IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA, LLC,

        Plaintiff,

    v.                                                              Civil Action No. 14-954-RGA

ADTRAN, INC.,

        Defendant.

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ADTRAN, INC.,

        Plaintiff and
        Counterclaim Defendant,

    v.                                                              Civil Action No. 15-121-RGA

TQ DELTA, LLC,

        Defendant and
        Counterclaim Plaintiff.

## MEMORANDUM OPINION

**ANDREWS, U.S. DISTRICT JUDGE:**

Currently before me are seven motions submitted by TQ Delta and ADTRAN regarding Family 10. This opinion will address TQ Delta's Motion for Summary Judgment of Infringement of Claims 5 and 14 of U.S. Patent No. 8,625,660 (D.I. 723), ADTRAN's Motion for Summary Judgment of Non-infringement – Family 10 (D.I. 737), and ADTRAN's Motion to Strike Portions of TQ Delta's Family 10 Reply and Supplemental Expert Reports (D.I. 732).[1] I have reviewed the parties' briefing and related papers. (D.I. 725, 765, 790; 738, 773, 791; 733, 772,

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[1] All docket items citations refer to C.A. No. 14-954 unless otherwise noted.

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788). For the reasons explained more fully below, I will deny TQ Delta's motion for summary judgment, grant ADTRAN's motion for summary judgment, and dismiss ADTRAN's Motion to Strike as moot.

## I.    BACKGROUND

Plaintiff TQ Delta filed this lawsuit against Defendant ADTRAN on July 17, 2014, asserting infringement of thirty-two patents. (D.I. 1). ADTRAN countersued. (C.A. 15-121, D.I. 1). I have divided the case into separate trials based on families of patents. (D.I. 369). The patent-in-suit represents "Family 10" of the patents that Plaintiff has asserted against Defendant ADTRAN. (D.I. 318, at 1). The '660 patent relates to increasing the data rate and impairment immunity of multicarrier communications systems by assigning different margins to individual carriers. The '660 patent claims an apparatus for modulating bits onto sets of carriers using different signal to noise ratio margins. The asserted claims of the '660 patent read as follows:

> 5. An apparatus comprising:
>
> A multicarrier communications transceiver operable to modulate a first plurality of bits onto a first plurality of carriers using a first Signal to Noise Ratio (SNR) margin and to modulate a second plurality of bits onto a second plurality of carriers using a second SNR margin,
>
> wherein the first plurality of carriers is different than the second plurality of carriers,
>
> wherein the first SNR margin specifies a first value for an increase in noise associated with the first plurality of carriers, wherein the second SNR margin specifies a second value for an increase in noise associated with the second plurality of carriers,
>
> and wherein the first value for the increase in noise is different than the second value for the increase in noise.

('660 patent, cl. 5).

> 14. A multicarrier communications transceiver operable to demodulate a first plurality of bits from a first plurality of carriers using a first Signal to Noise Ratio

(SNR) margin and to demodulate a second plurality of bits from a second plurality of carriers using a second SNR margin,

wherein the first plurality of carriers is different than the second plurality of carriers,

wherein the first SNR margin specifies a first value for an increase in noise associated with the first plurality of carriers, wherein the second SNR margin specifies a second value for an increase in noise associated with the second plurality of carriers,

and wherein the first value for the increase in noise is different than the second value for the increase in noise.

('660 patent, cl. 14).

The Accused Products at issue are those containing Broadcom's BCM65300 chipset. The Accused Products employ Digital Subscriber Line (DSL) technology, which uses multicarrier modulation to provide broadband access to data networks, such as the Internet, via copper wires of a local telephone network.

TQ Delta argues that the VDSL2 capabilities of the Accused Products infringe the asserted claims because they are "capable of" operating in single latency with ROC mode, in accordance with the VDSL2 standard. (D.I. 725 at 10). Specifically, TQ Delta contends that the BCM65300 DSL chipset in the Accused Products provides capability for a user to turn on single latency with ROC mode and set a non-zero SNR margin offset, meeting each element of the asserted claims. (*Id.*) According to TQ Delta, the SNRMOFFSET-ROC parameter can be set to a non-zero value through the command line interface ("CLI"). (*Id.* at 18).

TQ Delta also asserts that the Accused Products infringe claim 5 when retransmission is enabled pursuant to the G.inp standard. (*Id.* at 9). According to the testing of TQ Delta's expert Dr. Cooklev, each limitation of claim 5 is met when retransmission is enabled, even when SNRMOFFSET-ROC is equal to zero. (*Id.*).

ADTRAN argues that the Accused Products do not infringe because single latency with ROC mode cannot be enabled in the Accused Products by an end user of the product, and the target SNR margin for the ROC is default set to a value of zero by the source code. (D.I. 765 at 9-10). A purchaser of the Accused products does not have the option of changing these settings. (*Id.*). ADTRAN also asserts that the Accused Products cannot have two different SNR margins as required by the claims because by default they are the same when the SNRMOFFSET-ROC value is equal to zero. (*Id.* at 15-16).

In its motion to strike, ADTRAN moves to preclude certain opinions offered in TQ Delta's reply and supplemental reports. (D.I. 733 at 1). The opinions relate to: (1) a user's purported ability to enable single latency with ROC mode using either a non-public interface and Broadcom's trade secret information or SNMP; and (2) retransmission mode resulting in infringement of claim 14. (*Id.*).

## II.    LEGAL STANDARD

### A.  Summary Judgment

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The moving party has the initial burden of proving the absence of a genuinely disputed material fact relative to the claims in question. *Celotex Corp. v. Catrett*, 477 U.S. 317, 330 (1986). Material facts are those "that could affect the outcome" of the proceeding, and "a dispute about a material fact is 'genuine' if the evidence is sufficient to permit a reasonable jury to return a verdict for the nonmoving party." *Lamont v. New Jersey*, 637 F.3d 177, 181 (3d Cir. 2011) (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)). When determining whether a genuine issue of material fact exists, the court must view the evidence in the light most

favorable to the non-moving party and draw all reasonable inferences in that party's favor. *Scott v. Harris*, 550 U.S. 372, 380 (2007); *Wishkin v. Potter*, 476 F.3d 180, 184 (3d Cir. 2007).

The burden then shifts to the non-movant to demonstrate the existence of a genuine issue for trial. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586-87 (1986); *Williams v. Borough of West Chester, Pa.*, 891 F.2d 458, 460–61 (3d Cir. 1989). A non-moving party asserting that a fact is genuinely disputed must support such an assertion by: "(A) citing to particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations . . . , admissions, interrogatory answers, or other materials; or (B) showing that the materials cited [by the opposing party] do not establish the absence . . . of a genuine dispute . . . ." Fed. R. Civ. P. 56(c)(1).

When determining whether a genuine issue of material fact exists, the court must view the evidence in the light most favorable to the non-moving party and draw all reasonable inferences in that party's favor. *Scott v. Harris*, 550 U.S. 372, 380 (2007); *Wishkin*, 476 F.3d at 184. A dispute is "genuine" only if the evidence is such that a reasonable jury could return a verdict for the non-moving party. *Anderson*, 477 U.S. at 247-49. If the non-moving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, the moving party is entitled to judgment as a matter of law. *See Celotex Corp.*, 477 U.S. at 322.

## III. DISCUSSION

TQ Delta has filed a motion for summary judgment of infringement of the '660 patent. (D.I. 723). ADTRAN has filed a motion for summary judgment of non-infringement of the '660 patent. (D.I. 737).

### A. Claim Construction

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). "'[T]here is no magic formula or catechism for conducting claim construction.' Instead, the court is free to attach the appropriate weight to appropriate sources 'in light of the statutes and policies that inform patent law.'" *SoftView LLC v. Apple Inc.*, 2013 WL 4758195, at *1 (D. Del. Sept. 4, 2013) (quoting *Phillips*, 415 F.3d at 1324) (alteration in original). When construing patent claims, a court considers the literal language of the claim, the patent specification, and the prosecution history. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977–80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). Of these sources, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal quotation marks omitted).

"[T]he words of a claim are generally given their ordinary and customary meaning. . . . [Which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312–13 (citations and internal quotation marks omitted). "[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent." *Id.* at 1321 (internal quotation marks omitted). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id.* at 1314.

When a court relies solely upon the intrinsic evidence—the patent claims, the specification, and the prosecution history—the court's construction is a determination of law.

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*See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). The court may also

make factual findings based upon consideration of extrinsic evidence, which "consists of all

evidence external to the patent and prosecution history, including expert and inventor testimony,

dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317–19 (internal quotation marks

omitted). Extrinsic evidence may assist the court in understanding the underlying technology,

the meaning of terms to one skilled in the art, and how the invention works. *Id.* Extrinsic

evidence, however, is less reliable and less useful in claim construction than the patent and its

prosecution history. *Id.*

"A claim construction is persuasive, not because it follows a certain rule, but because it

defines terms in the context of the whole patent." *Renishaw PLC v. Marposs Societa' per*

*Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that "a claim interpretation that would

exclude the inventor's device is rarely the correct interpretation." *Osram GMBH v. Int'l Trade*

*Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (citation and internal quotation marks omitted).

Claims 5 and 14 require multicarrier transceivers "operable to" perform certain actions.

In the claim construction proceedings for Family 10, the parties did not ask me to construe

"operable to." (*See* D.I. 348). The parties now dispute the meaning of "operable to," so I now

discuss it here.

TQ Delta argues that because the asserted claims are apparatus claims, the Accused

Products infringe if they are "capable of" performing the recited functionality. (D.I. 725 at 2).

According to TQ Delta, it is "irrelevant" that single latency with ROC mode is not turned on

when the Accused Products are sold; what matters is that the Accused Products contain the

necessary hardware and software that provide the "native capability to operate" in single latency

with ROC mode pursuant to the VDSL2 standard. (*Id.* at 13).

ADTRAN construes the claim requirement that the Accused Products be "operable to" perform the allegedly infringing functionality as having a narrower meaning than the claim language "capable of." (D.I. 765 at 7). According to ADTRAN, there is no infringement because ROC mode is optional in the VDSL2 standard, not turned on, and not reasonably capable of being reconfigured when the Accused Products are sold. (*Id.* at 9; citing D.I. 739, Ex. A (Wesel Rpt.) ¶¶ 95, 258; Brody Vol. I Tr. 253:4-18).

The cases cited by TQ Delta support ADTRAN's contention that "operable to" should be construed to have a different meaning than "capable of." In *Finjan, Inc. v. Secure Comput. Corp.*, the Federal Circuit relied on the claim language in determining that capability, and not operation, was the relevant inquiry for infringement. *See* 626 F.3d 1197, 1204-05 (Fed. Cir. 2010) (In discussing claim limitations reciting "engines," the court stated, "to infringe a claim that recites capability and not actual operation, an accused device 'need only be capable of operating' in the described mode. . . . In this case, Finjan's non-method claims describe capabilities without requiring that any software components be "active" or "enabled."). TQ Delta cites *Fantasy Sports* for the proposition that the Accused Products infringe because the software code of the BCM65300, as it appears in the Accused Products, contains the capability to be modified such that the allegedly infringing functionality is enabled. (D.I. 725 at 13-14). In that case, however, the end user of the program had the ability to select certain options to activate the infringing functions. *See Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108 (Fed. Cir. 2002). Here, the end user does not have this ability. (D.I. 765 at 9-10; citing D.I. 740, Gusler Tr. 134:2-135:1, 136:4-15, 136:22-137:3; Wesel Rpt. ¶¶ 126-149, 182-189, 226-244).

TQ Delta also cites *Radware* for the proposition, "If the infringer . . . sells a computer preloaded with infringing software code, the computer is 'configured,' or 'operable,' to perform

the claims and may be infringing under *Finjan* and *Fantasy Sports.*" *Radware, Inc. v. F5 Networks, Inc.*, 147 F.Supp.3d 974, 1004 (N.D. Cal. 2015). But the case is inapposite to support TQ Delta's contentions. In *Radware*, the court found that claim language directed to a device "operable to" carry out certain functions was "distinguishable from [the claims] at issue in *Finjan*" that described only capability. *Id.* at 1003. The *Radware* court then concluded that the "operable to" claims were not infringed where there was no evidence that the accused functionality was actually executed in the Accused Products. *Id.*

I find that in view of the relevant cases, "operable to" requires something more than "capable of." I will give "operable to" its plain and ordinary meaning, which is narrower than "capable of." Here the apparatus is not "operable to" because the default settings make it inoperable to execute the accused functionality, and the apparatus is not reasonably able to be set up in a manner that would allow a user to enable these actions.

Even if "operable to" and "capable of" were construed to mean the same thing, the Accused Products would not infringe because they must be re-configured to enable the functionality at issue. As I have previously noted, "when the claim language clearly specifies a particular configuration," proving an accused product is "reasonably capable of being put into the claimed configuration is insufficient for a finding of infringement." *Sprint Commc'ns Co. v. Comcast IP Holdings, LLC.*, 2015 WL 4720576, at *8 (D. Del. Aug. 7, 2015), *aff'd* 675 F. App'x 974 (Fed. Cir. 2017). In *Sprint*, proof of connections "operational to provide interconnectivity" required proof of actual operation or configuration. *Id.*; *see also Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1330 (Fed. Cir. 2001) ("Under the precedent of this circuit, however, that a device is capable of being modified to operate in an infringing manner is not sufficient, by itself, to support a finding of infringement.").

## B. Infringement

There is no genuine dispute of material fact between the parties as to how the accused devices operate. The Accused Products each contain at least one chipset that executes software that controls the functionality of the Accused Products. (D.I. 725 at 2; D.I. 738 at 1-2). The parties do not dispute that the chipsets in the Accused Products contain code that, when executed, can operate in accordance with the VDSL2 and G.inp standards. (D.I. 725 at 2; D.I. 765 at 6). The parties also do not dispute that a user must affirmatively enable the allegedly infringing functionality for the Accused Products to operate in accordance with the VDSL2 and G.inp standards. (D.I. 725 at 3; D.I. 765 at 8).

TQ Delta asserts that ROC mode can be enabled and configured through a non-public Broadcom CLI or Simple Network Management Protocol (SNMP) interface. (D.I. 725 at 1, 16). ADTRAN has established, however, that the Accused Products as sold are not reasonably capable of enabling the ROC or configuring a non-zero offset for the target SNR margin for the ROC such that they would meet all claim limitations. (D.I. 765 at 9; D.I. 734, Ex. 17 at ¶¶ 154-155). In the Accused Products, (1) the ROC is default disabled by the source code, (2) the default value of the offset for the target SNR margin for the ROC is set to a value of zero by the source code, and (3) a user of the Accused Products does not have the option of changing either of those settings. (D.I. 765 at 9-10; citing D.I. 740, Gusler Tr. 134:2-135:1, 136:4-15, 136:22-137:3; Wesel Rpt. ¶¶ 126-179, 182-189, 226-244; *see also* D.I. 734, Ex. 17 at ¶ 178). The document on which TQ Delta's expert Dr. Brody relies for evidence of the commands accessible through the Broadcom CLI states that it is "the confidential trade secret and proprietary information of Broadcom Corporation," and that it cannot be "reproduced, used, sold or transferred to any third party without the prior written consent of Broadcom Corporation." (D.I. 765 at 11-12; citing D.I.

740, Ex. 6 (Brody Reply Rpt.) at ¶ 69 (citing ADTRAN_00081087); Brody Vol. I Tr. 229:4-14). There is no evidence before me that the Broadcom CLI is accessible to ADTRAN's customers who purchase the Accused Products.

TQ Delta asserts that the products infringe because an ADTRAN design engineer or technical support personnel could use a non-public interface and trade secret information to reprogram the Broadcom chip in the Accused Products to turn on the allegedly infringing functionality. (D.I. 790 at 6-7; citing Brody Vol. I Tr. 17:06). This assertion is based on ADTRAN's engineer, Mr. Gusler, having accessed the CLI to retrieve and provide a printout of the default settings in an Accused Product, and TQ Delta's characterization of the CLI commands as being analogous to the Broadcom Host Management Interface ("HMI") commands. (*Id.* at 7; citing D.I. 735, Ex. 17 at ¶¶ 134-137, 143-154, 266, 268). Dr. Brody had previously demonstrated that the HMI commands could be used to turn on single latency with ROC mode and set a non-zero SNR margin offset. (D.I. 790 at 7). TQ Delta then states that this evidence (1) proved the CLI exists, (2) that the CLI is accessible to ADTRAN's technical support, and (3) that the infringing functionality can be turned on. (*Id.*). Taking each of these propositions as true, along with the characterization that the CLI and HMI commands are sufficiently analogous, there is still no evidence that an ADTRAN engineer ever actually accessed the interface and turned on the infringing functionality. Even if, as TQ Delta contends, "no reprogramming or modification is needed for the BCM65300 chipset to provide the infringing functionality," the functionality still needs to be enabled by someone. There is no evidence that any ADTRAN engineer ever did this, or would have reason to do this, except for purposes relating to this litigation.

There is also no evidence demonstrating that ROC can be enabled and configured through an SNMP interface in the Accused Product. (D.I. 765 at 12; citing D.I. 740, Ex. 3 (Brody Vol. I Tr.) 239:21-24, 248:1-18.) TQ Delta's expert Dr. Brody indicates that the Accused Products can be managed using an SNMP interface but does not demonstrate what specific parameters can be configured through that interface. (D.I. 765 at 12; citing Brody Reply Rpt. ¶¶ 77-78, 93-94; Brody Vol. I Tr. 16:47-48, 17:03-04). Dr. Brody's testimony demonstrates that an attempt by Dr. Cooklev to try to configure a representative Accused Product to meet the asserted claim limitations through SNMP was thwarted by an administrator prompt requesting a password. (Brody Vol. I Tr. 17:05-07).

TQ Delta contends that the Accused Products are capable of operation in G.inp mode and that such capability infringes claim 5, specifically the limitation "wherein the first value for the increase in noise is different than the second value for the increase in noise." (D.I. 725 at 19-20). The parties do not dispute that in the Accused Products the ROC is not enabled and, thus, SNRMOFFSET-ROC is set to zero. (*Id.* at 20; D.I. 765 at 14). TQ Delta's expert, however has demonstrated that even though the SNRMOFFSET-ROC is set to zero, the resulting SNR margin can be higher, or "different" than the first SNR margin, thereby meeting each limitation of claim 5. (D.I. 725 at 20; citing Brody Reply Rpt. at ¶ 104). ADTRAN responds that because the SNR margin of the claims is a "configurable parameter," and because this parameter is one that is "assigned," "the SNR margin of the claims is the *target SNR margin.*" (D.I. 738 at 13-14). TQ Delta relies on the theory of its expert to show that a third, higher target margin could be assigned to the overhead channel. (*Id.* at 17; citing Brody Vol. I Tr. 193:18-22; Brody Vol. II Tr. 267:22-268:8, 275:12-19). It has no evidence, however, that an assignment of a third, higher margin is actually used. (D.I. 738 at 16-17; citing Brody Vol. Tr. 201:4-8).

Here, it appears that the Accused Products, as sold, do not have a multicarrier transceiver that is operable "to modulate a first plurality of bits onto a first plurality of carriers using a first Signal to Noise Ratio (SNR) margin and to modulate a second plurality of bits onto a second plurality of carriers using a second SNR margin, wherein the first plurality of carriers is different than the second plurality of carriers." The transceiver will only operate in the allegedly infringing manner if a user enables the G.inp functionality. There is no evidence that ADTRAN has enabled this functionality and no evidence that an end user has this capability. There is no evidence that ADTRAN sells any type of tool or component that would allow an end user to bypass ADTRAN's interface, enter the Broadcom CLI and reprogram the chipset to enable and configure the allegedly infringing functionality.[2] Thus, as a matter of law, the Accused Products do not directly infringe the asserted claims.

## IV. CONCLUSION

For the foregoing reasons, I will grant ADTRAN's motion for summary judgment of noninfringement and deny TQ Delta's motion for summary judgment of infringement. Accordingly, ADTRAN's motion to strike portions of TQ Delta's reply and supplemental expert reports is dismissed as moot.

An accompanying order will be entered.

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[2] Damages have been bifurcated in this case, but I certainly wonder what amount of damages would be appropriate for infringement based on an inaccessible and unused "capability."