

**UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
JACKSONVILLE DIVISION**

PARKERVISION, INC.,

Plaintiff,

v.

Case No. 3:11-cv-719-J-37TEM

QUALCOMM INCORPORATED,

Defendant.

**PARKERVISION'S REPLY TO QUALCOMM'S OPPOSITION TO PARKERVISION'S
MOTION FOR SUMMARY JUDGMENT OF NO INVALIDITY**

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I. INTRODUCTION

ParkerVision's motion for summary judgment (Dkt. 269) presents only questions of law, and, therefore, does not require the Court to engage in the "troublesome venture" of evaluating disputed factual issues or competing expert opinions. Because Qualcomm failed to provide evidence to establish any of its invalidity assertions by clear and convincing evidence, summary judgment in favor of ParkerVision is appropriate on each of the grounds in its motion.

First, Qualcomm's validity expert, Dr. Razavi, fails to set forth any evidence that any prior art reference generates a lower frequency signal from the transferred energy. Additionally, Dr. Razavi fails to apply the plain and ordinary meaning of the "generating" limitation. Thus, Dr. Razavi fails to opine, let alone establish, that any prior art reference meets the "generating" limitation of the Asserted Claims of the '551, '518, and '371 Patents. Second, Dr. Razavi's enablement opinion is premised on an incorrect application of the law. Third, Dr. Razavi fails to establish indefiniteness, which is a question of law. Fourth, Qualcomm concedes it has no evidence regarding its other invalidity assertions. Because each of the foregoing grounds raises pure questions of law, no genuine issues of fact preclude summary judgment.

II. ARGUMENTS AND AUTHORITIES

Unlike the "troublesome venture" discussed by the Court in the *Graphic Packaging* case, ParkerVision's motion does not turn on disputed factual issues. *Graphic Packaging Int'l, Inc. v. C.W. Zumbiel Co.*, No. 10-cv-819-J-37 JBT, slip op. at 8-9 (M.D. Fla. Jan. 8, 2012). Instead, ParkerVision raises pure questions of law that the Court should resolve in ParkerVision's favor.

A. Qualcomm Has Not Set Forth Expert Testimony That Any Prior Art Reference Generates A Lower Frequency Signal *From* The Transferred Energy.

The Asserted Claims of the '551, '518, and '371 Patents require generating the lower frequency or baseband signal *from* the transferred energy. *See* Dkt. 269 at 8; Dkt. 243 at 38-39.

While the Court recognized in its claim construction that it is possible to “integrate energy while simultaneously generating a down-converted signal” and determined that the “generating” limitation did not require construction, it further recognized that the energy “transfer” step is a distinct action (and distinct limitation) from the “generation” of a down-converted signal from transferred energy. *See* Dkt. 243 at 39 (“the Court does not understand the disclosed inventions to require the completion of an ‘energy transfer step’ before the generation of a down-converted signal begins”); *id.* at 40 (“one could understand the claim language ... as referring to the fact that transferred energy is the source of the energy used to generate the down-converted signal”).

Instead of applying the Court’s construction of the “transferring” limitation, *see* Dkt. 243 at 10-13, and separately addressing the “generating” limitation consistent with the Court’s analysis of that limitation and the claim language, *see id.* at 38-40, Dr. Razavi merges the “transferring” and “generating” limitations and sets forth no evidence that any prior art reference “generates” a lower frequency signal from the transferred energy.¹ Dr. Razavi’s analysis fails as a matter of law because while he endeavors to show that energy is transferred in the prior art (satisfying the “transfer” limitation) and that a lower frequency signal results in the prior art (whether simultaneous with the transfer or not), Dr. Razavi *entirely fails* to show that the lower frequency signal is “generated *from* the transferred energy” as the claims require. It is this causal relationship that Dr. Razavi fails to identify and describe. *See also* Dkt. 269 at 7-10.

In opposition, Qualcomm points to paragraphs 166-167 of Dr. Razavi’s report, together with various citations to claim charts attached to Dr. Razavi’s report. Dkt. 275 at 10. This “evidence” cited by Qualcomm in opposition does no more than explain that Dr. Razavi contends that in the prior art energy is transferred into a storage device (*i.e.*, that the “transfer”

¹ *See* Ex. 24 at ¶¶ 166, 175-76, 188-90, 199-01, 207-08, 220-21, 231-33, 239-41, 273-74, 362-63, 370-71, 377-78, 384-85, 391-92, 398-99, 405-06, 432, 438-39, 445, 451, 457, 463, 486-92, 495, 521-24, 529-36, 538-45, and 546-52.

limitation is alleged to be met). Dr. Razavi's discussion of "LO gating" and "principle[s] of physics" does nothing to explain how the lower frequency signal is "*generated from* the transferred energy" as the claims require. Rather, Dr. Razavi's analysis reads the "generating" limitation out of the claims, so that any reference that transfers energy into a storage device and somehow results in a lower frequency signal will meet this claim element, regardless of whether the lower frequency signal is *generated from* the transferred energy.²

Qualcomm also argues that ParkerVision is reading into the claims the temporal relationship that the Court expressly rejected in its claim construction order. Dkt. 275 at 10. ParkerVision does not argue that the "generating" limitation must occur *after* the "transfer" limitation. Instead, ParkerVision acknowledges that the transfer of the energy from the carrier signal and the generation of the lower frequency signal may occur at the same time. But, as the claims require, ParkerVision argues that the "generating" limitation must occur *and* that it must occur *from* the "transferred energy." See Dkt. 243 at 40 ("one could understand the claim language...as referring to the fact that transferred energy is the source of the energy used to generate the down-converted signal"); see also WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 494 (1989) (stating "from" is "used as a function word to indicate the source, cause, agent, or basis"). This is a causal relationship, as opposed to a temporal relationship. Having merged the "transfer" and "generating" limitations together without addressing the causal relationship between the two, Dr. Razavi never sets forth evidence or opinion that any prior art reference generates a lower frequency signal *from* the transferred energy. Accordingly, Dr. Razavi's validity analysis fails as a matter of law. See *Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1315-16 (Fed. Cir. 2002); Dkt. 269 at 7, 16 (setting forth additional cases).

² The Patents-in-Suit expressly distinguish "voltage samplers" where no energy is discharged. Dkt. 269 at 12. Dr. Razavi attempts to broaden the claims so that they read on prior art that "holds" energy. *Id.*; Dkt. 269 at 14.

B. Qualcomm Has Not Set Forth Expert Testimony That Any Prior Art Reference Discharges Energy From A Storage Device.

1. Qualcomm Previously Agreed That The Plain And Ordinary Meaning Of The “Generating” Limitation Required Discharge Of Energy From A Storage Device.

As Qualcomm admits, the plain and ordinary meaning of “generating” the lower frequency signal “*from* the transferred energy” requires the discharge of energy from a storage device. In its claim construction order, the Court concluded that construction of the “generating” limitation was not necessary and that it should be given its plain and ordinary meaning. Dkt. 243 at 38-40. Up until June 24, 2013, when Qualcomm filed its Opposition, the parties were in agreement that the plain and ordinary meaning of “all asserted claims require[s] discharge of energy from a storage device”—this is a verbatim quote of the heading for Section C.1 of Qualcomm’s motion for summary judgment. Dkt. 270 at 20; *see also id.* at 22 and 23 (Headings for Sections C.2 and C.3 of Qualcomm’s motion for summary judgment referring to “discharge of energy from a storage device”). Having taken the position that the plain and ordinary meaning requires the discharge of energy from a storage device to support its own summary judgment motion, Qualcomm should not be heard to advance a contrary understanding now. Qualcomm must interpret the “generating” limitation consistently for both invalidity and infringement. *Source Search Techs., LLC v. Lending Tree, LLC*, 588 F.3d 1063, 1075 (Fed. Cir. 2009).

2. The “Generating” Limitation’s Plain And Ordinary Meaning Requires Discharge Of Energy From A Storage Device.

Even putting aside Qualcomm’s admission, the plain and ordinary meaning of “generating” the lower frequency signal “*from* the transferred energy” requires the discharge of energy from a storage device. In claim construction, a patent’s “specification is always highly relevant. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1361 (Fed. Cir.

2013) (citation omitted). The specifications of the '551, '518, and '371 Patents explain that the lower frequency signal is generated by discharging transferred energy from the storage device. *See* Dkt. 269 at 11-12. The specification of the '551 Patent describes the sawtooth-like voltage waveform of Fig. 57E as a baseband signal “generated by the down-conversion process.” '551 Patent at 85:40-41; *see also* '518 Patent at 86:15-25; '371 Patent at 6:32-54.

With respect to Fig. 57E, the generated baseband signal includes portions 5710A, representing energy transferred from the carrier signal, and 5710B, representing “energy stored in a storage device continuing to drive the load.” '551 Patent at 85:48-57. The falling edges of the sawtooth-like waveform (portion 5710B) “occur when the switching module is opened” and indicates the discharge of energy from the storage device. *Id.* at 85:57-58. As shown by the specifications of the '551, '518, and '371 Patents, it is this discharge of energy, or the falling edge of the sawtooth, that generates a lower frequency signal or baseband signal *from* transferred energy. This is consistent with the testimony of Dr. Prucnal, ParkerVision’s expert:

When the switch closes, non-negligible current from the RF carrier signal is allowed to flow into a relatively large capacitor. The capacitor accumulates and stores energy while the switch is closed. When the switch opens, part of the accumulated non-negligible energy in the capacitor is transferred to the load impedance ... creating a sawtooth-like waveform and generating the baseband signal.

Ex. 1 at 45-46. It is also consistent with the portions of the specification that distinguish prior art voltage samplers that “hold”—but never discharge—transferred energy. *See, e.g.*, '551 Patent at 55:8-25 (In the prior art, as explained by reference to FIG. 79D, “[t]he holding module 2706 substantially holds or maintains each under-sampled amplitude until a subsequent under-sample. ... The holding module 2706 outputs the under-sampled amplitudes [voltage values] as the down-converted signal 1308A.”). *See also* Dkt. 269 at 12, 14-15.

Qualcomm disagrees, arguing that ParkerVision’s interpretation “seeks to redefine the term ‘signal’ to exclude the voltage on a capacitor.” Dkt. 275 at 15. ParkerVision acknowledges

that the stored energy is related to voltage across the storage device—but they are not the same. Dkt. 269 at 15 (Dr. Razavi agreeing that voltage and energy are not the same). The energy, E , stored in a capacitor is proportional to the square of the voltage, V , where C represents the capacitance: $E = 1/2CV^2$. Ex. 1 at 49. Nonetheless, discharge of energy, in addition to voltage across a capacitor, is required—as the patents teach. ’551 Patent at 55:8-25; Dkt. 269 at 14-15.

The parties agree that the sawtooth waveform illustrated in the patents shows that a lower frequency signal is generated, but disagree about whether this sawtooth waveform is the lower frequency signal itself or whether it represents the generation of the lower frequency signal. *See* Dkt. 269 at 11-12; Dkt. 275 at 16. Under Qualcomm’s interpretation, the lower frequency signal is not generated from the transferred energy—it *is* the voltage on the capacitor. However, this ignores that the sawtooth waveform includes falling edges with successive discharges of energy from the storage device and that this discharge is sent to the downstream circuitry as the lower frequency signal. In this way, the lower frequency signal is generated *from* transferred energy. Because this interpretation “stays true to the claim language and most naturally aligns with the patent’s description of the invention,” the proper interpretation of the “generating” limitation’s plain and ordinary meaning requires discharge. *See Power Integrations*, 711 F.3d at 1361.³

3. The Court Must Determine Whether, As A Matter Of Law, Dr. Razavi Has Misapplied The Plain And Ordinary Meaning Of The “Generating” Limitation.

Consistent with the specification of the patents-in-suit, the Court’s claim construction order, and Qualcomm’s own prior position, the plain and ordinary meaning of “generating” the lower frequency signal “*from* the transferred energy” requires the transferred energy to be discharged from a storage device. *See* Dkt. 269 at 11-12; *see also* Dkt. 243 at 40 (The

³ Qualcomm argues that ParkerVision’s interpretation “requires a sawtooth signal generated solely by energy discharged through a low-impedance load” and that “the patents themselves describe the sawtooth voltage pattern on

“transferred energy is the *source of the energy used to generate the down-converted signal.*” (emphasis added)). If there is no discharge of the transferred energy, then the transferred energy is not the “source of the energy used to generate the down-converted signal.” In conflict with its motion for summary judgment, Qualcomm argues that “[t]he claims at-issue in this motion require only that the signal be generated; they have no discharge requirement.” Dkt. 275 at 15.⁴

The parties’ dispute raises an issue of law—whether Dr. Razavi correctly applied the plain and ordinary meaning of the “generating” limitation.⁵ Accordingly, the Court must determine whether Dr. Razavi correctly applied the plain and ordinary meaning of the “generating” limitation in his validity analysis, even though he admittedly excluded the discharge of energy from his analysis. Dkt. 269 at 13.

4. Summary Judgment Is Proper Because Dr. Razavi Excluded Discharge Of Energy In His Validity Analysis.

The parties agree that Qualcomm’s anticipation and obviousness assertions must be supported by expert testimony. *Alexsam, Inc. v. Idt Corp.*, Nos. 2012-1063, -1064, 2013 U.S. App. LEXIS 10009, at *28-29 (Fed. Cir. May 20, 2013); *see also* Dkt. 269 at 7; Dkt. 270 at 12. And this expert testimony must address each and every claim element. *See, e.g., Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003). Specifically, “testimony concerning anticipation must be testimony from one skilled in the art and must identify each claim element,

the capacitor as being the generated downconverted signal.” Dkt. 275 at 16. The sawtooth waveform’s falling edge (Portion 5710B) indicates a voltage drop on the storage device, which occurs from energy discharge.

⁴ If Qualcomm’s position that no discharge is required is accepted, its motion for summary judgment, which is premised on the absence of energy discharge from Qualcomm’s products, must also be denied. Dkt. 270 at 20-27. Unlike Qualcomm, ParkerVision has been consistent in both its infringement and validity analysis that discharge is required. And, as explained in ParkerVision’s opposition to Qualcomm’s summary judgment motion, Dr. Prucnal has opined that the Accused Products infringe because they discharge energy. Dkt. 277 at 12-13, 19-20.

⁵ The Court is required to “determine what claim scope is appropriate in the context of the patents-in-suit.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (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.” *Id.* at 1362.

state the witnesses' interpretation of the claim element, and explain in detail how each claim element is disclosed in the prior art reference." *Schumer*, 308 F.3d at 1315.

Dr. Razavi admitted that his anticipation and obviousness analysis did not attempt to show that any prior art reference generated a lower frequency signal by discharging energy from a storage device. *See* Dkt. 269 at 13-14. Dr. Razavi testified that in his analysis, the "generating" limitation "does not require the capacitor to be discharged to generate the down-converted signal" and that he applied this analysis to each prior art reference. Ex. 23 at 267:17-268:2, 277:11-21. Significantly, Qualcomm's response does not address or refute Dr. Razavi's admissions that he did not provide any evidence or opinion that any prior art reference generates a lower frequency signal by discharging energy, as the plain and ordinary meaning of the claims require. In fact, all Qualcomm points to are some "900+ pages" of invalidity claim charts for the '551, '518, and '371 Patents, which never once mention the word "discharge" or "sawtooth."⁶ Exs. 2-22. Qualcomm fails as a matter of law to satisfy its burden as to its anticipation and obviousness assertions regarding the '551, '518, and '371 Patents.

In its response, Qualcomm argues summary judgment is not proper if the "generating" limitation's plain and ordinary meaning includes discharge of a storage device. Dkt. 273 at 11-15. Qualcomm contends ParkerVision "simply ignores the disclosures of the sawtooth charge/discharge cycle in the references cited by Qualcomm." *Id.* at 11. However, this is nothing more than attorney argument, which is insufficient for Qualcomm to carry its burden. *See Ferring B.V. v. Barr Labs., Inc.*, 437 F.3d 1181, 1193 (Fed. Cir. 2006) ("Conclusory allegations and attorney arguments are insufficient to overcome a motion for summary judgment."). Qualcomm cites nothing from Dr. Razavi mapping any of the alleged "disclosures of the sawtooth

charge/discharge cycle in the references cited by Qualcomm” to the asserted claims. Nor could it—Dr. Razavi admitted that he never attempted to explain how any prior art reference, including Weisskopf, Estabrook and Nozawa, generates the lower frequency signal by discharging energy.⁷

Because the parties agree the case involves complex technology requiring, expert testimony to map the asserted claims to the alleged prior art, Dr. Razavi’s admitted and undisputed failure to set forth an analysis or evidence that any prior art reference generates the lower frequency signal by discharging energy, mandates summary judgment in ParkerVision’s favor. *See* Dkt. 269 at 7; Dkt. 270 at 12; *see also Alexsam*, 2013 U.S. App. LEXIS at *28-29. The attorney argument raised by Qualcomm for the first time in its opposition regarding Weisskopf, Estabrook, and Nozawa, and their alleged discharge of energy, is insufficient to defeat ParkerVision’s summary judgment, or somehow create a disputed issue of fact or “battle of the experts.” *Ferring*, 437 F.3d at 1193. There can be no “battle” between Qualcomm’s expert and ParkerVision’s expert on this point—Qualcomm’s expert admitted he provided *no* analysis.

C. Qualcomm’s Enablement Challenge Fails As A Matter Of Law.

In its opposition, Qualcomm does not contest ParkerVision’s assertion that Dr. Razavi applied the legally incorrect test for enablement. *See* Dkt. 275 at 18-19. In fact, Qualcomm still points to Dr. Razavi’s analysis of Mr. Sorrells’ technology tutorial testimony, not the patents themselves. *Id.* Thus, Dr. Razavi’s opinion is legally incorrect. *See* Dkt. 285 at 22-25; *Herbert v. Lisle Corp.*, 99 F.3d 1109, 1117 (Fed. Cir. 1996) (“Incorrect statements of law are no more admissible through ‘experts’ than are falsifiable scientific theories.”).

⁶ Qualcomm points to the length of Dr. Razavi’s report (totaling over 1,700 pages) to argue that “Dr. Razavi carefully analyzed the asserted claims in this case.” Dkt. 275 at 9. The *quantity* of Dr. Razavi’s discussion cannot rectify its lack of *quality*. *Cf. Schumer*, 308 F.3d at 1315 (testimony must be clear, convincing, and detailed).

⁷ Even if Qualcomm’s attorney argument is considered sufficient for summary judgment purposes, Qualcomm only provided attorney argument regarding the Estabrook, Nozawa, and Weisskopf references. *See* Dkt. 275 at 11-15. No

D. Qualcomm Fails To Show That Any Asserted Claim Is Indefinite.

Minor typographical errors and claims using terms including “substantial” and “accurate” are not indefinite. Dkt. 269 at 19-24. Qualcomm’s assertion that these terms lack a required frame of reference must fail as a matter of law because the Court construed the term “substantial” and Dr. Razavi construed each of the terms with typographical errors and “accurate voltage reproduction” and applied them in his validity analysis. Dkt. 269 at 20-22; *Apple, Inc., v. Samsung Elecs. Co.*, Case No. 11-CV-01846, 2013 U.S. Dist. LEXIS 13237, at *26 (N.D. Cal. Jan. 29, 2013) (expert’s application of “substantially centered” to accused products supported conclusion that term was not insolubly ambiguous).

E. Qualcomm Has No Evidence That The Patents-In-Suit Are Otherwise Invalid.

Qualcomm contends that summary judgment as to all of its other invalidity assertions and counterclaims is improper.⁸ Qualcomm’s amended answer maintains these invalidity assertions and, thus, they remain at issue. Dkt 248 at 3-5. Qualcomm admits that it has not provided any evidentiary support for any of these assertions. Dkt. 277 at 20. The Court should therefore grant summary judgment in ParkerVision’s favor or should dismiss Qualcomm’s remaining assertions with prejudice. *Microsoft Corp. v. Jesse’s Computers & Repair, Inc.*, 211 F.R.D. 681, 684 (M.D. Fla. 2002) (dismissing affirmative defenses where no factual support was alleged).

III. CONCLUSION

For the foregoing reasons, ParkerVision’s summary judgment motion should be granted.

attorney argument was presented regarding the van Graas, Tayloe, Shahani, Traylor, MDS-2000, Crols, and Gordy references. At the very least, summary judgment in ParkerVision’s favor is appropriate as to these references.

⁸ Qualcomm’s most recent answer and counterclaims asserts that the Patents-in-Suit are invalid for the following grounds: (i) patentable subject matter and double patenting under § 101; (ii) abandonment, prior foreign filing, or derivation from another under § 102; or (iii) best mode under § 112. Dkt. 248 at 3-5.

July 11, 2013

Respectfully submitted,

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this day, July 11, 2013, I electronically filed the foregoing with the Clerk of the Court by using the CM/ECF system which will send a notice of electronic filing to all counsel of record.

/s/ Mario A. Apreotesi

Mario A. Apreotesi