-party manufacturers. ZigBee protocol is based on the IEEE 802.15.4 standard. See *Deco M9 Plus Smart Home Device Compatible List*, TP-LINK, <https://www.tp-link.com/us/Deco-M9-Plus/compatibility/>. An example of the Deco M9 Plus is shown below:



38. ZigBee protocols, which are covered by the Asserted Patents and utilized by certain Accused Products, are based on the IEEE 802.15.4 standard for wireless network communication. Below is an excerpt from the technical specification for ZigBee protocols describing the basic architecture and standards that enable wireless network communication.

## 1.1 Protocol Description

The ZigBee Alliance has developed a very low-cost, very low-power-consumption, two-way, wireless communications standard. Solutions adopting the ZigBee standard will be embedded in consumer electronics, home and building automation, industrial controls, PC peripherals, medical sensor applications, toys, and games.

### 1.1.3 Stack Architecture

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The ZigBee stack architecture is made up of a set of blocks called layers. Each layer performs a specific set of services for the layer above. A data entity provides a data transmission service and a management entity provides all other services. Each service entity exposes an interface to the upper layer through a service access point (SAP), and each SAP supports a number of service primitives to achieve the required functionality.

The IEEE 802.15.4 standard defines the two lower layers: the physical (PHY) layer and the medium access control (MAC) sub-layer. The ZigBee Alliance builds on this foundation by providing the network (NWK) layer and the framework for the application layer. The application layer framework consists of the application support sub-layer (APS) and the ZigBee device objects (ZDO). Manufacturer-defined application objects use the framework and share APS and security services with the ZDO.

The PHY layer operates in two separate frequency ranges: 868/915 MHz and 2.4 GHz. The lower frequency PHY layer covers both the 868 MHz European band and the 915 MHz band, used in countries such as the United States and Australia. The higher frequency PHY layer is used virtually worldwide. A complete description of the PHY layers can be found in [B1].

*ZigBee Specification*, revision r21 at 1, THE ZIGBEE ALLIANCE, <https://zigbeealliance.org/wp-content/uploads/2019/11/docs-05-3474-21-0csg-zigbee-specification.pdf> (August 5, 2015).

39. The IEEE 802.15.4 standard based mobile ad-hoc network, utilized by the Accused Products, is a type of Low-Rate Wireless Personal Area Network (LR-WPAN) that allows transmission of data between plurality of network nodes. The types of nodes include an FFD—full-function device (functioning as a network coordinator node) and an RFD—reduced function device (node that associates itself with the FFD).

**IEEE STANDARDS ASSOCIATION** 

**IEEE Standard for  
Local and metropolitan area networks—**

**Part 15.4: Low-Rate Wireless Personal Area  
Networks (LR-WPANs)**

**4. General description**

**4.1 General**

An LR-WPAN is a simple, low-cost communication network that allows wireless connectivity in applications with limited power and relaxed throughput requirements. The main objectives of an LR-WPAN are ease of installation, reliable data transfer, extremely low cost, and a reasonable battery life, while maintaining a simple and flexible protocol.

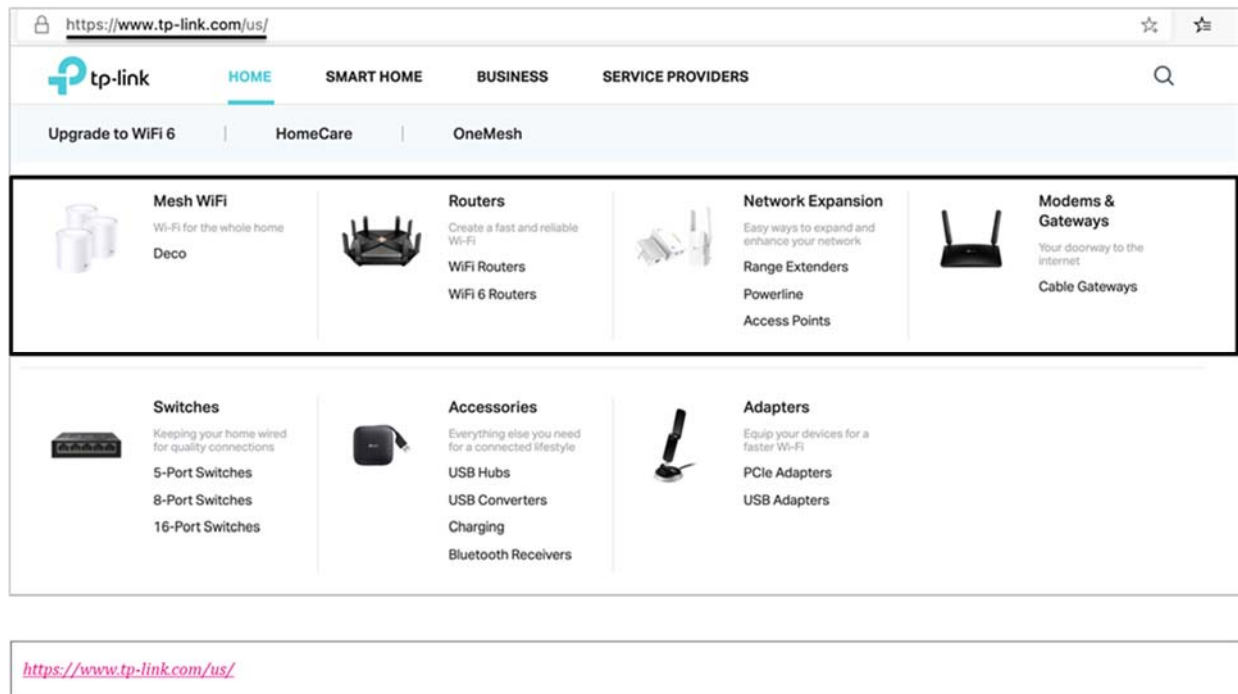
Two different device types can participate in an IEEE 802.15.4 network: a full-function device (FFD) and a reduced-function device (RFD). An FFD is a device that is capable of serving as a personal area network (PAN) coordinator or a coordinator. An RFD is a device that is not capable of serving as either a PAN coordinator or a coordinator. An RFD is intended for applications that are extremely simple, such as a light switch or a passive infrared sensor; it does not have the need to send large amounts of data and only associates with a single FFD at a time. Consequently, the RFD can be implemented using minimal resources and memory capacity.

**4.2 Components of the IEEE 802.15.4 WPAN**


A system conforming to this standard consists of several components. The most basic is the device. Two or more devices communicating on the same physical channel constitute a WPAN. However, this WPAN includes at least one FFD, which operates as the PAN coordinator.

Page 8, [http://ecee.colorado.edu/~liue/teaching/comm\\_standards/2015S\\_zigbee/802.15.4-2011.pdf](http://ecee.colorado.edu/~liue/teaching/comm_standards/2015S_zigbee/802.15.4-2011.pdf)

40. The Asserted Patents also cover TP-Link Products, such as Deco Whole Home Mesh Wi-Fi, Home and Business Wi-Fi Routers, Cable Routers, Gaming Routers, Network Expanders, Network Switches, Adapters, Kasa Security Cameras, Kasa Smart Plugs, Kasa Smart Lighting, Kasa Smart Switches, Omada (a TP-Link brand) access points, desktop access points, power line products, and related accessories and software, that are Wi-Fi (IEEE 802.11) compliant, such as those shown below.



41. The IEEE 802.11 standard defines a wireless local area network (WLAN) including multiple mobile nodes (portable/hand-held, moving stations (STAs)). As discussed in the overview of the protocol below, the IEEE 802.11 WLAN supports quality of service (QoS) requirements originating from network devices/stations (STAs).



**IEEE Standard for  
Information technology—  
Telecommunications and information  
exchange between systems—  
Local and metropolitan area networks—  
Specific requirements**

**Part 11: Wireless LAN Medium Access Control (MAC)  
and Physical Layer (PHY) Specifications**

**IEEE Std 802.11™-2007**  
(Revision of  
IEEE Std 802.11-1999 )

**1. Overview**

**1.1 Scope**

The scope of this standard is to define one medium access control (MAC) and several physical layer (PHY) specifications for wireless connectivity for fixed, portable, and moving stations (STAs) within a local area.

**1.2 Purpose**

The purpose of this standard is to provide wireless connectivity to automatic machinery, equipment, or STAs that require rapid deployment, which may be portable or hand-held, or which may be mounted on moving vehicles within a local area. This standard also offers regulatory bodies a means of standardizing access to one or more frequency bands for the purpose of local area communication.

Specifically, this standard

- Describes the functions and services required by an IEEE 802.11™-compliant device to operate within ad hoc and infrastructure networks as well as the aspects of STA mobility (transition) within those networks.
- Defines the MAC procedures to support the asynchronous MAC service data unit (MSDU) delivery services.
- Defines several PHY signaling techniques and interface functions that are controlled by the IEEE 802.11 MAC.

- Defines the MAC procedures to support local area network (LAN) applications with quality of service (QoS) requirements, including the transport of voice, audio, and video.

*IEEE Std 802.11-2007*, IEEE COMPUTER SOCIETY, June 12, 2007, p. 49, 50, *accessible at* <https://www.iith.ac.in/~tbr/teaching/docs/802.11-2007.pdf>

42. By utilizing 802.11 and/or ZigBee protocols, the Accused Products perform methods for communication, routing, and organizing network nodes within wireless communications networks that are covered by the Asserted Patents. Each respective Count below describes how the Accused Products infringe on specific claims of the Asserted Patents.

**COUNT I**

(INFRINGEMENT OF U.S. PATENT NO. 6,958,986)

43. Plaintiff incorporates paragraphs 1 through 42 herein by reference.

44. Plaintiff is the assignee of the '986 patent, entitled "Wireless Communication System with Enhanced Time Slot Allocation and Interference Avoidance/Mitigation Features and Related Methods," with ownership of all substantial rights in the '986 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

45. The '986 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '986 patent issued from U.S. Patent Application No. 10/401,004.

46. TP-Link has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '986 patent in this judicial district and elsewhere in Texas and the United States.

47. Upon information and belief, TP-Link designs, develops, manufactures, imports, distributes, offers to sell, sells, and uses the Accused Products, including via the activities of TP-Link Tech. and its subsidiaries or related entities, such as Defendant TP-Link Corp., Defendant TP-Link Intl and TP-Link USA.

48. Defendants TP-Link Tech., TP-Link Corp., and TP-Link Intl (i.e., "TP-Link") each directly infringe the '986 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing the Accused Products, their components, and/or products containing the same that

incorporate the fundamental technologies covered by the '986 patent to, for example, its alter egos, agents, intermediaries, related entities, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants make and sell the Accused Products outside of the United States, deliver those products to related entities, subsidiaries, online stores, distribution partners, retailers, reseller partners, solution partners, customers and other related service providers in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale and use in the United States, thereby directly infringing the '986 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) (denying summary judgment and allowing presentation to jury as to “whether accused products manufactured and delivered abroad but imported into the United States market by downstream customers ... constitute an infringing sale under § 271(a)”).

49. Furthermore, Defendant TP-Link Tech. directly infringes the '986 patent through its direct involvement in the activities of its subsidiaries and related entities, including Defendants TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA., including by selling and offering for sale the Accused Products directly to its related entities and importing the Accused Products into the United States for its related entities. Upon information and belief, TP-Link USA conducts activities that constitutes direct infringement of the '986 patent under 35 U.S.C. § 271(a) by importing, offering for sale, selling, and/or using those Accused Products in the U.S. on behalf of and for the benefit of Defendants. TP-Link Tech. is vicariously liable for the infringing conduct of Defendants TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA and other subsidiaries (under both the alter ego and agency theories) because, as an example and on information and

belief, Defendants TP-Link Tech., TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA are essentially the same company, and TP-Link Tech. along with its related entities have the right and ability to control the infringing activities of Defendant TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA and TP-Link Tech. receives a direct financial benefit from that infringement.

50. For example, TP-Link infringes claim 25 of the '986 patent via the Accused Products such as Deco Whole Home Mesh Wi-Fi, Home and Business Wi-Fi Routers, Cable Routers, Gaming Routers, Network Expanders, Network Switches, Adapters, Kasa Security Cameras, Kasa Smart Plugs, Kasa Smart Lighting, Kasa Smart Switches, Omada (a TP-Link brand) access points, desktop access points, power line products, and related accessories and software, which utilize ZigBee and/or 802.11 (WiFi) protocols.

51. The Accused Products implement the “communication method for a wireless communication network comprising a plurality of mobile nodes each comprising a data queue” of claim 25. Each of the Accused Products utilizes ZigBee and/or WiFi protocols, which are based on the IEEE 802.15.4 standard or IEEE 802.11 standard and involve communication between two or more devices on a wireless channel. *See* THE ZIGBEE ALLIANCE, *supra*; *IEEE Std 802.11-2007, supra*. The Accused Products schedule respective semi-permanent time slots to establish communication links between respective pairs of mobile nodes for transmitting data stored in the data queues therebetween. For example, by utilizing ZigBee, each of the Accused Products include contention access period (“CAP”) time slots. By default, network nodes use CAP time slots for data and frame transmission.

52. By utilizing WiFi, multiple QoS-supported STAs in the Accused Products utilize a contention-based access mechanism (EDCA) to compete to transmit data, i.e., via transmit



opportunities (TXOPs), in a contention period (“CP”). These time slots in the CP are semi-permanent.

53. The Accused Products determine link utilization metrics for each communication link based upon a quantity of data previously sent over the communication link during the semi-permanent time slots and the data queues. For example, by utilizing ZigBee protocols, the Accused Products store queues of pending transactions then transmit the transactions on a first-come-first-served basis to nodes that request them. The transactions are transmitted according to algorithms (i.e., link utilization metrics); the transaction remains in the queue if the algorithm fails.

54. By utilizing WiFi, the Low-Rate Wireless Personal Area Network (LR-WPAN) of the Accused Products has a coordinator that stores pending transactions in a queue. If there are multiple pending transactions in the queue, they are transmitted on a first-come-first-serve basis to the nodes/devices that request them, i.e., transmitted according to “link utilization metrics.” The more the number of requests and corresponding responses for transmitting the queued pending data, the more utilized will be the CAP.

55. The Accused Products schedule demand assigned time slots for establishing additional communication links between the pairs of mobile nodes for transmitting the data based upon the link utilization metrics. For example, by utilizing ZigBee protocols, each of the Accused Products schedule guaranteed time slots (“GTS,” i.e., assigned time slots) for transmission of data. The GTSs are dedicated to nodes or devices that require specific data bandwidth or latency (i.e., based on link utilization metrics) for transmission.

56. By utilizing WiFi, the LR-WPAN coordinator schedules demand assigned to GTSs, which are dedicated nodes or devices that require specific data bandwidth or low-latency

transmission. The GTSs are scheduled in addition to the CAP defined in a superframe, and are allocated to such devices or nodes, given there is sufficient capacity in the superframe, i.e., the GTSs are scheduled based upon the link utilization metrics.

57. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's infringement allegations.

58. At a minimum, TP-Link has known of the '986 patent at least as early as the filing date of this complaint. In addition, TP-Link has known about the '986 patent since at least July 16, 2020, when TP-Link received a letter regarding infringement of Stingray's patent portfolio, which includes the '986 patent and is related to mesh networking used in wireless control of home automation devices. The letter specifically referenced the infringing use of Stingray's patented technologies by TP-Links' Z-Wave and ZigBee compatible smart home automation products, including routers, smart lights, smart plugs, and smart outlets.

59. Upon information and belief, since at least the above-mentioned date when TP-Link was on notice of its infringement, Defendants have each actively induced, under U.S.C. § 271(b), importers, online stores, distribution partners, retailers, reseller partners, solution partners, consumers, and other related service providers that import, distribute, purchase, offer for sale, sell, or use the Accused Products that include or are made using all of the limitations of one or more claims of the '986 patent to directly infringe one or more claims of the '986 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, Defendants each do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '986 patent. Upon information and belief, Defendants each intend to cause, and have taken affirmative steps to induce, infringement by importers, online stores, distribution partners, retailers, reseller partners, solution partners,

consumers, and other related service providers by at least, *inter alia*, creating advertisements that promote the infringing use of the 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 instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to purchasers in the United States. *See, e.g., Download Center*, TP-LINK, <https://www.tp-link.com/us/support/download/> (providing consumers access to “firmware, drivers, user guide, utility or any other download resources” for TP-Link Products). Furthermore, TP-Link markets its mesh network devices and its application software as “compatible with a whole range of IoT devices, from smart bulbs and plugs to sensors and thermostats” that function within the same networks as the TP-Link Products and “can be controlled via the Deco app with no additional hub required.” *See Deco M9 Plus Smart Home Device Compatible List*, TP-LINK, <https://www.tp-link.com/us/Deco-M9-Plus/compatibility/> (listing smart devices, such as smart bulbs, switches, plugs, sensors, outlets, an door locks from third-party manufacturers, such as Philips, Cree, GE, Samsung, and Kwikset). Such compatibility provides convenience and added functionality that induces consumers to use TP-Link Products, including mesh networking devices utilizing ZigBee and/or WiFi protocols and thus further infringe the '986 patent.

60. Upon information and belief, despite having knowledge of the '986 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '986 patent, TP-Link has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. Each of Defendants infringing activities relative to the '986 patent have

been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

61. Plaintiff Stingray has been damaged as a result of TP-Link's infringing conduct described in this Count. Each Defendant is thus liable to Stingray in an amount that adequately compensates Stingray for TP-Link'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. 6,961,310)

62. Plaintiff incorporates paragraphs 1 through 61 herein by reference.

63. Plaintiff is the assignee of the '310 patent, entitled "Multiple Path Reactive Routing in a Mobile Ad Hoc Network," with ownership of all substantial rights in the '310 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

64. The '310 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '310 patent issued from U.S. Patent Application No. 10/214,997.

65. TP-Link has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '310 patent in this judicial district and elsewhere in Texas and the United States.

66. Upon information and belief, TP-Link designs, develops, manufactures, imports, distributes, offers to sell, sells, and uses the Accused Products, including via the activities of TP-

Link Tech. and its subsidiaries or related entities, such as Defendant TP-Link Corp., Defendant TP-Link Intl and TP-Link USA.

67. Defendants TP-Link Tech., TP-Link Corp., and TP-Link Intl (i.e., “TP-Link”) each directly infringe the ’310 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing the Accused Products, their components, and/or products containing the same that incorporate the fundamental technologies covered by the ’310 patent to, for example, its alter egos, agents, intermediaries, related entities, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants make and sell the Accused Products outside of the United States, deliver those products to related entities, subsidiaries, online stores, distribution partners, retailers, reseller partners, solution partners, customers and other related service providers in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale and use in the United States, thereby directly infringing the ’310 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) (denying summary judgment and allowing presentation to jury as to “whether accused products manufactured and delivered abroad but imported into the United States market by downstream customers ... constitute an infringing sale under § 271(a)”).

68. Furthermore, Defendant TP-Link Tech. directly infringes the ’310 patent through its direct involvement in the activities of its subsidiaries and related entities, including Defendants TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA., including by selling and offering for sale the Accused Products directly to its related entities and importing the Accused Products into the United States for its related entities. Upon information and belief, TP-Link USA conducts

activities that constitutes direct infringement of the '310 patent under 35 U.S.C. § 271(a) by importing, offering for sale, selling, and/or using those Accused Products in the U.S. on behalf of and for the benefit of Defendants. TP-Link Tech. is vicariously liable for the infringing conduct of Defendants TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA and other subsidiaries (under both the alter ego and agency theories) because, as an example and on information and belief, Defendants TP-Link Tech., TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA are essentially the same company, and TP-Link Tech. along with its related entities have the right and ability to control the infringing activities of Defendant TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA and TP-Link Tech. receives a direct financial benefit from that infringement.

69. For example, Samsung infringes claim 13 of the '310 patent via the Accused Products such as Deco Whole Home Mesh Wi-Fi, Home and Business Wi-Fi Routers, Cable Routers, Gaming Routers, Network Expanders, Network Switches, Adapters, Kasa Security Cameras, Kasa Smart Plugs, Kasa Smart Lighting, Kasa Smart Switches, Omada (a TP-Link brand) access points, desktop access points, power line products, and related accessories and software, which utilize the ZigBee protocol.

70. The Accused Products that utilize the ZigBee protocol implement the “method for routing message data from a source node to a destination node in a mobile ad hoc network comprising a plurality of intermediate mobile nodes between the source node and the destination node, and a plurality of wireless communication links connecting the nodes together” of claim 13. ZigBee protocols are based on the IEEE 802.15.4 standard and involve communication between two or more devices on a wireless channel. *See* THE ZIGBEE ALLIANCE, *supra*.

71. The Accused Products discover, at the source node, routing to the destination node. For example, by utilizing ZigBee protocols, the Accused Products use route request commands, route request identifiers, and route reply commands to discover routing to the destination node.

72. The Accused Products rank, at the source node, discovered routes according to at least one metric. For example, by utilizing ZigBee protocols, the Accused Products use a path cost metric for route comparison (i.e., ranking discovered routes).

73. The Accused Products simultaneously distribute, at the source node, message data to the destination node along a plurality of the discovered routes based upon the ranking. For example, by utilizing ZigBee protocols, the Accused Products distribute message data (e.g., relay messages or deliver packets) to destination nodes.

74. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's infringement allegations.

75. At a minimum, TP-Link has known of the '310 patent at least as early as the filing date of this complaint. In addition, TP-Link has known about the '310 patent since at least July 16, 2020, when TP-Link received a letter regarding infringement of Stingray's patent portfolio, which includes the '310 patent and is related to mesh networking used in wireless control of home automation devices. The letter specifically referenced the infringing use of Stingray's patented technologies by TP-Links' Z-Wave and ZigBee compatible smart home automation products, including routers, smart lights, smart plugs, and smart outlets.

76. Upon information and belief, since at least the above-mentioned date when TP-Link was on notice of its infringement, Defendants have each actively induced, under U.S.C. § 271(b), importers, online stores, distribution partners, retailers, reseller partners, solution partners, consumers, and other related service providers that import, distribute, purchase, offer for sale, sell,

or use the Accused Products that include or are made using all of the limitations of one or more claims of the '310 patent to directly infringe one or more claims of the '310 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, Defendants each do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '310 patent. Upon information and belief, Defendants each intend to cause, and have taken affirmative steps to induce, infringement by importers, online stores, distribution partners, retailers, reseller partners, solution partners, consumers, and other related service providers by at least, *inter alia*, creating advertisements that promote the infringing use of the 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 instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to purchasers in the United States. *See, e.g., Download Center*, TP-LINK, <https://www.tp-link.com/us/support/download/> (providing consumers access to “firmware, drivers, user guide, utility or any other download resources” for TP-Link Products). Furthermore, TP-Link markets its mesh network devices and its application software as “compatible with a whole range of IoT devices, from smart bulbs and plugs to sensors and thermostats” that function within the same networks as the TP-Link Products and “can be controlled via the Deco app with no additional hub required.” *See Deco M9 Plus Smart Home Device Compatible List*, TP-LINK, <https://www.tp-link.com/us/Deco-M9-Plus/compatibility/> (listing smart devices, such as smart bulbs, switches, plugs, sensors, outlets, an door locks from third-party manufacturers, such as Philips, Cree, GE, Samsung, and Kwikset). Such compatibility



provides convenience and added functionality that induces consumers to use TP-Link Products, including mesh networking devices and thus further infringe the '310 patent.

77. Upon information and belief, despite having knowledge of the '310 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '310 patent, TP-Link has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. Each of Defendants infringing activities relative to the '310 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

78. Plaintiff Stingray has been damaged as a result of TP-Link's infringing conduct described in this Count. Each Defendant is thus liable to Stingray in an amount that adequately compensates Stingray for TP-Link'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. 7,027,426)

79. Plaintiff incorporates paragraphs 1 through 78 herein by reference.

80. Plaintiff is the assignee of the '426 patent, entitled "Multi-channel Mobile Ad Hoc Network," with ownership of all substantial rights in the '426 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

81. The '426 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '426 patent issued from U.S. Patent Application No. 10/212,594.

82. TP-Link has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '426 patent in this judicial district and elsewhere in Texas and the United States.

83. Upon information and belief, TP-Link designs, develops, manufactures, imports, distributes, offers to sell, sells, and uses the Accused Products, including via the activities of TP-Link Tech. and its subsidiaries or related entities, such as Defendant TP-Link Corp., Defendant TP-Link Intl and TP-Link USA.

84. Defendants TP-Link Tech., TP-Link Corp., and TP-Link Intl (i.e., "TP-Link") each directly infringe the '426 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing the Accused Products, their components, and/or products containing the same that incorporate the fundamental technologies covered by the '426 patent to, for example, its alter egos, agents, intermediaries, related entities, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants make and sell the Accused Products outside of the United States, deliver those products to related entities, subsidiaries, online stores, distribution partners, retailers, reseller partners, solution partners, customers and other related service providers in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale and use in the United States, thereby directly infringing the '426 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) (denying summary judgment and allowing presentation to jury as to "whether accused products manufactured and delivered abroad but imported into the United States market by downstream customers ... constitute an infringing sale under § 271(a)").

85. Furthermore, Defendant TP-Link Tech. directly infringes the '426 patent through its direct involvement in the activities of its subsidiaries and related entities, including Defendants TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA., including by selling and offering for sale the Accused Products directly to its related entities and importing the Accused Products into the United States for its related entities. Upon information and belief, TP-Link USA conducts activities that constitutes direct infringement of the '426 patent under 35 U.S.C. § 271(a) by importing, offering for sale, selling, and/or using those Accused Products in the U.S. on behalf of and for the benefit of Defendants. TP-Link Tech. is vicariously liable for the infringing conduct of Defendants TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA and other subsidiaries (under both the alter ego and agency theories) because, as an example and on information and belief, Defendants TP-Link Tech., TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA are essentially the same company, and TP-Link Tech. along with its related entities have the right and ability to control the infringing activities of Defendant TP-Link Corp., Defendant TP-Link Intl, and TP-Link USA and TP-Link Tech. receives a direct financial benefit from that infringement.

86. For example, TP-Link infringes claim 8 of the '426 patent via the Accused Products such as Deco Whole Home Mesh Wi-Fi, Home and Business Wi-Fi Routers, Cable Routers, Gaming Routers, Network Expanders, Network Switches, Adapters, Kasa Security Cameras, Kasa Smart Plugs, Kasa Smart Lighting, Kasa Smart Switches, Omada (a TP-Link brand) access points, desktop access points, power line products, and related accessories and software, which utilize the ZigBee protocol.

87. The Accused Products that utilize a ZigBee protocol implement the “method for operating a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality

of wireless communication links connecting the plurality of nodes together over a plurality of electrically separate wireless channels” of claim 8. ZigBee protocols are based on the IEEE 802.15.4 standard and involve communication between two or more devices on a wireless channel. *See* THE ZIGBEE ALLIANCE, *supra*.

88. The Accused Products, at a source node, send a route request over each of the plurality of electrically separate channels to discover routing to a destination node. For example, by utilizing ZigBee protocols, the Accused Products use route request commands, route request identifiers, and route reply commands to discover routing to the destination node.

89. The Accused Products, at the source node, select a route to the destination node on at least one of the plurality of electrically separate channels. For example, by utilizing ZigBee protocols, the Accused Products select a route for relayed messages to a destination device by choosing a route with the lowest path cost among multiple routes (i.e., a plurality of electrically separate channels).

90. The technology discussion above and the exemplary Accused Products provide context for Plaintiff’s infringement allegations.

91. At a minimum, TP-Link has known of the ’426 patent at least as early as the filing date of this complaint. In addition, TP-Link has known about the ’426 patent since at least July 16, 2020, when TP-Link received a letter regarding infringement of Stingray’s patent portfolio, which includes the ’426 patent and is related to mesh networking used in wireless control of home automation devices. The letter specifically referenced the infringing use of Stingray’s patented technologies by TP-Links’ Z-Wave and ZigBee compatible smart home automation products, including routers, smart lights, smart plugs, and smart outlets.

92. Upon information and belief, since at least the above-mentioned date when TP-Link was on notice of its infringement, Defendants have each actively induced, under U.S.C. § 271(b), importers, online stores, distribution partners, retailers, reseller partners, solution partners, consumers, and other related service providers that import, distribute, purchase, offer for sale, sell, or use the Accused Products that include or are made using all of the limitations of one or more claims of the '426 patent to directly infringe one or more claims of the '426 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, Defendants each do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '426 patent. Upon information and belief, Defendants each intend to cause, and have taken affirmative steps to induce, infringement by importers, online stores, distribution partners, retailers, reseller partners, solution partners, consumers, and other related service providers by at least, *inter alia*, creating advertisements that promote the infringing use of the 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 instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to purchasers in the United States. *See, e.g., Download Center*, TP-LINK, <https://www.tp-link.com/us/support/download/> (providing consumers access to “firmware, drivers, user guide, utility or any other download resources” for TP-Link Products). Furthermore, TP-Link markets its mesh network devices and its application software as “compatible with a whole range of IoT devices, from smart bulbs and plugs to sensors and thermostats” that function within the same networks as the TP-Link Products and “can be

controlled via the Deco app with no additional hub required.” *See Deco M9 Plus Smart Home Device Compatible List*, TP-LINK, <https://www.tp-link.com/us/Deco-M9-Plus/compatibility/> (listing smart devices, such as smart bulbs, switches, plugs, sensors, outlets, an door locks from third-party manufacturers, such as Philips, Cree, GE, Samsung, and Kwikset). Such compatibility provides convenience and added functionality that induces consumers to use TP-Link Products, including mesh networking devices utilizing ZigBee and/or WiFi protocols and thus further infringe the ’426 patent.

93. Upon information and belief, despite having knowledge of the ’426 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’426 patent, TP-Link has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. Each of Defendants infringing activities relative to the ’426 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

94. Plaintiff Stingray has been damaged as a result of TP-Link’s infringing conduct described in this Count. Each Defendant is thus liable to Stingray in an amount that adequately compensates Stingray for TP-Link’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.

### **CONCLUSION**

95. Plaintiff is entitled to recover from Defendants the damages sustained by Plaintiff as a result of Defendants’ wrongful acts 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.

96. Plaintiff 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 Plaintiff is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

**JURY DEMAND**

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

**PRAYER FOR RELIEF**

98. Plaintiff requests that the Court find in its favor and against Defendants, and that the Court grant Plaintiff the following relief:

1. A judgment that Defendants have infringed the Asserted Patents as alleged herein, directly and/or indirectly by way of inducing infringement of such patents;
2. A judgment for an accounting of damages sustained by Plaintiff as a result of the acts of infringement by Defendants;
3. A judgment and order requiring Defendants to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
4. A judgment and order requiring Defendants to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
5. A judgment and order finding this to be an exceptional case and requiring Defendants to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and
6. Such other and further relief as the Court deems just and equitable.

Dated: February 8, 2021

Respectfully submitted,

/s/ Jeffrey R. Bragalone by permission  
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