

**THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

OYSTER OPTICS, LLC,	§	
	§	
v.	§	CASE NO. 2:16-CV-1302-JRG
	§	
CORIAN America INC., et al.,	§	
	§	

MEMORANDUM OPINION AND ORDER

Before the Court is Defendants Coriant North America, LLC, Coriant Operations, Inc., Coriant (USA) Inc., Infinera Corporation, Alcatel-Lucent USA Inc., Fujitsu Network Communications, Inc., Cisco Systems, Inc., Huawei Technologies Co., Ltd., and Huawei Technologies USA Inc. (collectively, “Defendants”) Motion for Partial Summary Judgment of Noninfringement Based on the Absence of “Phase Modulation” (Dkt. No. 262).¹ Also before the Court are Plaintiff Oyster Optics, LLC’s (“Plaintiff’s” or “Oyster’s”) Opposition (Dkt. No. 354),² Defendants’ reply (Dkt. No. 458),³ and Plaintiffs’ sur-reply (Dkt. No. 496). After considering the briefing and evidence, the Court finds that Defendants’ Motion for Summary Judgment (Dkt. No. 262) should be **DENIED** and that the Court’s construction of the term “phase modulate” should be **CLARIFIED**.

¹ Additional attachments are filed at Dkt. Nos. 265, 266, 267, 268, 276, 277, and 279.

² Additional attachments are filed at Dkt. Nos. 363, 364, 365, 366, 367, 368, 369, and 370.

³ Additional attachments are filed at Dkt. No. 459.

I. BACKGROUND

Plaintiff has brought suit alleging infringement of United States Patents No. 6,469,816 (“the ’816 Patent”), 6,476,952 (“the ’952 Patent”), 6,594,055 (“the ’055 Patent”), 7,099,592 (“the ’592 Patent”), 7,620,327 (“the ’327 Patent”), 8,374,511 (“the ’511 Patent”), 8,913,898 (“the ’898 Patent”), and 9,363,012 (“the ’012 Patent”) (collectively, “the patents-in-suit”). (See Dkt. No. 157, Exs. 1–8.) Plaintiff submits that the patents-in-suit are “generally directed towards systems and methods for transporting information by modulating light waves transmitted and received across transparent optical fibers.” (Dkt. No. 157, at 2.)

The Court entered a Claim Construction Memorandum and Order on December 5, 2017. (Dkt. No. 190.) Of relevance here, the Court construed the term “phase modulate” to mean “alter the phase of light while keeping the amplitude of the light constant to create an optical signal having a phase that is representative of data.” (*Id.*, at 18; *see id.*, at 10–18.)

II. LEGAL PRINCIPLES

Summary judgment is proper when “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). Under this standard, “the mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no genuine [dispute] of material fact.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247–48, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). The substantive law identifies the material facts, and disputes over facts that are irrelevant or unnecessary will not defeat a motion for summary judgment. *Id.* at 248. A dispute about a material fact is “genuine” when the evidence is “such that a reasonable jury could return a verdict for the nonmoving party.” *Id.* Any evidence must be

viewed in the light most favorable to the nonmovant. *See id.* at 255 (citing *Adickes v. S.H. Kress & Co.*, 398 U.S. 144, 158–59, 90 S.Ct. 1598, 26 L.Ed.2d 142 (1970)).

The moving party has the burden to identify the basis for granting summary judgment and to supply evidence demonstrating the absence of a genuine dispute of material fact. *Celotex v. Catrett*, 477 U.S. 317, 323, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). If the moving party does not have the ultimate burden of persuasion at trial, the party “must either produce evidence negating an essential element of the nonmoving party’s claim or defense or show that the nonmoving party does not have enough evidence of an essential element to carry its ultimate burden of persuasion at trial.” *Nissan Fire & Marine Ins. Co., Ltd. v. Fritz Cos., Inc.*, 210 F.3d 1099, 1102 (9th Cir. 2000).

III. THE PARTIES’ POSITIONS

Defendants argue that there can be no genuine issue of material fact, either literally or under the doctrine of equivalents, as to whether the accused instrumentalities meet the “phase modulate” limitation as construed by the Court. Defendants submit that this limitation appears in the following asserted claims: Claims 1 and 3 of the ’952 Patent; Claims 1, 8, and 11 of the ’055 Patent; and Claims 10, 14, 16, 17, 18, 22, 25, 28, 29, and 33 of the ’327 Patent. (Dkt. No. 262, at 3.) As to the Court’s construction and the specification disclosures cited in the Court’s *Markman* analysis, Defendants have noted as follows: “The asserted patent specifications emphasize that keeping the amplitude constant provides certain benefits. Keeping the amplitude constant, for example, makes it easier to detect any changes in amplitude, which the patents teach can be associated with various problems, such as the presence of an intruder attempting to intercept communications carried by the light.” (*Id.*, at 1.)

Defendants submit that, in the accused instrumentalities, each phase shift performed in the course of phase modulation includes a change in amplitude. (*See id.*, at 1–2 & 4.) Defendants argue that “Oyster’s theory assumes that the Court’s claim construction does not pertain to the ‘transition’ period between symbols,” and Defendants urge the Court to reject Plaintiff’s interpretation. (*Id.*, at 8.)

Finally, Defendants argue that Plaintiff’s assertion of the doctrine of equivalents (“DOE”) lacks sufficient specificity, “Oyster’s experts fail to meaningfully explain how or why the differences are allegedly insubstantial,” and “the patentee expressly disavowed in the specification the very scope that Oyster is now attempting to capture with DOE.” (*Id.*, at 13; *see id.* at 11–13.)

Plaintiff responds that Defendants’ technical documents, as well as the opinions of Defendants’ own experts, support the opinions of Plaintiff’s expert that the accused instrumentalities keep the amplitude of the light constant for purposes of the Court’s construction. (*See* Dkt. No. 354, at 1; *see also id.* at 23–24.)

Plaintiff also submits that, during claim construction proceedings, the parties addressed whether “phase modulation” in the patents-in-suit exclude amplitude *modulation*, not whether “phase modulation” precludes *any* alteration of amplitude at *any* time. (*See id.*, at 1–2; *see also id.* at 10 & 21.) Plaintiff requests that the Court “make clear it only excludes amplitude modulation, not modulation that might ever include any variation in amplitude.” (*Id.*, at 15.) Plaintiff urges that “under the right construction of claim scope, Defendants have no argument that their PSK-systems [(phase-shift-keying systems)] do not ‘phase modulate.’” (*Id.*, at 2.)

Alternatively, Plaintiff argues that “beyond the absence of amplitude modulation, the accused functionality is designed to modulate the phase of light while keeping the amplitude of the light constant as to the creation of each optical signal having a phase representative of the data

...” (*Id.*; *see id.* at 6 & 8 (“the amplitude is constant whenever the optical signal is actually representative of the data”); *see also id.* at 19–21.)

Finally, as to the doctrine of equivalents, Plaintiff responds that the purportedly conclusory expert opinions criticized by Defendants are sufficient by themselves and, moreover, “plainly refer to other testimony in [Plaintiff’s expert’s] report in which he explains, in many pages of additional detail, the transmission, encoding, and optical-data receiving operation in the accused products.” (*Id.*, at 25.)

Defendants reply that “it is beyond dispute that amplitude in the accused systems is continuously changing whenever phase is changing, and this change is not some *de minimis* part of the accused modulation.” (Dkt. No. 458, at 1.) Defendants submit that, in the accused instrumentalities, “[t]he process of modulation involves intentionally changing the amplitude . . . all the way to zero amplitude and then bringing it back up . . .” (*Id.*, at 7.) Defendants argue that “the patents never discuss alternative implementations of phase shift keying that rely on amplitude changes to effect modulation (such as the versions accused in Defendants’ systems).” (*Id.*, at 5.) Further, Defendants assert that “[i]f used in the system of the patents, the energy level detector would detect different values of energy (due to different amplitude values), depending on any particular sequence of data.” (*Id.*, at 8 (citing ’327 Patent at 4:39–47 & ’592 Patent at 2:41–44 & 2:63–3:3).)

As to the doctrine of equivalents, Defendants reply that “there is no analysis or opinion in Oyster’s reports as to the impact of the changing amplitude in Defendants’ optical signals to the ability of Defendants’ products to detect drops in amplitude of a phase modulated signal, as required by every asserted claim of the ’327 Patent.” (Dkt. No. 458, at 10.)

In sur-reply, Plaintiff argues that it “correctly interprets the Court’s construction based on what the Court found was actually disparaged by [the] patentee—amplitude modulation—and consistent with the Defendants’ earlier representation to the Court that a PSK signal whose amplitude varied during transitions was ‘phase modulation.’” (Dkt. No. 496, at 1.) Plaintiff submits, for example, that “the amplitude is constant when the phase of the data symbol changes sufficiently to be representative of the data.” (*Id.*, at 10 (emphasis omitted).) Plaintiff proposes:

To prevent this legal dispute or Defendants’ erroneous interpretation from going to the jury, Oyster respectfully proposes that this Court either: (a) provide a supplemental instruction that makes clear “phase modulate” excludes amplitude modulation but no more; or else (b) provide a revised construction that reflects the Court’s reasoning and leaves no room to [*sic*] further misinformation: “alter the phase of light to create an optical signal having a phase representative of the data, but not an amplitude representative of the data.”

(*Id.*, at 8 n.2.)

IV. ANALYSIS

During claim construction proceedings, the parties submitted the following proposed constructions for the term “phase modulate”:

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction (emphasis added)
“alter the phase of light to create an optical signal having a phase that is representative of data” ⁴	“alter the phase of light <i>while keeping the amplitude of the light constant</i> to create an optical signal having a phase that is representative of data”

(Dkt. No. 157, at 8; Dkt. No. 165, at 10; Dkt. No. 168, Ex. B, at 1–2, 9, 15, 21, 23, 25, 31 & 35.)

Thus, the only difference between the parties’ proposals was Defendants’ proposal of “while

⁴ Plaintiff previously proposed: “No construction necessary. In the alternative, if construed: alter the phase of light to create an optical signal having a phase that is a function of data.” (Dkt. No. 145, at 4.)

keeping the amplitude of the light constant.” The Court adopted Defendants’ proposed construction. (Dkt. No. 190, at 18.)

As discussed above, the parties now dispute whether this construction precludes any change in amplitude during phase modulation or, instead, merely excludes amplitude modulation. An analysis of Defendants’ motion from a perspective of claim construction is therefore necessary in order to resolve the parties’ dispute. *See O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.”). Legal principles regarding claim construction are set forth in the Claim Construction Memorandum and Order. (See Dkt. No. 190, at 4–8.)

As a threshold matter, the parties appear to agree that amplitude modulation is something more than merely altering amplitude. (See Dkt. No. 369, Ex. A, Defs.’ Technology Tutorial, at 18 (“Amplitude modulation (amplitude-shift keying (ASK)) works by modulating the amplitude of the wave depending on the binary electrical data signal.”).)⁵ Also, the parties appear to agree that the accused instrumentalities do not use amplitude modulation. (See, e.g., Dkt. No. 364, Ex. OYS-INF-A, at 3 (INF0017530) (“[i]t is the phase of the light that is modulated, not the amplitude”).)

⁵ Defendants have asserted that “Plaintiff’s contention that ‘amplitude modulation’ is limited to just those alterations of light that represent data is . . . inconsistent with the intrinsic evidence,” and Defendants have cited disclosure regarding a “phase modulator” in the receiver in the ’952 Patent. (Dkt. No. 458, at 5 (citing ’952 Patent at 6:56–7:15, 7:16–20, 7:26–33 & Fig. 9.) This argument, however, appears to be inconsistent with Defendants’ position as set forth in its technology tutorial. (See Dkt. No. 369, Ex. A, at 7 (“‘Modulation of a wave’ means changing a wave in order to represent data.”); see also *id.*, at 18 (“Amplitude modulation (amplitude-shift keying (ASK)) works by modulating the amplitude of the wave depending on the binary electrical data signal. With amplitude modulation, the power of the signal jumps between, e.g., 100% (maximum light) and 0% (no light) depending on the bit being transmitted.”).) Further, interpreting “modulation” in terms of representing data is consistent with Defendants’ own proposed construction for the term “phase modulate.” Indeed, this portion of the construction was agreed-upon by both sides during claim construction proceedings.

Defendants have asserted that “in construing ‘phase modulate’ to mean ‘keeping the amplitude . . . constant,’ the Court found that the patentee had disavowed claim scope that would cover amplitude variations.” (Dkt. No. 262, at 9 (citing Dkt. No. 190, at 16–17).) Yet, what the Court found was “the specification explains that the desired benefits of phase modulation are obtained only in the absence of amplitude *modulation*,” not merely “variations” as Defendants have asserted. (Dkt. No. 190, at 17 (emphasis modified).) In the final paragraph of its analysis, the Court concluded: “Thus, on balance, in light of the disparagement of prior art involving amplitude modulation, and in light of the disclosures of the advantages of using phase modulation instead of amplitude modulation, the ‘phase modulate’ terms should be interpreted so as to exclude amplitude modulation.” (Dkt. No. 190, at 17.) The Court then adopted Defendants’ proposed construction. (*Id.*, at 18.)

Also of note, in their responsive claim construction brief, Defendants argued for excluding amplitude modulation, and Defendants referred to Plaintiff’s concern about other changes in amplitude as a “red herring”:

Finally, Plaintiff makes an “excluded embodiments” argument. Pl. Br. at 10. Plaintiff’s argument is that if you boost or reduce the power of the transmitter’s laser, that consequentially changes the amplitude of the phase modulated signal, which Plaintiff argues is not allowed by Defendants’ construction. The argument is a red herring. The terms at issue go to the *format of the modulation*, based on the security implications of varying amplitude with data—not whether the power of the phase modulated signal is adjusted by adjusting the power on the source laser.

(Dkt. No. 165, at 16 (emphasis added).)

Thus, by adopting the Defendants’ proposed construction,⁶ the Court resolved the dispute presented by the parties as to whether amplitude modulation should be excluded from the scope of

⁶ Defendants have repeatedly referred to this construction as “the Court’s construction” (see, e.g., Dkt. No. 262, at 1, 2 & 7), which indeed it was, but the relevant inquiry is what the Court understood this language to mean (as reflected by the Court’s analysis in the Claim Construction

“phase modulate.” Defendants have not demonstrated that the dispute presented was otherwise or that the Court expressed any intent to find a broader disclaimer. Indeed, the construction proposed by Defendants, which the Court adopted, refers to creating an “optical signal having a phase that is *representative of the data*.”⁷

The Court therefore **CLARIFIES** the Court’s construction of “**phase modulate**” as follows: “**alter the phase of light to create an optical signal having a phase that is representative of data. Use of phase modulation excludes use of amplitude modulation.**”

The evidence cited by Plaintiff, such as the following, comports with the Court’s understanding in this regard and also demonstrates genuine issues of material fact as to infringement, which precludes summary judgment.

Defendants stated in their Technology Tutorial as part of claim construction proceedings in the present case that “[w]ith phase modulation, the power is constant regardless of the binary electrical data signal.” (Dkt. No. 369, Ex. A, at 19; *see id.*, at 22 (“As these slides have shown, the average power for the ASK [(amplitude-shift keying)] modulated system changes with the binary electrical data signal, but the power does not change in the PSK modulated system.”) The specification disclosures cited by Defendants do not show otherwise. *See* ’327 Patent at 4:39–47

Memorandum and Order), not what Defendants may have tacitly intended it to mean. Although Defendants’ intent and litigation strategy are not presently at issue, litigants should be mindful that the resources of the parties and the Court are best utilized by presenting and resolving legal questions of claim construction during the claim construction proceedings provided by the Court’s Local Patent Rules (rather than through later motion practice regarding factual issues).

⁷ The parties’ arguments regarding the meaning of the word “constant,” which appears in the construction that the Court adopted, need not be considered because the Court herein clarifies its construction of the term “phase modulate.” In other words, there is no need to construe the construction. Rather, the Court herein resolves the parties’ dispute by clarifying the construction in a manner consistent with the Court’s intent as reflected by the analysis set forth in the Court’s Claim Construction Memorandum and Order.

(“The phase-modulated signals have the advantage that breach detection by the energy level detector work more effectively, since the amplitude of the optical signal is constant and thus a drop in the optical signal level is more easily detected.”); *see also* ’592 Patent at 2:41–44 (“The present invention thus permits a card-based phase-modulated transmission system, which can provide for more secure data transmission than existing amplitude-based cards.”) & 2:63–3:3 (“the energy level read by the detector should be constant”).

Also, Plaintiff has submitted technical documents in which Defendants refer to phase modulation systems in terms of phase shifts rather than in terms of any amplitude variations. (See Dkt. No. 364, Ex. OYS-INF-A, at 22 (INF0017549) (referring to “[t]he ‘constant-power’ pattern of QPSK signal (where all symbols have the same power)”; *see also id.*, at 3 (INF0017530) (“It is the phase of the light that is modulated and carries the information to be transmitted, not the amplitude.”); *id.*, at 4 (INF0017531) (referring to QPSK as “[f]our-level phase shift modulation” and contrasting with “[s]tandard two-level amplitude modulation”); Dkt. No. 363, Ex. OYS-FNC-A, at 1 (“DP-QPSK is a phase-modulation system that transmits 2-bit signals represented by four phases on two orthogonally polarized light beams respectively.”); Dkt. No. 365, Ex. OYS-ALU-A, at 4 (referring to DPSK and DQPSK as “phase modulation”); Dkt. No. 366, Ex. OYS-HW-A, at 2588 (HW0021159) (discussing BPSK); Dkt. No. 367, OYS-COR-A, at COR-OYS-0044685 (“In DQPSK . . . two bits are Gray encoded in the phase difference between two consecutive transmit symbols The signal constellation consists of four points with constant amplitude and equidistant phases”).)

Further, Plaintiff’s experts have opined that phase modulation may involve transient variations in amplitude that are not involved in representing data but rather that may result from technical limitations in practical implementations. (See Dkt. No. 363, Ex. OYS-FNC-B, Jan. 10,

2018 Tonguz Report (Fujitsu), at ¶¶ 111–17; *see also* Dkt. No. 364, Ex. OYS-INF-C, Jan. 10, 2018 Tonguz Report (Infinera), at ¶¶ 78–83; Dkt. No. 368, Ex. OYS-ALU-C, Jan. 10, 2018 Dallesasse Report (Alcatel-Lucent), at ¶¶ 103–08; Dkt. No. 366, Ex. OYS-HW-C, Jan. 10, 2018 Tonguz Report (Huawei), at ¶¶ 82–86; Dkt. No. 368, Ex. OYS-COR-C, Jan. 10, 2018 Dallesasse Report (Coriant), at ¶¶ 197–202; Dkt. No. 368, Ex. OYS-CIS-B, Jan. 10, 2018 Dallesasse Report (Cisco), at ¶¶ 131–36; *see, e.g.*, Dkt. No. 279, Feb. 18, 2018 Tonguz dep. at 82:2–5 (“in any real system there is a transition period where the transmitted light is somewhere between one symbol and the next”).)

One of Defendants’ experts, Dr. George Papen, also appears to have acknowledged this in the course of presenting opinions as to invalidity:

59. I also understand that the court has construed “phase modulation” to mean phase modulation while maintaining a constant amplitude. While I do not believe that the typical current practice to generate BPSK, QPSK, QAM, or many other currently implemented transmission techniques satisfies this definition because *the amplitude of the lightwave is typically not held constant when the phase is changed at bit transitions*, I understand that Oyster contends they do. So, as advised by counsel and solely for purpose of this report, to the extent Oyster contends that these transmission techniques satisfy the construction of phase modulation, I will apply that definition to the prior art.

(Dkt. No. 369, Ex. C, Papen Report, at ¶ 59 (emphasis added).)

Plaintiff has likewise cited deposition testimony in which one of Defendants’ experts, Dr. John Buck, has agreed that phase modulation may, in practical use, involve some variations in amplitude, such as when using a “Mach-Zehnder” modulator⁸:

Q So if I’m understanding your testimony just now, are you saying that when you use a Mach-Zehnder phase modulator, and you change the signal from being one phase to being a different phase, there will be a dip in the amplitude during that transition?

⁸ *See* ’816 Patent at 3:62–64 (“Light emitted from laser 12 is depolarized by a depolarizer 14 and passes through a phase modulator 16, for example a Mach-Zender [*sic*, Mach-Zehnder] phase modulator.”)

A Yes.

Q Is there any way to avoid having a dip in the amplitude during the transition from one phase to another when using a Mach-Zehnder modulator to phase modulate a signal?

A It is unavoidable.

* * *

Q And the reason that you believe the amplitude is not constant is because of transitory periods between bits, correct?

A Correct.

Q Now, the only evidence that you cite to in your report that the amplitude fluctuates during transitions between bits is Dr. Dallesasse's [(Plaintiff's expert's)] statement that the amplitude of a PSK signal may fluctuate when transitioning between bits, correct?

A That's not the only source of my contention, it's just my own knowledge of how Mach-Zehnder modulators work. And there are also other issues that can come up that would make, you know, possibly some rippling on the top of the signal as well that could occur. In fact, Bill Thompson mentions that in his deposition too. But fundamentally that's the way Mach-Zehnders work is you will have that transitory drop in signal between -- at least between adjacent 0 and 1 bits.

* * *

Q So would you agree that for a product that uses DPSK, the symbols that are transmitted all have the same value for their amplitude?

[Objection]

A Ideally, yes.

* * *

Q Would you agree that in a DPSK product the amplitude of the signal is not used to represent data?

[Objection]

A I would agree because the amplitude is constant. You could not tell from the amplitude what symbol you have.

* * *

So would you agree that in the accused products that use QPSK, BPSK, or DPSK, each bit of a transmission has a constant amplitude?

[Objection]

A What I mean here is that, again, ideally, each bit of a transmission would have - - may have a constant amplitude, but the way in practice that this is done makes that impossible using Mach-Zehnder modulators. Across a bit, there will be an amplitude that varies with position in general.

(Dkt. No. 365, Ex. OYS-ALU-B, Mar. 1, 2018 Buck dep. at 35:14–25, 180:6–25 & 183:23–186:14.)

Defendants have submitted opinions of other experts purportedly to the contrary. (*See* Dkt. No. 458, Ex. 6, Feb. 25, 2018 Brown Report, at ¶ 352 (“It has long been known that one need only drive the two arms of the Mach-Zehnder with a common voltage in order for the phase modulation in each leg to match, and thus for the Mach-Zehnder to function overall as a pure phase modulator, altering phase in response to the drive voltage while maintaining amplitude constant.”); *id.* at ¶¶ 353–55; *id.*, Ex. 7, Papen Report, at ¶¶ 37–40; Dkt. No. 459, Ex. HW-4, Jan. 31, 2018 Willner Report, at ¶¶ 59–60; Dkt. No. 268, Ex. COR-1, Kahn Report ¶¶ 167–70.

Yet, one of those experts, Dr. Joseph Kahn, has opined that “a configuration that maintains constant amplitude usually cannot achieve a signal quality sufficient for many telecommunications applications.” (*Id.*, at ¶ 170.) Plaintiff also submits that Dr. Kahn has testified as follows:

Q. . . . So is it your opinion that most and possibly all commercially available optical telecommunications transponders use modulators that, by design, create a signal that does not meet the court’s claim construction for phase modulate?

A. Yes.

Q. And does that include most and possibly all commercially available optical telecommunications transponders that transmit using phase shift keying?

A. Yes.

Q. When you say most and possibly all commercially available optical telecommunications transponders, are you aware of even a single commercially available transponder that performs phase shift keying and satisfies the court’s claim construction for phase modulate as you’ve applied that construction?

A. Yes. I’m just going to really mine my memory for a moment here. I’m not aware of any.

(Dkt. No. 367, Ex. OYS-COR-B, Mar. 8, 2018 Kahn dep. at 134:5–24.)

On balance, to the extent these opinions are relevant to the present claim construction dispute, the opinions cited by Plaintiff are more persuasive in the context of the patents-in-suit, which claim improvements in telecommunications. *See, e.g.*, ’816 Patent at Abstract; *Kaneka*

Corp. v. Xiamen Kingdomway Grp. Co., 790 F.3d 1298, 1304 (Fed. Cir. 2015) (“A construction that excludes *all* disclosed embodiments . . . is especially disfavored.”). This understanding is also consistent with a specification disclosure regarding measuring “*average*” optical power. ’327 Patent at 5:35–37 (“average voltage level which represents the average optical power measured by photodetector 153”). Plaintiff persuasively argues that “[t]here is no reason to average the optical power of a signal with an amplitude that is supposed to be everywhere and at all times constant.” (Dkt. No. 496, at 7.)

Finally, to whatever extent Defendants are arguing that the accused instrumentalities cannot infringe because they could be configured so as to involve changes in amplitude that would undermine the objectives set forth in the patents-in-suit, infringement is “not avoided merely because a non-infringing mode of operation is possible.” *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1321–22 (Fed. Cir. 2014) (emphasis added) (quoting *z4 Techs., Inc. v. Microsoft Corp.*, 507 F.3d 1340, 1350 (Fed. Cir. 2007)).

As to the doctrine of equivalents, Defendants have presented arguments as to sufficiency of Plaintiff’s evidence and “vitiation,” as well as that “the patentee expressly disavowed in the specification the very scope that Oyster is now attempting to capture with DOE.” (Dkt. No. 262, at 13–15). These arguments are based on Defendants’ interpretation of the construction of “phase modulate.” Given that the Court has rejected Defendants’ interpretation and is herein clarifying the Court’s construction, the Court denies Defendants’ motion as to the doctrine of equivalents.

Based on all of the foregoing, the Court **DENIES** Defendants’ motion for partial summary judgment and **CLARIFIES** the Court’s construction of “phase modulate” as set forth above.

V. CONCLUSION

Defendants' Motion for Partial Summary Judgment of Noninfringement Based on the Absence of "Phase Modulation" (Dkt. No. 262) is hereby **DENIED**.

Further, for the reasons set forth above, the Court hereby **CLARIFIES** its construction of "phase modulate" as follows: "alter the phase of light to create an optical signal having a phase that is representative of data. Use of phase modulation excludes use of amplitude modulation."

So Ordered this

Jun 21, 2018



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE