

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA, LLC,

Plaintiff,

v.

ADTRAN, INC.,

Defendant.

Civil Action No. 14-cv-00954-RGA

ADTRAN, INC.,

Plaintiff,

v.

TQ DELTA, LLC,

Defendant.

Civil Action No. 15-cv-00121-RGA

MEMORANDUM OPINION

Rosemary J. Piergiovanni, FARNAN LLP, Wilmington, DE; Peter J. McAndrews (argued) and Michael Tomsa (argued), MCANDREWS, HELD & MALLOY, Chicago, IL.

Attorneys for Plaintiff.

Kenneth L. Dorsney, MORRIS JAMES LLP, Wilmington, DE; Jeffrey D. Dyess and Benn C. Wilson (argued), BRADLEY ARANT BOULT CUMMINGS, Birmingham, AL.

Attorneys for Defendant Adtran Inc.

April 27, 2018


ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court is the issue of claim construction of multiple terms in U.S. Patent No. 8,625,660 (“the ’660 patent”). The Court has considered the Parties’ Joint Claim Construction Brief. (Civ. Act. No. 14-00954-RGA, D.I. 318; Civ. Act. No. 15-00121-RGA; D.I. 321).¹ The Court heard oral argument on February 27, 2018. (D.I. 370). Prior to oral argument, the parties agreed on a construction for the term “carriers.” (D.I. 348).

I. BACKGROUND

The patent-in-suit represents “Family 10” of the patents that Plaintiff has asserted against Defendant Adtran. (D.I. 318, p. 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 both methods and systems for modulating bits onto sets of carriers using different signal to noise ratio margins.

II. LEGAL STANDARD

“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) (citation 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, 979-80 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). Of these sources,

¹ Unless otherwise specifically noted, all references to the docket refer to Civil Action No. 14-954-RGA.

“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.

“[T]he words of a claim are generally given their ordinary and customary meaning. . . . [This 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. “[T]he ordinary meaning of a claim term is its meaning to [an] ordinary artisan after reading the entire patent.” *Id.* at 1321. “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. *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. 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 omitted).

III. CONSTRUCTION OF DISPUTED TERMS

Plaintiff asserts claims 5 and 14 of the '660 patent. (D.I. 318, pp. 11-12).

Claim 5 of the '660 patent reads 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 subcarriers, wherein the second SNR margin specifies a second value for an increase in noise associated with the second plurality of subcarriers*, and wherein the first value for the increase in noise is different than the second value for the increase in noise.

('660 patent, claim 5) (disputed terms italicized).

Claim 14 of the '660 patent reads as follows:

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 subcarriers, wherein the second SNR margin specifies a second value for an increase in noise associated with the second plurality of subcarriers*, and wherein the first value for the increase in noise is different than the second value for the increase in noise.

('660 patent, claim 14) (disputed terms italicized).

1. “transceiver” (all asserted claims)

- a. *Plaintiff’s proposed construction*: “communications device capable of transmitting and receiving data wherein the transmitter portion and receiver portion share at least some common circuitry”
- b. *Defendant’s proposed construction*: “communications device capable of transmitting and receiving data”
- c. *Court’s construction*: “communications device capable of transmitting and receiving data wherein the transmitter portion and receiver portion share at least some common circuitry”

During oral argument, Adtran expressed its concern with Plaintiff’s proposed construction as being the possibility that for “any given reference [where] a transceiver is a black box,” Plaintiff might “try to be very, say, restrictive about this sharing circuitry,” for example, saying, “that’s not a transceiver because you can’t point to anything about the guts of the transceiver.” (D.I. 370 at 11:21-12:11). So long as Plaintiff does not intend to raise such arguments, Adtran indicated that it does not “have any particular concern with shared circuitry” in the construction for “transceiver.” (*Id.* at 12: 5-11). Adtran subsequently agreed that given the Court’s logic in arriving at its construction for “transceiver” for the remaining patent families (*see* D.I. 325, pp. 4-5), the Court’s construction is “going to work just as well [as Adtran’s proposed construction] when you have a black box transceiver in a prior art reference.” (D.I. 370 at 12:5-23).

Therefore, I construe “transceiver” to mean “communications device capable of transmitting and receiving data wherein the transmitter portion and receiver portion share at least some common circuitry.”

2. “Signal to Noise Ratio (SNR) margin” (all asserted claims)

- a. *Plaintiff’s proposed construction:* “a parameter used to determine the number of bits allocated to each of a plurality of carriers, where the value of the parameter specifies an extra SNR requirement per carrier in addition to that required to maintain a specified bit error rate (BER) for the communication link, to allow for an increase in noise associated with the plurality of carriers”
- b. *Defendant’s proposed construction:* “extra SNR assigned to a carrier in addition to the SNR required to maintain the specified bit error rate requirement of the communications link at a specified bit allocation”
- c. *Court’s construction:* “a parameter used in determining the number of bits allocated to each of a plurality of carriers, where the value of the parameter specifies an extra SNR requirement assigned per carrier in addition to the SNR required to maintain a specified bit error rate (BER) for the communication link at a specified bit allocation”

The parties have agreed on the following construction for this term: “a parameter used in determining the number of bits allocated to each of a plurality of carriers, where the value of the parameter specifies an extra SNR requirement assigned per carrier in addition to the SNR required to maintain a specified bit error rate (BER) for the communication link at a specified bit allocation.” (D.I. 352). I will adopt the parties’ agreed-upon construction.

3. “wherein the [first/second] SNR margin specifies a [first/second] value for an increase in noise associated with the [first/second] plurality of carriers” (all asserted claims)

- a. *Plaintiff’s proposed construction:* “wherein the [first/second] SNR margin specifies a value that allows for an increase in noise associated with the [first/second] plurality of carriers”
- b. *Defendant’s proposed construction:* “wherein the [first/second] SNR margin is assigned based on the [first/second] value of the expected increase in noise based on an impairment associated with the [first/second] plurality of carriers”
- c. *Court’s construction:* plain and ordinary meaning

The parties dispute whether the construction of this term should include the basis on which the SNR margin is specified, and whether the SNR margin must be assigned to a carrier. Plaintiff asserts that Adtran's proposed construction improperly seeks to import limitations from a preferred embodiment. (D.I. 318, pp. 40-41). Adtran contends that Plaintiff's proposed construction is non-limiting and fails to clarify the meaning of the disputed term. (*Id.* p. 42).

According to Adtran, a proper construction for this term includes an "assignment" limitation because the specification mentions "assigning" margin to carriers, and does so at times in the context of discussing "the present invention." (*Id.* pp. 42-43 (citing '660 patent at 5:17-21 ("In general, the systems and methods of this invention can be adapted to set a margin for any impairment that varies over time"), 9:19-21 ("It is, therefore, apparent that there has been provided in accordance with the present invention, systems and methods for assigning margins to carriers."))). The language of the asserted claims, however, does not require assignment. (*See* '660 patent at claims 5, 14). Although Adtran acknowledges that "[t]he specification is replete with references to assigning, setting, or allocating margins," Adtran does not offer a compelling reason to choose "assigning" over "setting" or "allocating." (*See* D.I. 318, p. 43). Against this backdrop, the permissive language used in Adtran's citations to the specification suggest that the claims are not limited to assignment. I thus decline to import an "assignment" limitation into the claim language.

Adtran also argues that this term should be limited to expected noise increases based on impairments on the carriers. (*Id.*). As support, Adtran offers the specification's recitation that, "The systems and methods of this invention allow the margin in a discrete multitone modulation system to vary depending on a type of impairment." ('660 patent at 3:21-23). That the invention "allow[s]" variation in the margin based on different impairments does not necessarily limit the

invention to that single basis for margin variation. *See Phillips*, 415 F.3d at 1323. As additional evidence for incorporating these limitations, Adtran offers examples discussed in the specification. (D.I. 318, pp. 45-46). I conclude that Adtran's reliance on these preferred embodiments does not provide adequate basis to limit the broad scope of the claims asserted here.

Adtran further submits that limiting the claim scope to expected noise increases based on impairments is consistent with the purpose of the invention "to protect against expected changes in signal to noise ratios caused by an impairment associated with a carrier or plurality of carriers when assigning an appropriate margin to that carrier or carriers." (*Id.* p. 44). Even assuming Adtran has properly articulated the purpose of the invention, the purpose of the invention does not justify importing these limitations, because the asserted claims are apparatus claims. *See Roberts v. Ryer*, 91 U.S. 150, 157 (1875) ("The inventor of a machine is entitled to the benefit of all the uses to which it can be put, no matter whether he had conceived the idea of the use or not."); *Paragon Solutions, LLC v. Timex Corp.*, 566 F.3d 1075, 1091 (Fed. Cir. 2009) ("Absent an express limitation to the contrary, *any* use of a device that meets all of the limitations of an apparatus claim written in structural terms infringes that apparatus claim.") (emphasis in original); *Catalina Marketing Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002) ("[A] patent grants the right to exclude others from making, using, selling, offering [for] sale, or importing the claimed apparatus or composition for any use of that apparatus or composition, whether or not the patentee envisioned such use.>").

Finally, Adtran contends that Plaintiff's proposed construction strips this term of any meaning and encompasses a claim scope that was rejected during prosecution. (D.I. 318, pp. 59-60). During prosecution, the examiner rejected a claim reciting "a multicarrier modulation system comprising: a plurality of subchannels; and a plurality of margins." (D.I. 319-1 at 337). According

to Adtran, Plaintiff's proposed construction for this term sweeps as broadly as the claim language the Examiner rejected during prosecution of the '660 patent. I disagree. Though broad, Plaintiff's proposed construction is narrower than the language the Examiner rejected. Whereas the claim language rejected by the examiner recites no relationship between the claimed subchannels and margins, the language in Plaintiff's proposed construction recites a relationship between the margins and the carriers. Additionally, Adtran's argument ignores that in the context of the asserted claims, this term is further limited by language that requires the first and second values for an increase in noise specified by the first and second SNR margins to be different from one another. ('660 patent at claims 5, 14). When read in the context of the asserted claims, therefore, Plaintiff's proposed construction does not recapture the scope that the Examiner rejected during prosecution of the '660 patent. I am thus not convinced that the broad scope of Plaintiff's proposed construction provides a basis to import additional limitations into the claim language.

Therefore, I decline to import any limitations of "assignment," "impairment," or "expected" noise into this term, and decline to adopt Adtran's proposed construction.

Aside from the addition of "that allows," Plaintiff's proposed construction amounts to a plain meaning construction for this term. In light of the parties' agreed-upon construction for "SNR margin," I conclude that "wherein the [first/second] SNR margin specifies a [first/second] value for an increase in noise associated with the [first/second] plurality of carriers" requires no construction. *See Phillips*, 415 F.3d at 1314 ("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."); *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("[Claim construction] is not an obligatory exercise in

redundancy.”). Additionally, though Plaintiff’s addition of “that allows” may be technically correct, it may also broaden the claim scope. I thus decline to adopt Plaintiff’s proposed construction. Accordingly, I will construe “wherein the [first/second] SNR margin specifies a [first/second] value for an increase in noise associated with the [first/second] plurality of carriers” to have its plain and ordinary meaning.

4. “value for an increase in noise” (all asserted claims)

- a. *Plaintiff’s proposed construction:* This term should not be construed separately from its context in the fourth disputed term.

If a separate construction is needed: “value that allows for an increase in noise associated with the [first/second] plurality of carriers”

- b. *Defendant’s proposed construction:* “value of the expected increase in noise based on an impairment in the [first/second] plurality of carriers”
- c. *Court’s construction:* no separate construction required

Plaintiff argues that this term requires no construction separate from its construction in the context of the third disputed claim term. (D.I. 318, pp. 60-61). Adtran counters that since this term appears outside of the larger phrase of the third disputed term, separate construction is necessary. (*Id.* pp. 61-62 (citing asserted claims’ recitation that “the first value for the increase in noise is different than the second value for the increase in noise”)). Plaintiff responds that the additional phrase Adtran cites “merely refers back to the first instance” of the larger phrase in the third disputed term. (*Id.* p. 62). According to Plaintiff, the smaller phrase’s use of the word “the” to modify “value for an increase in noise” is a reference to the broader phrase, which recites “a first value for an increase in noise” and “a second value for an increase in noise.” (*Id.*). In other words, Plaintiff maintains that since this term finds its antecedent basis in the broader phrase of the third disputed term, this shorter term does not require separate construction.

I agree with Plaintiff and conclude that the first use of this term within a larger phrase in the claims provides adequate context for the subsequent uses of this term. Therefore, this term does not require separate construction.

IV. CONCLUSION

Within five days the parties shall submit a proposed order consistent with this Memorandum Opinion suitable for submission to the jury.