

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON DC**

**Before the Honorable Doris Johnson Hines
Administrative Law Judge**

In the Matter of

**CERTAIN WI-FI ROUTERS, WI-FI
DEVICES, MESH WI-FI NETWORK
DEVICES, AND HARDWARE AND
SOFTWARE COMPONENTS THEREOF**

Investigation No. 337-TA-1361

TP-LINK'S CORRECTED RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Exhibits Submitted With TP- Link's Claim Construction Briefs

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1	Expert Declaration of Dr. Kevin Almeroth
2	A. Scalia & B. Garner, <i>Reading Law: The Interpretation of Legal Texts</i> 116 (2012)
3	Vlavianos A., et al, Assessing Link Quality in IEEE 802.11 Wireless Networks: Which is the Right Metric, <i>IEEE</i> (2008)
4	Excerpts of United States Patent Application No. 15/287706
5	G. Zanetti & C. Palazzi, Non-invasive Node Detection in IEEE 802.11 Wireless Network, <i>IEEE</i> (2010)
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7.1	<i>Merriam-Webster's Collegiate Dictionary</i> , 11th ed. (2012)
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9	Jardosh et al., "Understanding Link-Layer Behavior in Highly Congested IEEE 802.11b Wireless Networks," <i>SIGCOMM'05 Workshops</i> (Aug. 22–26, 2005)
10	Series G: Transmission Systems and Media, Digital Services and Network, G.114, Telecommunication Standardization Section of ITU, 5/2003
11	Katz, D. et al., "How VoIP works: protocols, codecs, and more," <i>EE Times</i> , (07/28/2006)
12	Curriculum Vitae of Dr. Kevin C. Almeroth
13	Responsive Declaration of Dr. Kevin Almeroth Regarding Claim Construction
14	Web article: "Monitor mode", Wikipedia, the free encyclopedia (dated August 27, 2016)
15	Bradbury, D., "Hacking wifi the easy way", <i>Network Security</i> (February 2011)
16	Chappell, L., Wireshark® Network Analysis, The Official Wireshark Certified Network Analyst Study Guide, Second Edition (Excerpts)
17	Dhanjani, N and Clarke, J., <i>Network Security Tools</i> (2005)
18	AirSnort FAQ, Frequently Asked Questions About AirSnort
19	Sigg et al., "The Telepathic Phone: Frictionless Activity Recognition from WiFi-RSSI," <i>IEEE</i> (2014)
20	Chon et al., "Sensing WiFi Packets in the Air: Practicality and Implications in Urban Mobility Monitoring," <i>UBICOMP '14</i> (September 13-17, 2014)
21	Schulz et al., "NexMon: A Cookbook for Firmware Modifications on Smartphones to Enable Monitor Mode," <i>arXiv</i> (Dec. 24, 2015)

<u>Exhibit</u>	<u>Description</u>
22	Webpage titled “Network Monitor Operation Mode”, Microsoft, (4/20/2017)

I. U.S. PAT. NO. 7,936,714

A. Disputed Terms

1. “receiving ... data on a [first/second] frequency” and “transmitting ... data on a [second/first] frequency” (claims 1, 13, 31, 32)

As discussed in TP-Link’s opening brief, the specification and file history repeatedly and consistently describe “*the present invention*” as requiring separate bands for transmitting and receiving. TP-Link Br. at 4–8. Yet, Netgear reads the claims to cover the opposite: utilizing *the same band* for both upstream and downstream communications. Because this interpretation contradicts the claims’ structure and the applicant’s description of the invention in the intrinsic record, it should be rejected. *See Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014).

Netgear attempts to undermine the applicant’s clear and unmistakable descriptions of the “present invention” with purported countervailing examples. *See* Netgear Br. at 7–8. Those attempts all fail.

First, Netgear incorrectly argues that TP-Link’s proposed construction would exclude the embodiments of Figures 2 and 3. While those figures depict a radio that appears capable of transmitting and receiving in the same band, there is no indication such functionality was intended to form part of the claimed invention. On the contrary, the patentee could not have been clearer that “the present invention” uses *separate* bands to transmit and receive. *See* TP-Link Br. at 4–8; *Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006) (“The public is entitled to take the patentee at his word and the word was that the invention is a fuel filter.”). Regarding the Figure 2 and 3 embodiments themselves, the patentee expressly stated “preferred embodiment duplexer 202 *operates in two separate bands* of operation, *as opposed to* transmitting and receiving on frequencies within *the same band* of operation, *as with prior art* duplexers.”

'714 Patent at 7:52–55; *see also id.* at 8:56–60 (same for duplexer 302). In this manner, whatever the figures may have indicated about the radio's capabilities, the applicant was clear that these embodiments operate in separate bands—and the applicant even *distinguished* “same band ... operation” (Netgear's construction) as prior art. *See id.* at 1:35–37, 4:18–30; *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (specification statements that “expressly distinguish the invention from the prior art based on [a] feature” impose limitations on claim terms). Thus, it is Netgear's construction that is inconsistent with the described embodiments.¹

Second, while Netgear contends TP-Link's construction is inconsistent with the file history, Netgear Br. at 8–9, Netgear ignores the applicant's numerous clear and unequivocal statements supporting TP-Link's construction, and focuses instead on the applicant's response to an indefiniteness rejection—which is unrelated to the claim construction dispute here. To put that response in context, then-pending claims recited transmitting and receiving on “a first frequency” and “a second frequency.” JMX-0006 ('714 FH) at 296. The Examiner rejected those claims because “communication systems ... typically utilize a spectrum of frequencies for communication,” such that the claimed “transmitting and receiving data on a single frequency is not possible.” *Id.* at 315. In response, the applicant argued that the claim was not strictly limited to transmitting on the single claimed frequency, but rather permitted “transmitting or receiving of data that occur on frequencies *near or about* a desired frequency,” such that a POSITA “would understand the phrase ‘transmitting data ... on a first frequency’ to mean transmitting data *on or about* a first frequency.” *Id.* at 381. Thus, the debate was about whether *transmission* must strictly

¹ Netgear's reference to “separate antenna beams” is beside the point. Netgear Br. at 8. The specification distinguishes between using a single dual band antenna and two separate antennae. *See* '714 Patent at 7:31–44. In either case, transmission and receipt would occur on separate bands, consistent with TP-Link's construction.

be limited to a single frequency, or whether it could extend to surrounding frequencies (as the Examiner believed the technology required). Here, in contrast, the question is whether *transmitting and receiving* must be separated into different bands. That is a different question, which was not at issue in the applicant response on which Netgear relies.

That said, the applicant did subsequently address the relevant issue at an oral hearing before the PTAB, and unequivocally stated: “[A]ccording to Appellant’s invention, the transmission and reception *occur in different bands*.” JMX-006 at 478-79 (9/21/10 Hearing at 3:23–4:4); *see also id.* at 478 (9/21/10 Hearing at 3:12–15) (“[A]ccording to Appellant’s invention, communication of the downlink is allocated [on one band] ... while communication on the uplink is achieved on the [other] band.”), 483 (9/21/10 Hearing at 8:12–19) (“[T]he subscriber, according to Appellant’s invention, receives only data in a licensed band ... on the other hand, according to Appellant’s invention, the base station is receiving the high interference band.”). Thus, even if the applicant’s previous response somehow reflected a claim interpretation broader than TP-Link’s construction—which it did not—the applicant’s later declarations unequivocally disclaimed any such broader scope. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1344 (Fed. Cir. 2015) (“[The] public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent.”).

2. “frequency band expected to experience low interference” / “frequency band expected to experience high interference” (claims 1, 13, 31, 32)

Netgear effectively concedes in its opening brief that the specification provides no objective guidance regarding the level of interference that should be considered “low” or “high.” Instead, Netgear attempts to recast the claims as directed to the “*relative* expected interference characteristics of two given frequency bands.” Netgear Br. at 10. As explained in TP-Link’s opening brief, however, the claims do not recite the relative terms “lower” and “higher”—they

recite the terms of degree “low” and “high.” TP-Link Br. at 11–12. While Federal Circuit law requires an objective standard for measuring such terms of degree, *see id.* at 8, the specification provides no such standard. Netgear cannot avoid the resulting indefiniteness by trying to rewrite the claim language. *See K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999) (“Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee.”); *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002) (“It is not our function to rewrite [indefinite] claims to preserve their validity.”).

Notably, even if Netgear’s rewrite were accepted, it *still* would not avoid indefiniteness. Netgear bases its construction largely on the specification’s descriptions of licensed bands as having “relatively” low interference and of unlicensed bands as having “relatively” high interference. *See* ’714 Patent at 5:40–44, 3:33–40, 3:64–4:2, 7:3–10. However, as Netgear acknowledges, those descriptions do not provide sufficient objective guidance, because the specification discloses embodiments where both bands are licensed or where both are unlicensed. *See* Netgear Br. at 10. In such circumstances—where the question of licensed vs. unlicensed cannot be the basis of the distinction between the bands—Netgear is forced to argue that numerous other characteristics can be considered, including relative usage, regulatory specifications, and available spectrum bandwidth. *See id.* Yet, Netgear does not explain how a POSITA is to weigh and balance these criteria to determine which band has “relatively” high interference and which has “relatively” low interference. Moreover, in a scenario where a licensed band (described as having relatively low interference) has high usage—and an unlicensed band (described as having relatively high interference) has low usage—the specification provides no guidance for determining which band has “relatively low” interference and which has “relatively high”

interference—and which is “expected to experience” those relative interference levels. Netgear’s attempted rewrite therefore fails.

Netgear also argues the claims should not be found indefinite because the Examiner allowed them. Netgear Br. at 11–13. Yet, an Examiner necessarily must have allowed a claim before a court can consider whether it is indefinite. If Netgear were correct, then no court could ever find a claim indefinite. In fact, courts routinely find claims indefinite, including in cases like the present one, where the patentee used terms of degree such as “low” and “high,” without objective boundaries in the specification. See TP-Link Br. at 9–10 (citing cases). To be sure, if the Examiner had considered the *same* indefiniteness issue during prosecution, that could be probative evidence of a POSITA’s understanding. But that is not the case here, where the Examiner’s concern was that interference levels are “subject[] to constant change.” JMX-006 at 278-79. The Examiner appears to have believed that introduction of a POSITA’s “expectations” into the claim resolved that issue (presumably because the Examiner deemed “expectations” to be more stable over time than interference levels, although that is unclear). Because the Examiner did not consider the Federal Circuit’s requirement that terms of degree must be accompanied by objective guidance in the specification, the Examiner’s allowance of the patent is not probative evidence of definiteness. See *TVnGO Ltd. (BVI) v. LG Elecs. Inc.*, 861 F. App’x 453, 458 (Fed. Cir. 2021) (rejecting argument that terms were definite “merely because they were added to the claims, discussed, understood and considered by the Examiner, and ultimately allowed”). Netgear also cites the Examiner’s appeal brief and the subsequent PTAB decision, see Netgear Br. at 12 (citing ’714 FH, 402, 455–56), but these do not substantively address the “expected to experience [low/high] interference” limitations, and—as Netgear acknowledges—the PTAB’s reversal of the Examiner’s prior art rejection was “based on other limitations.” Netgear Br. at 12.

Netgear further cites a variety of cases, all of which are distinguishable. In *Sonix Tech. Co. v. Publications Int’l, Ltd.*, the patent included substantial objective guidance and examples regarding the scope and nature of a “visually-negligible” indicator. 844 F.3d 1370, 1379 (Fed. Cir. 2017). Here, in contrast, the patent provides no objective guidance or examples of “low” or “high” interference levels (beyond the insufficient description of licensed vs. unlicensed bands). In *One-E-Way, Inc. v. Int’l Trade Comm’n.*, the intrinsic record clarified that the term “virtually free from interference” was used “in a non-technical manner to simply mean that the wireless headphone user is able to listen without eavesdropping.” 859 F.3d 1059, 1066 (Fed. Cir. 2017). In this case, the intrinsic record provides no analogous simple, “non-technical” meaning for “high” and “low” interference. In *Nature Simulation Systems Inc. v. Autodesk, Inc.*, the court found that a claim amendment made during prosecution and discussed with the Examiner resolved the indefiniteness issue. 50 F.4th 1358, 1367 (Fed. Cir. 2022). Here, as noted above, the Examiner did not address the indefiniteness issue TP-Link has raised. In *Tinnus Enterprises, LLC v. Telebrands Corp.*, unlike here, the Examiner offered his own claim amendments and explanatory remarks that resolved the indefiniteness issue. 733 F. App’x 1011, 1019 (Fed. Cir. 2018). And in *Cathx Research Ltd. v. 2G Robotics, Inc.*, the court found the relevant limitation’s scope was clear in view of the intrinsic record as a whole, including the Examiner’s and applicant’s commentary on the amended claim language. No. 5:21-cv-00077, Dkt. No. 165, at 17–18 (E.D. Tex. Feb. 21, 2023). Here, the record contains no explanatory language clarifying the objective boundaries of “low” or “high” interference.

At bottom, the indefiniteness issue is straightforward. Although the Federal Circuit permits patentees to use terms of degree in their claims, patentees must, in exchange, provide objective guidance in the specification so POSITAs can determine when the terms are satisfied. In this case,

the patentee chose to use the terms of degree “low” and “high”—compounded by the subjective term “expected”—but did not provide the required objective guidance in the specification. *See infra* § II.A.2 (citing cases). Thus, the claims are indefinite.²

II. U.S. PAT. NO. 9,468,025

A. Disputed Terms

1. “wherein the gateway device and the wireless access devices include a processor executing the extended management function...” (claim 7)

Netgear acknowledges that the patent contemplates two embodiments for the extended management function: (1) a first embodiment where the extended management function is “distributed among a plurality of devices”; and (2) a second embodiment where it “is resident in every wireless access device within the extended network.” Netgear Br. at 19–20. The original pending claim 7 encompassed the first embodiment, reciting that the gateway device “and/or” wireless access devices executed the extended management function. TP-Link Br. at 14. In response to a prior art rejection, however, the applicant specifically amended the claims to strike “/or,” leaving the claim in conjunctive form and thereby requiring the extended management function to be included in the claimed gateway device *and* wireless access devices. Based on the claim’s plain language, it should be given this conjunctive interpretation, consistent with the second embodiment. *See id.* at 13–15; *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008) (“It is often the case that different claims are directed to and cover different disclosed embodiments.”).

² If the ALJ declines to find the claims indefinite, TP-Link submits that the “expected to experience low interference” and “expected to experience high interference” limitations should be limited to licensed and unlicensed bands, respectively. While TP-Link does not believe that construction has sufficient support to overcome indefiniteness, *see* TP-Link Br. at 9, it at least provides an objective, administrable boundary to the claims, with some support in the specification.

Netgear presents no compelling contrary argument. While it relies heavily on case law regarding “comprising” and “one or more” language, Netgear Br. at 19, that discussion is beside the point. TP-Link does not dispute that the claimed gateway device and wireless access devices can each include one or more processors executing the extended management function. However, regardless of how many processors a given device uses, the gateway device *and* the other wireless access devices must include the extended management function, consistent with the conjunctive plain claim language and the patentee’s amendment during prosecution. Netgear’s position appears to be that the claimed “one or more” processors can reside in only one of the claimed devices—or perhaps somehow be distributed across the claimed devices—such that no particular gateway or wireless access device needs to itself include the claimed extended management function. But this disjunctive/distributed meaning is inconsistent with the plain claim language—particularly in view of the patentee’s conjunctive amendment—and does not follow from any Federal Circuit case that Netgear cites regarding “one or more” language.

Netgear further argues that the patentee used the word “each” when it meant to. Netgear Br. at 20. But there are multiple ways to express a conjunctive meaning in the English language—no legal or grammatical principle requires that the word “each” be used. Here, the patentee used “each” in only two other claims (claims 9 and 16), where it was grammatically necessary. In claim 7, the conjunctive meaning is sufficiently clear from the word “and,” so reciting “each” was unnecessary. *See* Ex. 2, Scalia & Garner, *Reading Law: The Interpretation of Legal Texts* 116 (2012). Put simply, a claim’s use of “each” in a different context does not somehow rewrite the conjunctive “and” as the disjunctive “and/or” across the claims—particularly when the applicant specifically struck out “/or” during prosecution.³ Netgear also argues that a departure from plain

³ *Hologic, Inc. v. Minerva Surgical, Inc.* does not support Netgear’s argument. There, a party sought to introduce a “moisture-permeable” limitation that was entirely absent from the claim at issue, but was present in other claims.

meaning requires lexicography or disavowal. Netgear Br. at 20. But TP-Link’s construction *is* the plain meaning of “and”—and the applicant’s striking “/or” *was* a clear disavowal of Netgear’s disjunctive interpretation. *See Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1359 (Fed. Cir. 2017).

2. “highest quality wireless connection” (claims 3, 7, 16)

Netgear’s brief confirms the central problem with this term—although many different metrics exist to assess connection “quality,” the specification does not provide any objective guidance regarding how any of those metrics should be selected, weighed, or balanced against one another to determine which connection has the “highest quality.” The specification’s failure in this regard renders the claims indefinite. *See* TP-Link Br. at 15–17.

Netgear’s brief (at pages 21–23) provides a veritable tour of various sources and criteria that could be considered when trying to identify the “highest quality” connection, including: (1) dependent claims (“a wireless signal strength, a noise level, a connection capability for a wireless device, a connection capability for a wireless access device, an extended network topology, a utilization status and a connection path”); (2) the Smadi prior art (frame error rates); (3) metrics identified in the specification (“either a simple value, such as a connection speed, or a number of different values, such as connection speed and ... the connection between the gateway wireless access device 122”); and (4) the specification’s numerical examples, which are applied in the context of an equation: “the lowest speed among all links (between any two contiguous devices) in the connection path ... divided by the number of links between the gateway ... and the wireless device.” ’025 Patent at 12:16–34.

44 F.4th 1358, 1368 (Fed. Cir. 2022). Here, the conjunctive “and” is present in the limitation at issue, and there is no analogous limitation in another claim that differs only by its addition of the term “each.”

The term’s unavoidable indefiniteness problem stems from the fact that there are myriad ways a POSITA could select, combine, balance, and weigh those various metrics to evaluate connection quality—yet the specification provides ***no objective guidance*** for doing so. See *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1354 (Fed. Cir. 2005) (claims held indefinite where “the identification of parameters one might consider fails to explain how the parameters should be evaluated or weighed”); *Intell. Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372, 1381 (Fed. Cir. 2018) (claims held indefinite where specification disclosed multiple “network performance characteristics” but provided no objective guidance on how they should be evaluated); *Dow Chem. Co. v. Nova Chemicals Corp. (Canada)*, 803 F.3d 620, 634–35 (Fed. Cir. 2015) (claims held indefinite where four methods existed to identify “maximum slope” but specification provided no guidance on which method should be used); *HZNP Medicines LLC v. Actavis Lab’ys UT, Inc.*, 940 F.3d 680, 698 (Fed. Cir. 2019) (claims held indefinite where specification disclosed two different methods for evaluating “better drying time” but did not specify which should be used); *Teva*, 789 F.3d at 1344–45 (claims held indefinite where intrinsic record identified multiple ways to measure molecular weight but did not consistently indicate which should be used).

To avoid indefiniteness, the specification simply had to identify a particular objective way to assess quality (such as the “frame error rates” in the Smadi prior art). But it failed to do so. Instead, the specification identifies a dozen different metrics and leaves up to the user the decision of how to apply them. As a result, the determination of which wireless connection is the “highest quality” is “entirely subjective and user-defined ... [with] different meanings for different users,” making the claims indefinite. *Intell. Ventures*, 902 F.3d at 1381; see also TP-Link Br. at 16 (citing cases).

Moreover, while Netgear argues that the Examiner discussed this limitation in the context of the prior art, Netgear Br. at 23, Netgear’s citations reveal no substantive discussion. *See* JMX-0007 (’025 FH) at 124–25, 164–68. This situation therefore is different from the *Tinnus* case, where the Examiner “**added the language** in an examiner’s amendment” and specifically discussed its meaning to explain how it provided novelty over the prior art. *Tinnus*, 733 F. App’x at 1019–20. Here, where there was no substantive discussion by the Examiner, Netgear’s argument reduces to the observation that the Examiner granted the claims—which is always the case in patent infringement litigation and does not save them from indefiniteness. *See TVnGO*, 861 F. App’x at 458. Netgear also relies on *Sonix*, but in that case, the term “visually-negligible” involved “what can be seen by the normal human eye,” which “provide[d] an objective baseline through which to interpret the claims.” 844 F.3d at 1378. Here, there is no objective baseline; just a subjective “highest quality” determination based on numerous conflicting criteria weighed according to the user’s own judgment and opinion. *Datamize*, 417 F.3d at 1354.

3. Means-plus-function: “processor executing the extended management function to” (claim 7)

While Netgear points to a variety of cases finding “processor” terms were not subject to § 112(f), Netgear Br. at 24–27, there are equally as many cases finding “processor” terms *were* subject to § 112(f). *See* TP-Link Br. at 20–21. The question is what the specific facts of this case show, and TP-Link submits they show that § 112(f) applies. Although Netgear relies on the non-precedential case *VDPP LLC v. Vizio, Inc.*, the holding of that case rested on the underlying § 112(f) determination being entirely conclusory and lacking any support. *See* 2022 WL 885771, at *2 (Fed. Cir. Mar. 25, 2022). That is far from the situation here, where TP-Link has provided extensive evidence that § 112 applies, including from the intrinsic record, expert testimony, and contemporaneous dictionary definitions. *See* TP-Link Br. at 18–21, Ex. 1 (Almeroth Decl.) ¶¶77–

80. Netgear also relies on *Prisua*, but that case is distinguishable for the reasons discussed in TP-Link’s opening brief. TP-Link Br. at 19–20. Netgear’s other cases—almost all of which pre-date *Egenera*—are similarly distinguishable. In none of those cases did the specification recite (as it does here) that the claimed “processor” could be “any type of processor” implementing functional components “using hardware and/or software.” ’025 Patent at 8:66–9:6. On the contrary, in those cases: (1) the claimed processor was a more specific type (*e.g.*, a CPU); (2) the claims provided additional structural context; and/or (3) the function was relatively simple and did not require special structure to perform.⁴ None of these facts applies here.

Netgear also relies on dictionary definitions, but these do not show that a “processor” is sufficient structure to perform the claimed extended management function. Indeed, Netgear itself appears to broadly define “processor” as “a variety of structures that can perform particular tasks, depending on application.” Netgear Br. at 26; *see also, e.g.*, Ex. 7.9 (“**processor** ... A device that can perform logical and arithmetic operations.”). The specification similarly states that the claimed “processor” could be “any type of processor” implementing functional components “using

⁴ See *Ex Parte Cutlip et al.*, Appeal 2011-011658, Decision on Appeal in Application No. 11/345,010, at 5 (June 2, 2014) (§ 101 analysis unrelated to sufficiency of structure under § 112(f)); *Certain Smart Televisions*, Inv. No. 337-TA-1338, Order No. 15 at 33 (May 17, 2023) (“processor” limited to “general purpose processor” with relatively simple claimed function); *Panoptis Patent Mgmt., LLC v. Blackberry Ltd.*, No. 2:16-CV-62-JRG-RSP, 2017 WL 497571, at *18–19 (E.D. Tex. Feb. 7, 2017) (court interpreted “processor” as a CPU, implementing straightforward function of “associating a text message with an attachment”); *Advanced Mktg. Sys., LLC v. CVS Pharmacy, Inc.*, No. 6:15-CV-134-JRG-KNM, 2016 WL 1741396, at *20 (E.D. Tex. May 3, 2016) (claims provided further evidence of structure); *Syncpoint Imaging, LLC v. Nintendo of Am. Inc.*, No. 2:15-CV-00247-JRG-RSP, 2016 WL 55118, at *20 (E.D. Tex. Jan. 5, 2016) (structural arrangements apparent from recited objectives and operations of processor); *Finjan, Inc., v. Proofpoint, Inc.*, No. 13-CV-05808-HSG, 2015 WL 7770208, at *11 (N.D. Cal. Dec. 3, 2015) (structural character of processor informed by claims’ description of its interactions with other components); *Odyssey Wireless, Inc. v. Apple Inc.*, No. 15-CV-1735-H (RBB), 2016 WL 3055900, at *11 (S.D. Cal. Mar. 30, 2016) (structural arrangements apparent from recited objectives and operations of processor); *Nomadix, Inc. v. Hosp. Core Servs. LLC*, No. CV 14-08256 DDP (VBKX), 2016 WL 344461, at *7 (C.D. Cal. Jan. 27, 2016) (claimed configurations provided both operation and function to term); *Techno View IP, Inc. v. Facebook Techs., LLC*, No. CV 17-386-CFC-CJB, 2018 WL 6427874, at *7 (D. Del. Dec. 7, 2018) (claims provided input-output structure for processor); *SEVEN Networks, LLC v. Apple Inc.*, No. 2:19-CV-115-JRG, 2020 WL 1536152, at *50 (E.D. Tex. Mar. 31, 2020) (“numerous operations, interrelationships, and configuration details” provided structural meaning for “processor”).

hardware and/or software.” ’025 Patent at 8:66–9:6; *see also* Ex. 13 (Almeroth Decl.) ¶¶6–8. That is the same lack of structural specificity the Federal Circuit found subject to § 112(f) in *Williamson* and *Egenera*. *See* TP-Link Br. at 19.

Ultimately, § 112(f)’s purpose is to prevent functional claiming—*i.e.*, effectively claiming all structures that implement a recited function. In the computing context—where every function is implemented via some combination of hardware and software—use of a structural term so broad as to encompass any “hardware and/or software” improperly captures the entire field of computing structures that implement the claimed function. *See Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1383–84 (Fed. Cir. 2009); *Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333–34, 1336 (Fed. Cir. 2008). That is functional claiming, and § 112(f) must apply to restrict the claims to the corresponding structure described in the specification. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1350–51 (Fed. Cir. 2015); *Egenera, Inc. v. Cisco Sys., Inc.*, 972 F.3d 1367, 1372–75 (Fed. Cir. 2020).

4. “the communication path” (claim 16)

Netgear does not dispute that this term lacks antecedent basis, but nonetheless contends that a POSITA would understand which communication path is being referenced based on contextual clues. Netgear Br. at 27–30. However, none of Netgear’s arguments resolves the term’s ambiguity, and it should be held indefinite.

While Netgear initially asserts that “communication path” has a plain meaning, Netgear Br. at 28, that does not address the ambiguity regarding *which* communication path is referenced in the claim. Netgear argues the preceding claim language indicates the claimed communication path must be the path along which the “wireless connection quality information” (CQI) is transmitted. *Id.* Yet, that does not follow from the claim language. The claim states the CQI is transmitted to the gateway router “*to* establish the communication path with the wireless access

device,” which indicates that the CQI transmission precedes the establishment of the communication path—indeed, it is the CQI that is used to identify the communication path to be established. *See* ’025 Patent at 3:58–63, 4:30–39; Ex. 13 (Almeroth Decl.) ¶11. It therefore makes no sense for the CQI’s transmission path to correspond to the “establish[ed] ... communication path,” because the path has not yet been established when the CQI is transmitted. *Id.* Moreover, the claim recites transmitting the CQI “to **at least** a gateway router.” Thus, even if “the communication path” did correspond to the transmission path of the CQI, it would remain unclear what endpoints (or intervening points), other than the “gateway router,” might or might not be part of the path. *Id.* Indeed, the specification indicates that CQI can generally be exchanged “with a plurality of other network devices,” ’025 Patent at 4:30–39, yet the claim does not specify which other devices the claimed path includes. Ex. 1 (Almeroth Decl.) ¶¶86–89. Even with respect to the claimed “the wireless access device,” which presumably forms one endpoint of the path, the claim provides no clear antecedent basis, but merely specifies “a plurality of wireless access devices,” leaving unclear **which** wireless access device is the endpoint of the claimed “the communication path.” *See* TP-Link Br. at 24.

Netgear’s arguments based on the other independent claims likewise miss the mark. Netgear Br. at 29. Although the term “communication path” standing alone may have the same meaning across claims, it is the **differences** in claim language pertaining to **which** communication path is being claimed that are important here. Whereas claims 1 and 7 specify which communication path is being claimed, claim 16 **does not**—and (as noted above) it introduces further ambiguity by reciting “**at least** a gateway router.” Federal Circuit law presumes such differences in claim language should be given effect. *See Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349 (Fed. Cir. 2012) (“when different words are used in separate

claims, they are presumed to have different meanings”). There is no basis to read the specificity in claims 1 and 7 into claim 16, which lacks such language.

Netgear also contends that the specification and prosecution history support its construction. Netgear Br. at 29–30. Yet, the specification merely confirms that there are *multiple* potential paths from a given router to other nodes in the network (including the gateway). *See, e.g.*, ’025 Patent at Fig. 3A, 3B (PATH #1 and PATH #2), 12:16–50, 4:30–39. And even if the prosecution history indicated the path can include a gateway router, it does not shed light on *which* path to the gateway (or through it) is claimed, or what other endpoints or midpoints might exist in addition to the claimed “*at least* a gateway router.” *See, e.g.*, ’025 Patent at 4:30–39. The issue remains that given the context of the claim, a POSITA would not know which of these paths is being claimed, which devices are included, and where the paths begin and end, leaving the claim indefinite. Ex. 1 ¶¶6–9.

III. U.S. PAT. NO. 10,681,698

A. Disputed Terms

1. “default frequency band” (claims 1 and 12)

Netgear acknowledges that the claims recite “at least one, if not two” attempts to connect to a default band, followed by an attempt to use a different frequency range “as a backup” if the default band’s signal strength is below a threshold. Netgear Br. at 49. Netgear argues that in the context of this overall “operational flow,” the default band can be considered “preferred.” *Id.* Yet, the claim construction task is not to select a word that broadly describes the overall “operational flow” of the claims. Rather, the task is to define the specific term “default frequency band.” For the reasons discussed in TP-Link’s opening brief, this term should be given its plain meaning—as opposed to replacing the term “default” with “preferred,” which has a different meaning. *See* TP-Link Br. at 42–46. Indeed, Netgear’s position contradicts the claims’ “operational flow”—because

the claimed initial attempt would no longer be required to connect to a **default** band, but merely to **any** band that has some associated “preference.” *See id.* The specification never contemplates this scenario, let alone “implicitly define[s]” default to have this meaning. Netgear Br. at 49.

Netgear’s criticisms of TP-Link’s construction miss the mark. Contrary to Netgear’s suggestions, Netgear Br. at 51, the intrinsic record—including the specification’s embodiments and their “operational flow”—are consistent with TP-Link’s construction. *See* TP-Link Br. at 43, 45–46. While Netgear objects to the absence of user choice, that is what the word “default” means—it is a preset selection used **without** user input. That meaning is reflected in both general-purpose and technical dictionaries, as well as in the specification, which never contemplates a user selecting the initial band. In fact, it is **Netgear’s** apparent intent to include a user-selected choice that flies in the face of the intrinsic and extrinsic record. To be sure, the patent’s “comprising” claims do not exclude user involvement altogether—but that does not mean that the **specific** term “default frequency band” can be satisfied where a user chooses from among multiple available options, such that none is treated as a default. In sum, Netgear’s attempt to expand the scope of the term to capture bands selected by users (or algorithms) improperly erases the core meaning of the word “default,” and thereby contradicts the claims and specification. Accordingly, Netgear’s construction should be rejected.

IV. U.S. PAT. NO. 10,278,179

A. Disputed Terms

1. Preambles of Claims 1, 11

TP-Link’s construction confirms the grammatical conclusion that the structure recited in the preamble is what performs (or is configured to perform) the claimed steps. TP-Link Br. at 25–26. This does not import an “exclusiv[ity]” requirement, as Netgear suggests. Netgear Br. at 47. It is simply what the claims say. To the extent Netgear wishes to assert an infringement theory

that a particular accused first mesh point performs a claimed step (notwithstanding other entities' participation in the step), that is a question for later. However, any argument that as a matter of claim construction the first mesh point ***need not*** perform the four recited steps contradicts the claim language and should be rejected.

While Netgear argues that dependent claim 8 allows other entities to facilitate the selection of the claimed backhaul communication technology, Netgear Br. at 47, that is not inconsistent with claim 1's plain language reciting that "***establishing*** a backhaul communication" is "performed by [the] first mesh point." Moreover, even if there were inconsistency, the result would be indefiniteness, not rewriting the claims. See *TVnGO*, 861 F. App'x at 460 (holding independent and dependent claims indefinite based on inconsistency between them). Further, Netgear incorrectly contends that claim 1 covers embodiments in which the claimed steps are performed by "a controlling entity" that is "distributed" or "remotely controllable ... via a remote server." Netgear Br. at 47. That contradicts the claim's plain language stating that its steps are "performed by [the] first mesh point." There is nothing problematic about claims being directed only to certain embodiments (in this case, embodiments that are centralized, as opposed to distributed or remote). See *Helmsderfer*, 527 F.3d at 1383. Netgear's arguments regarding claim 11 fail for the same reasons. Netgear Br. at 48. In addition, contrary to Netgear's assertions, TP-Link is not construing claim 11 as a method claim—it is mirroring the "method" step language recited in claim 11 itself. Finally, TP-Link's construction does not address the physical location of the processors—it simply clarifies the uncontroversial point that the "mesh point" they implement is what performs the claimed steps.

2. “forward wireless communication” / “backhaul communication, separate from the forward wireless communication” (claims 1, 11)

For the reasons discussed in TP-Link’s opening brief, there are multiple potential definitions for these terms in relation to another. However, none would be acceptable to a POSITA, making the terms indefinite. TP-Link Br. at 27–31.

As an initial matter, the parties agree that “backhaul communication,” at least in isolation, refers to “communication between mesh points.” Netgear Br. at 35. There likewise appears to be no dispute that a backhaul can use either (1) a frequency band dedicated to backhaul communications, or (2) a general-purpose resource, which is a band available for both backhaul (mesh point ↔ mesh point) and fronthaul (client ↔ mesh point) communications. *Id.*; Ex. 1 ¶¶56–57.

The confusion arises regarding the meaning of the term “forward wireless communication.” As recited in the claims, the forward wireless communication is established between a “first mesh point” and a “second mesh point.” ’179 Patent, Claim 1. Thus, it is “communications between mesh points”—in other words, backhaul communication. Indeed, the specification uses “forward” to refer to forwarding client traffic along the backhaul. *See id.* at 2:8–12, 4:6–11, 4:34, 5:39–45, 11:61–65, 27:5–10. Yet, the claim also recites that the “forward wireless communication” is “*separate from*” the backhaul. But it makes no sense that the “forward wireless communication” is client traffic forwarded over the backhaul communication that is separate from backhaul communication. No party proposes that this definition is viable. Ex. 1 ¶59; Netgear Br. at 35–42.

Netgear’s attempted solution is to construe “forward wireless communication” to mean *not* client traffic forwarded over a backhaul, as the specification describes, but *any* backhaul communication over a general-purpose *resource*. *Id.* at 35–42. Yet, as discussed in TP-Link’s

opening brief, the specification provides no basis for that construction. TP-Link Br. at 28–30. Rather, the specification uses “forward” in connection with forwarding *client data* over backhauls, which is independent of the *resource* used for such forwarding. *Id.* While it is true that the specification describes embodiments where both dedicated and general-purpose resources are used for the backhaul, Netgear Br. at 37–40, it never uses “forward” to refer to these general purpose resources.

The specification’s embodiments further describe a “general hierarchy” in which: (1) a dedicated backhaul is used; (2) if the current dedicated backhaul is unperforming, alternative dedicated backhauls are considered; and (3) “only if all alternative backhauls are also underperforming then is the general purpose wireless resource (i.e., client facing resource) considered.” ’179 Patent at 29:47–30:11. This hierarchy aligns with the claims *if* the claimed “backhaul” is limited to a “dedicated backhaul” and the claimed “forward wireless communication” is understood as a general-purpose resource. Yet, this is not how Netgear seeks to construe the claims. Netgear interprets “backhaul” as backhaul over *any* resource, dedicated or general-purpose. Netgear Br. at 35. The result is an overbroad interpretation where “backhaul” and “forward” communications alike occur over general-purpose resources, which contradicts the hierarchy described in the specification. This is not a viable approach to construing these claims—nor is any other, *see* TP-Link Br. at 27–31, which renders the claims indefinite. *See HZNP Meds.*, 940 F.3d at 698.

3. Markush terms (claims 1, 11)

TP-Link’s construction is based on prosecution history disclaimer, TP-Link Br. at 31–35, as TP-Link informed Netgear during the parties’ meet-and-confer. Netgear nevertheless chooses to ignore the prosecution history entirely. Netgear Br. at 43–46. There is thus nothing for TP-

Link to respond to at this time. If Netgear’s responsive brief presents arguments regarding the prosecution history, TP-Link will respond at the hearing.

V. U.S. PATENT NO. 10,356,681

A. Disputed Terms

1. “dynamically optimiz[ing]” / “better suited to handle a client by a predetermined margin” (claims 3, 10)

Netgear cannot dispute the basic facts that render these terms indefinite. The specification provides numerous metrics that could be used to assess whether one connection is “optimized” or “better suited” than another. TP-Link identifies twelve such metrics in the intrinsic record, TP-Link Br. at 37–39, and Netgear concedes the existence of at least three (downlink power, rate, and RSSI), Netgear Br. at 55. Yet, the specification provides no guidance regarding how these competing metrics should be weighed and balanced to determine when a connection is “optimized” or “better suited.” TP-Link Br. at 36–39; *supra* § II.A.2 (citing cases).

Nothing in Netgear’s brief changes the analysis. The first metric it identifies—RSSI—appears only in a different, unasserted claim. *See* Netgear Br. at 54 (citing ’681 Patent, Claim 1). While an unasserted claim’s recitation of a single, objective metric may support *that* claim’s definiteness, it only underscores the indefiniteness of the *asserted* claims, which do not identify any such metrics. *See Aspex*, 672 F.3d at 1349. Netgear next identifies multiple “objective measurements, such as downlink power or rate or RSSI.” Netgear Br. at 55. But Netgear does not—and cannot—identify any objective guidance in the specification regarding how these different metrics should be weighed or balanced to determine when a connection is “optimized” or “better suited.” The specification leaves that determination up to individual users, each of whom may find different metrics more or less important, depending on their applications and individual

opinions, rendering the ultimate determination “entirely subjective and user defined.” *Intell. Ventures*, 902 F.3d at 1381; Ex. 13 ¶¶14–16; TP-Link Br. at 37 (citing cases).

Netgear further argues that Figure 4 discloses an algorithm for roaming legacy clients. Netgear Br. at 55–56. But the relevant step in Figure 4 is “[t]rigger roaming if another AP is better suited to handle a client by some margin,” which simply restates the claim language—if another AP is “better suited”—without providing any guidance on the critical question of *how* to objectively determine which AP is better suited. Netgear also argues that “the signal strength for the various APs in the system increase or decrease accordingly as the client moves within the network.” Netgear Br. 56–57. Again, this vague statement does not provide any way to balance the conflicting metrics in the specification. While mathematical precision may not be required to avoid indefiniteness, *objective guidance* is—and the patent fails to provide it.

Netgear’s case citations do not support its position. Again, Netgear primarily relies on *Sonix*, but in that case—as noted above—the term “visually-negligible” involved “what can be seen by the normal human eye,” which “provide[d] an objective baseline.” 844 F.3d at 1378. Here, there is no objective baseline, just a subjective “optimization” based on multiple conflicting metrics, weighed according to the user’s subjective judgment. The claims therefore are indefinite.

2. “monitor mode”

“Monitor mode,” also known as RFMON, is a well-known term of art in the Wi-Fi industry that refers to a specific mode with specific capabilities. TP-Link Br. at 39–41. This mode’s function and capabilities are expressly set forth in the ’681 patent’s specification. ’681 Patent at 6:58–65. Because the accused TP-Link functionality does not use monitor mode, Netgear is forced to broaden the term beyond its ordinary meaning to cover functionality that is unrelated to what a POSITA would understand monitor mode to be. Netgear’s construction should be rejected because

it contradicts the term’s ordinary meaning. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005).

The specification defines “monitor mode” in accordance with its well-known, ordinary meaning in the art. ’681 Patent at 6:58–65; Exs. 14–22 (extrinsic sources discussing monitor mode); *see also* Ex. 13 ¶19. Indeed, the patentee appears to have copied and pasted the definition from Wikipedia. *See* Ex. 14 (“Monitor mode is one of the seven modes that 802.11 wireless cards can operate in ...”). Given that the specification expressly states what “monitor mode” is—consistent with a meaning so well known it is shared across textbooks, publications, and even Wikipedia—there is no basis to depart from that meaning. *See In re Taylor Made Golf Co.*, 589 F. App’x 967, 971 (Fed. Cir. 2014) (Wikipedia is “indicative of common knowledge”).

Netgear’s attempts to conjure such a basis by criticizing its own specification’s definition and the term’s ordinary meaning do not hold water. Contrary to Netgear’s assertions, TP-Link’s construction does not “add[] requirements not present in the claim language.” Netgear Br. at 58. “Monitor mode” is an express claim term, and TP-Link’s construction simply gives the term its ordinary meaning in the art. In contrast, Netgear’s construction improperly strips the term of its ordinary meaning, and instead substitutes a specific use case from the patent’s embodiments involving “legacy client devices on the same channel.” *See* TP-Link Br. at 40–41; ’681 Patent at 7:9–14. Notably, this requirement is already separately recited in the asserted claims, but it is *not* recited in other (non-asserted) claims. ’681 Patent, Claims 7, 14 (reciting “perform[ing] monitor mode on different channels”). It therefore makes no sense to incorporate this requirement, which is present in only some claims, into a general definition of “monitor mode,” which under Federal Circuit law should be applicable to all claims. *In re Varma*, 816 F.3d 1352, 1363–64 (Fed. Cir. 2016).

Netgear also tries to escape the specification’s definition by arguing it is a mere “statement of capability.” Netgear Br. at 59. Yet, no law prevents modes from being defined in terms of their capabilities, and the patentee’s definition that does so here is perfectly understandable to a POSITA. *See Xerox Corp. v. 3Com Corp.*, 267 F.3d 1361, 1367 (Fed. Cir. 2001) (construing “spatial independence” in terms of capability); Ex. 13 ¶18. Similarly, the capability to capture packets without first having to associate with an AP is not a “negative limitation”—it is a core defining functionality of monitor mode that reflects an affirmative capability not present in other Wi-Fi modes. *See* Exs. 5, 14–22; Ex. 1 ¶¶98–99. The specification describes this functionality when introducing what “monitor mode” *is*—before describing the particular embodiments. ’681 Patent at 6:58–7:8.

TP-Link’s construction also does not prohibit APs from associating with other devices (Netgear Br. at 60)—it simply states that monitor mode *allows* APs to monitor received traffic without associating first. This functionality is what enables APs in some embodiments to “hop to another channel to make a measurement” of client devices, even though the AP is not associated with that channel or the devices thereon. *See* ’681 Patent at 7:56–8:13; Ex. 13 ¶¶21–22. Netgear further asserts that an AP must be associated with a network to receive traffic from it. Netgear Br. at 60. That is an incorrect technical statement—the function of monitor mode is to allow monitoring of received traffic *without* having to associate with a network first, as the specification *expressly states*. Again, it is precisely this functionality that enables the ’681 patent’s embodiments. Netgear’s interpretation contradicts the ordinary meaning of “monitor mode” and should be rejected.

WORD COUNT CERTIFICATE

The undersigned certifies that this Responsive Claim Construction Brief complies with the word limitation set forth in the Ground Rule 1.7. The certified word count includes footnotes and excludes caption, tables of contents or authorities, words in figures, the word count certificate, signature block, and the certificate of service.

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UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, DC
Before the Honorable Doris Johnson Hines
Administrative Law Judge

**In the Matter of Certain Wi-Fi Routers, Wi-Fi Devices, Mesh Wi-Fi Network Devices, and
Hardware and Software Components Thereof**
Inv. No. 337-TA-1361

CERTIFICATE OF SERVICE

I, Robert P. Leonard, hereby certify that on September 19, 2023, copies of the foregoing document were filed and served upon the following parties as indicated:

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/s/ Robert P. Leonard
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