IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA LLC,

          Plaintiff,

          v.

ADTRAN, INC.,

          Defendant.

Civil Action No. 14-954-RGA

MEMORANDUM OPINION

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/s/ Richard G. Andrews
ANDREWS, U.S. DISTRICT JUDGE:

Before me are five motions submitted by Plaintiff TQ Delta and Defendant Adtran. This memorandum opinion will address Plaintiff's Motion for Summary Judgment of Infringement (D.I. 1089) and Defendant's Motion for Summary Judgment of Noninfringement (D.I. 1096). The matters have been fully briefed. (D.I. 1091, 1097, 1126, 1130, 1145, 1148). I heard oral argument on November 13, 2020. (D.I. 1238).

I.   BACKGROUND

Plaintiff TQ Delta filed this lawsuit against Defendant Adtran, Inc. on July 7, 2014, asserting infringement of numerous U.S. Patents (D.I. 1). I divided the case into separate trials by patent "Family." (D.I. 369). The Motions before me involve the Family 6 patents: U.S. Patent Nos. 8,462,835 ("the '835 patent") and 8,594,162 ("the '162 patent") (collectively, "the Asserted Patents"). Plaintiff moves for summary judgment of infringement with respect to claims 8 and 10 of the '835 patent and claims 8 and 9 of the '162 patent (collectively, "the Asserted Claims"). (D.I. 1089). Defendant cross-moves for summary judgment of noninfringement with respect to the same claims of the Asserted Patents. (D.I. 1096).

The '835 and '162 patents claim apparatuses in the field of data communications that counter the effects of impulse noise, which was a known issue for DSL ("Digital Subscriber Line") technology prior to invention.

II.   STATEMENT OF UNDISPUTED FACTS

The Accused Products (said to be about fourteen Adtran products) contain the Broadcom BCM65300 DSL chip. (D.I. 1091 at 1 n.1, D.I. 1126 at 4). The Broadcom chip supports "dynamic change of interleaver depth functionality as described in the VDSL2"—this is referred to as Dynamic D functionality. (D.I. 1091 at 2, D.I. 1126 at 3). Both parties agree that the

Dynamic D functionality, or source code, in the Accused Products infringes the Asserted Patents. (D.I. 1091 at 1, D.I. 1238 at 6:18–23). By default, Dynamic D functionality is disabled when the Accused Products are sold. (D.I. 1238 at 7:10–16). Turning on Dynamic D in the Accused Products requires two things: (1) access to a particular level of the command line interface ("CLI")—protected by a challenge-response mechanism—that can be used to technically manipulate the Accused Products (*id.* at 13:18–14:4, 19:20–21:3), and (2) the specific command that, when entered at the appropriate level of the CLI, turns on Dynamic D (*id.* at 13:7–11, 14:10–15:3). No evidence has been submitted that Dynamic D has been turned on by any purchaser of the Accused Products. (*Id.* at 12:15–21).

III. 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)). The burden on the moving party may be discharged by pointing out to the district court that there is an absence of evidence supporting the non-moving party's case. *Celotex*, 477 U.S. at 323.

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).

B. Infringement

Infringement of a patent occurs when a person "without authority makes, uses, offers to sell, or sells any patented invention, within the United States . . . during the term of the patent[.]" 35 U.S.C. § 271(a). "Literal infringement of a claim exists when every limitation recited in the claim is found in the accused device." *Kahn v. Gen. Motors Corp.*, 135 F.3d 1472, 1477 (Fed. Cir. 1998).

IV. DISCUSSION

Both parties agree that the Accused Products contain source code for the Dynamic D functionality. (D.I. 1091 at 2, D.I. 1126 at 3). They also agree that the Dynamic D functionality reads onto and infringes the Asserted Claims. (D.I. 1091 at 1, D.I. 1238 at 6:18–23). The parties dispute, however, whether the Accused Products infringe. The basis for the dispute is that Dynamic D is disabled by default when the Accused Products are sold (D.I. 1238 at 7:10–16), and Plaintiff has no evidence that any user has ever successfully enabled the infringing functionality (*id.* at 12:15–21).

Plaintiff argues that the Accused Products infringe when they are sold with Dynamic D functionality and that it is therefore irrelevant whether Dynamic D has actually been used by a purchaser of any of the Accused Products. (D.I. 1148 at 1). Indeed, Plaintiff asserts that it is only

"required to show that the Accused Products include every element of the Asserted Claims as sold." (*Id.*). Plaintiff claims it meets this burden because its experts noted that Dynamic D can be turned on in the firmware on the Broadcom chips in the Accused Products, and because the Asserted Claims read onto Dynamic D functionality. (*Id.* at 2). It is irrelevant, Plaintiff argues, whether a customer "has ever enabled Dynamic D" or even "accessed the CLI" level at which Dynamic D can be enabled because infringement of an apparatus claim "does not require actual use" of the Accused Products. (*Id.* at 9–10) (quoting *Texas Advanced Optoelectronic Sols., Inc. v. Renesas Elecs. Am., Inc.*, 895 F.3d 1304, 1327 (Fed. Cir. 2018)).

Defendant acknowledges that even if not used in "actual operation, an accused device need only be capable of operating in the described mode." (D.I. 1097 at 11) (quoting *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1204 (Fed. Cir. 2010)). But Defendant asserts that the activation of Dynamic D constitutes a "modification" and points to case law finding that "a device [that] is capable of being modified to operate in an infringing manner is not sufficient, by itself, to support a finding of infringement." (*Id.*) (quoting *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1330 (Fed. Cir. 2001)). Activation of Dynamic D constitutes a "modification," Defendant argues, because: (1) Dynamic D is disabled by default, (2) access to the Broadcom CLI is protected by a challenge-response mechanism that prevents uncredentialed users from enabling Dynamic D, and (3) there is no evidence that "a customer would know that the non-public Broadcom CLI exists, would know how to access it, or would know what commands to execute to enable Dynamic D." (*Id.* at 11–13).

Although Plaintiff asserts that a customer would in fact be able to access the non-public Broadcom CLI or to find the enabling command for Dynamic D (D.I. 1238 at 15:16–16:17, 24:18–25:8), to determine whether summary judgment of infringement is appropriate, I consider

the evidence in the light most favorable to Defendant. For the ensuing analysis, therefore, I assume that the Broadcom CLI and Dynamic D-enabling command are not publicly accessible.

When "determining whether a product claim is infringed . . . an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations, even though it may also be capable of non-infringing modes of operation." *Hilgraeve Corp. v. Symantec Corp.*, 265 F.3d 1336, 1343 (Fed. Cir. 2001). If an invention must be modified—beyond recited alteration or assembly before operation—for it to be infringing, however, that the invention is capable of infringing after modification is by itself insufficient to support a finding of infringement. *High Tech Med. Instrumentation v. New Image Indus., Inc.*, 49 F.3d 1551, 1556 (Fed. Cir. 1995). The dispositive question, therefore, is whether enabling Dynamic D in the Accused Products constitutes a modification.

The parties also dispute whether the claim language requires that a product be configured at the outset with the infringing functionality (i.e. with Dynamic D enabled) to satisfy limitations that the transceiver and transmitter in the Asserted Patents are, respectively, "configurable to" or "configured to" perform a certain function. (D.I. 1298 at 5–6). The issue is one of claim construction.

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 v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2015) (en banc) (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).

Claim 8 of the '835 patent recites:

An apparatus configurable to adapt forward error correction and interleaver parameter (FIP) settings during steady-state communication or initialization comprising:
    a transceiver, including a processor, *configurable to*:
        transmit a signal using a first FIP setting,
        transmit a flag signal, and
        switch to using for transmission, a second FIP setting following transmission of the flag signal,
    wherein:
        the first FIP setting comprises at least one FIP value,
        the second FIP setting comprises at least one second FIP value, different than the first FIP value, and
        the switching occurs on a pre-defined forward error correction codeword boundary following the flag signal.

(D.I. 1-20, Ex. 20 at claim 8).

Claim 8 of the '162 patent recites:

A device comprising:
    an interleaver configured to interleave a plurality of bits; and
    a transmitter portion coupled to the interleaver and *configured to*:
        transmit using a first interleaver parameter value;
        transmit a flag signal; and
        change to transmitting using a second interleaver parameter value that is different than the first interleaver parameter value,
    wherein the second interleaver parameter value is used for transmission on a pre-defined forward error correction codeword boundary following transmission of the flag signal.

(D.I. 1-21, Ex. 21 at claim 8).

Plaintiff's proposed construction for both "configured to" and "configurable to"*:*
i.   "includes the necessary hardware and software for performing the functionality recited in the claim without the need to rebuild, rewrite or recompile the code for, or redesign any of that hardware or software." (D.I. 1298 at 6).

Defendant's proposed construction:
     i.   "configured to": "configured so that the device can perform the claimed functions without further configuration by the user." (*Id.*).
    ii.   "configurable to": "capable of being configured through an interface designed to provide an end user with an option for enabling the claimed functions." (*Id.*).

Court's construction for both "configured to" and "configurable to"*:*
     i.   "includes the necessary hardware and software for performing the functionality recited in the claim without the need to rebuild, rewrite or recompile the code for, or redesign any of that hardware or software."

Plaintiff argues that because "configured to" and "configurable to" are not technical terms, they should be construed based on their plain meaning. (D.I. 1298 at 8–9). According to Plaintiff, the claim terms do not require "any particular default mode of operation" because "configured to" and "configurable to" require only that the feature be present in the invention, not that the feature be activated at the time of sale. (*Id.* at 9–10). Plaintiff further argues that its construction here is consistent with my interpretation of "configurable to" in the Family 2 case: "wherein 'configurable to' precludes rebuilding, recoding, or redesigning any of the components. . . . ." (*Id.* at 11) (citing D.I. 335 at 6). Plaintiff also asserts that Defendant's construction, by limiting the invention to a fixed initial configuration that can perform all claimed functionalities, improperly applies limitations that are not recited by the claim language. (*Id.* at 18). Because nothing in the claim language, specification, or prosecution history supports such a limitation, Plaintiff argues that Defendant's construction amounts to improper limitation of claim scope. (*Id.*).

Defendant contends neither "configurable to" nor "configured to" should be given a narrower meaning—or at least no broader meaning—than "capable of." (D.I. 1298 at 22). The claim terms, Defendant argues, should be interpreted based on caselaw that, for software claims, defines reasonable capability as requiring: (1) the code be "written in such a way as to enable a

8

user of that software to utilize the function," and (2) the code must be capable of being used to perform the claimed functionality without impermissible alterations, such as modification to the code. *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1205 (Fed. Cir. 2010) (quoting *Fantasy Sports Props. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1118 (Fed. Cir. 2002)).

Although I agree with Defendant that caselaw on reasonable capability is helpful in determining the meaning of the "configured to/configurable to" as claim language relating to capability, I think the same caselaw supports Plaintiff's construction. Functions of the claimed invention are written in the underlying source code. Turning certain functions on or off (e.g. enabling or disabling Dynamic D) does not require modification to the code. Even if Dynamic D is initially disabled, therefore, all parts of the source code needed to "enable a user of that software to utilize" Dynamic D are present.

I also agree with Plaintiff that the additional limitations presented by Defendant—namely that the claimed invention should be limited to its initial configuration—is not supported by the necessary lexicography or disclaimer anywhere else in the specification and relevant prosecution history. Although Defendant's point that "configured to/configurable to" should be interpreted more narrowly than "capable of" is noted, I think that the inclusion of "without the need to rebuild, rewrite or recompile the code for, or redesign any of that hardware or software" adequately limits the scope of the recited functionality. I therefore adopt Plaintiff's construction.

With regard to infringement, caselaw indicates that modification in the context of software claims typically means altering the source code.

In *Finjan*, the software claims at issue "describe[d] capabilities without requiring that any software components be 'active' or 'enabled.'" 626 F.3d at 1204–05. "The system claims recite software components with specific purposes," such as "a logical engine *for preventing*

execution" or "a communications engine *for obtaining*." *Id.* (internal quotations omitted). The

relevant claims at issue cover capability, and the claim language "does not require that the

program code be "active," only that it be written "for causing" a server . . . to perform certain

steps." *Id.* at 1205. Moreover, the "software for performing the claimed functions existed in the

products when sold." *Id.* Though the users of the claimed invention needed to "'activate the

functions programmed' by purchasing keys," the code underlying the function was present in the

product at sale, and there was no "evidence that customers needed to modify the underlying code

to unlock any software modules" that gave rise to the infringing functionality. *Id.*

Similarly, in *Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, the Federal Circuit

held that in order to infringe a claim, the source code underlying the infringing functionality

"must be written in such a way as to" allow the user "to utilize the function" "without having to

modify the code." 287 F.3d 1108, 1118 (Fed. Cir. 2002). When a user activates "the functions

programmed into a piece of software . . ., the user is only activating means that are *already*

present in the underlying software." *Id.* Enabling or activating code "already present in the

underlying software" does not constitute modification if it does not require alteration of the code

itself. *See id.* If the source code gives the user means to utilize the infringing functionality, the

code infringes "regardless whether that means is activated or utilized in any way." *Id.*

Here, it is undisputed that enabling Dynamic D activates functionality that is already

present in the source code—that is necessarily the basis for the parties' agreement that Dynamic

D, when enabled in the Accused Products, reads onto the asserted claims. (D.I. 1238 at 5:1–7,

18–23). The process of activation also indicates that no modification of source code is necessary

to enable Dynamic D. When a command is issued in the CLI, the command acts as a switch to

turn 'on' or 'off' different parts of the underlying source code in the same way that pressing

buttons or making selections in a graphical user interface would modulate functionalities provided by the source code. (*Id.* at 11:19–12:3, 13:20–14:4, 15:16–16:3, 21:17–24:8). In other words, the CLI *runs* the code; it is not used to *write* or *edit* the code. The command used to enable Dynamic D in the Accused Products is issued through the CLI and does not require that the source code itself be edited for the command to be used.

Like in *Finjan*, the Asserted Claims also recite capability in that they are "configured to" or "configurable to" perform certain functions. The claim language in the Asserted Patents recites a transmitter "configured to" perform specific functions as well as a transceiver "configurable to" perform specific functions, similar to the "logical engine for preventing execution" in *Finjan.* As in that case, nothing in the claim language here indicates that the functions of the transmitter or transceiver provided in the source code need to be "active" in order to meet the claim limitation because the invention need only be capable of performing the recited functionality.

To be sure, the Federal Circuit did find in *Telemac Cellular Corp. v. Topp Telecom, Inc.* that the telephone product at issue was non-infringing even if its source code—without modification—was capable of the infringing functionality. 247 F.3d 1316, 1330 (Fed. Cir. 2001). *Telemac* is distinguishable, however, because there the accused product could not exercise the infringing functionality. *Id.* at 1321. The accused product in *Telemac* was "preprogrammed to recognize and block placement of international calls." *Id.* The invention at issue was a "complex billing algorithm" for telephone calls that included international calls and rates in its calculations. *Id.* As manufactured and sold, the accused product, however, was incapable of being used to place international calls. *Id.* Nor was there any way to enable the ability to place international calls in the phones; the phone hardware simply was incapable of performing the

function. *See id.* Because the accused product was incapable of placing international calls, the Federal Circuit found that the international rates, and related calculations, were not included in the billing algorithm of the accused product and that it therefore was not infringing. *Id.*

Considering the evidence in the light most favorable to Defendant, the Broadcom CLI and Dynamic D-enabling command are merely publicly inaccessible—not non-existent. If someone were to have the right command and access the correct level of the CLI, Defendant does not dispute that the user could activate Dynamic D. Because there are no hardware or firmware features that prevent the Dynamic D source code from exercising infringing functionality when activated, *Telemac* is inapposite.

There is no genuine dispute that the source code of the Accused Products encodes Dynamic D functionality. Nor is it disputed that Dynamic D, when activated, infringes the asserted claims. Activation of Dynamic D does not require modification of the source code, nor do other features of the apparatus pose structural barriers to carrying out the infringing functionality. I therefore find that the Accused Products infringe the asserted claims.

V. CONCLUSION

For these reasons, I will grant Plaintiff's motion for summary judgment of infringement and deny Defendant's cross-motion for summary judgment of noninfringement. An Order consistent with this opinion will be entered.