

UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF FLORIDA  
JACKSONVILLE DIVISION

PARKERVISION, INC.,

Plaintiff,

v.

Case No. 3:15-cv-1477-J-39JRK

APPLE INC. and QUALCOMM  
INCORPORATED,

Defendants.

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**ORDER**

**THIS CAUSE** is before the Court for patent claim construction of claim terms or phrases, as described in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). The parties have submitted the following documents for the Court's consideration: 1) ParkerVision's Opening Claim Construction Brief (Doc. 80; Plaintiff's Brief); 2) Defendants' Opening Claim Construction Brief (Doc. 81; Defendants' Brief); 3) ParkerVision's Responsive Claim Construction Brief (Doc. 83; Plaintiff's Responsive Brief); 4) Defendants' Responsive Claim Construction Brief (Doc. 84; Defendants' Responsive Brief); 5) Joint List of Claim Terms for Construction (Doc. 78; Claim Terms); and 6) Joint Claim Construction Chart (Doc. 86-1; Claim Construction Chart).

**I. Background**

On December 14, 2015, Plaintiff ParkerVision, Inc. initiated this case alleging patent infringement against nine Defendants. (Doc. 1; Complaint). Plaintiff amended the

Complaint twice. (Docs. 1, 3, and 121).<sup>1</sup> In the operative Second Amended Complaint (Doc. 121), Plaintiff alleges infringement of the United States Patent No. 9,118,528 against the only two remaining Defendants—Apple, Inc. and Qualcomm Incorporated. See Sec. Am. Compl. ¶¶ 12–22.

On August 31, 2018, the Court held a Technology Tutorial and Claim Construction hearing. (Doc. 113). In accordance with the Court’s Order (Doc. 112), the parties filed a Joint Notice Regarding Claim Construction (Doc. 125), representing that after they met and conferred on September 18 and 25, 2018, the parties were unable to reach an agreement on the disputed claim construction terms or phrases or claims alleged to be indefinite. The Court now constructs six claim terms or phrases, determines whether three claim phrases are invalid for indefiniteness, and considers whether three agreed-upon claim terms or phrases are properly construed by the parties. See Claim Constr. Chart at 2–3.

The ‘528 patent is titled “Method and System for Down-Converting an Electromagnetic Signal, and Transforms for Same, and Aperture Relationships.” (Docs. 80-1, 80-2; ‘528 Patent). The ‘528 Patent concerns systems and methods used in wireless receivers, such as those used in cell phones, and is directed to a system for down-converting a high-frequency modulated carrier signal to a low-frequency baseband signal. (Doc. 80-20 ¶ 18; Declaration of Dr. Phillip E. Allen). As described in the abstract of the ‘528 Patent,

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<sup>1</sup> By Order dated June 5, 2019 (Doc. 141), the Honorable James R. Klindt, United States Magistrate Judge, denied Plaintiff’s Motion for Leave to File Third Amended Complaint (Doc. 131). Plaintiff filed an Objection (Doc. 142) to Judge Klindt’s Order, which the Court overruled and affirmed Judge Klindt’s Order (Doc. 143).

Briefly stated, in embodiments the invention operates by receiving an EM signal and recursively operating on approximate half cycles ( $\frac{1}{2}$ ,  $1\frac{1}{2}$ ,  $2\frac{1}{2}$ , etc.) of the carrier signal. The recursive operations can be performed at a sub-harmonic rate of the carrier signal. The invention accumulates the results of the recursive operations and uses the accumulated results to form a down-converted signal. In an embodiment, the EM signal is down-converted to an intermediate frequency (IF) signal. In another embodiment, the EM signal is down-converted to a baseband information signal. In another embodiment, the EM signal is a frequency modulated (FM) signal, which is down-converted to a non-FM signal, such as a phase modulated (PM) signal or an amplitude modulated (AM) signal.

Plaintiff alleges that Defendants' products, including the iPhone 6 and 6S smartphones, iPad Air tablet, radio frequency receivers, transceivers, and other semiconductors that enable wireless technology, infringe on claims 1, 5, 8–10, 17–19, 23, 26–28, and 33–36 of the '528 Patent. See Sec. Am. Compl. ¶¶ 15, 17–18.

## II. Claim Construction Standards

A patent describes the scope and limits of an invention to alert the public to what exclusive rights the patentee holds, and by the same token, what remains open to the public. Markman, 52 F.3d at 978–79. A patent consists of claims which should “particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention.” Howmedica Osteonics Corp. v. Tranquil Prospects, Ltd., 401 F.3d 1367, 1371 (Fed. Cir. 2005) (quoting 35 U.S.C. § 112). A determination of patent infringement requires a two-step analysis: first, the meaning of the claim language is construed, then the facts are applied to determine if the accused device falls within the scope of the claims as interpreted. Markman, 52 F.3d at 976.

“When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.” O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co., Ltd., 521 F.3d 1351, 1362 (Fed. Cir. 2008). When the Court determines claim

construction based on evidence intrinsic to the patent, such determinations are questions of law subject to de novo review. Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 837 (2015). To the extent that the Court makes underlying factual findings based on extrinsic evidence, such findings are reviewed for clear error. Id. at 837–38. A court need construe “only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.” Vivid Techs., Inc. v. Am. Science & Eng’g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999); see also U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”).

In claim construction, courts first examine the patent’s intrinsic evidence to define the patented invention’s scope. See Phillips v. AWH Corp., 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc). This intrinsic evidence includes the claims, the specification, and the prosecution history. See id. at 1314–17. Claim construction begins with the words of the claims themselves. Amgen Inc. v. Hoechst Marion Roussel, Inc., 457 F.3d 1293, 1301 (Fed. Cir. 2006); Phillips, 415 F.3d at 1312. “[T]he words of a claim ‘are generally given their ordinary and customary meaning.’” Phillips, 415 F.3d at 1312 (quoting Vitronics Corp. v. Conceptoronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Such ordinary meaning “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.” Phillips, 415 F.3d at 1313. “Furthermore, a claim term should be construed consistently with its appearance in other places in the same claim or in other

claims of the same patent.” Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001).

The task of comprehending these words is not always a difficult one. “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.” Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (Fed. Cir. 2007) (quoting Phillips, 415 F.3d at 1314). However, a patent “specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.” Phillips, 415 F.3d at 1316. “In such cases, the inventor’s lexicography governs.” Id.

“When dealing with technical terms . . . a court should look to ‘the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.’” Amgen Inc., 457 F.3d at 1301 (quoting Phillips, 415 F.3d at 1314). Other asserted or un-asserted claims can also aid in determining the claim’s meaning because claim terms are typically used consistently throughout the patent. Phillips, 415 F.3d at 1314. Differences among the claim terms can also assist in understanding a term’s meaning. Id. For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. Id. at 1314–15.

A “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context

of the entire patent, including the specification.” Id. at 1313. Accordingly, the specification “is always highly relevant to the claim construction analysis,” and provides the “single best guide to the meaning of a disputed term.” Id. at 1315 (quoting Vitronics Corp., 90 F.3d at 1582). The specification may resolve ambiguous terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002).

“[W]hile . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims.” Comark Commc’ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) (quoting Sjolund v. Musland, 847 F.2d 1573, 1581 (Fed. Cir. 1988)). Importing limitations from the specification therefore “should be avoided unless the patentee clearly ‘intends for the claims and the embodiments in the specification to be strictly coextensive.’” Pfizer, Inc. v. Ranbaxy Labs Ltd., 457 F.3d 1284, 1290 (Fed. Cir. 2006) (quoting Phillips, 415 F.3d at 1323). In this regard, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” Comark Commc’ns, Inc., 156 F.3d at 1187 (citation omitted); see also Phillips, 415 F.3d at 1323 (“although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”).

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent.

Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1356 (Fed. Cir. 2004). The “prosecution history provides evidence of how the [USPTO] and the inventor understood the patent.” Phillips, 415 F.3d at 1317. However, because the prosecution history represents negotiation between the USPTO and the applicant, “it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” Id. Nevertheless, the prosecution history can be helpful “by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of the prosecution.” Id. “Disclaimers based on disavowing actions or statements during prosecution, however, must be both clear and unmistakable.” Sorenson v. Int’l Trade Comm’n, 427 F.3d 1375, 1378–79 (Fed. Cir. 2005). Further, it is the applicant and not the examiner who must “give up or disclaim subject matter” that would otherwise be included within the scope of the claim. Id. at 1379 (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1124 (Fed. Cir. 2004)). The statement of an examiner alone will not necessarily limit a claim. Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001).

Though not preferred over intrinsic evidence, the Court may also rely on extrinsic evidence, which is “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” Markman, 52 F.3d at 980. Expert testimony may be useful in claim construction,

“as to provide background on the technology . . . to explain how an invention works, to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of ordinary skill in the art, or to establish that a particular term in the patent or prior art has a particular meaning in the pertinent field.”

Conoco, Inc. v. Energy & Env'tl. Int'l, L.C., 460 F.3d 1349, 1362 (Fed. Cir. 2006) (quoting Phillips, 415 F.3d at 1318). Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” Phillips, 415 F.3d at 1317 (internal quotation marks and citation omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms. However, technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. Id. at 1321–22. Similarly, expert testimony may aid the court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory unsupported assertions as to a term’s definition are entirely unhelpful to the court. Id. at 1318. Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” Id. Finally, claim construction must proceed “without regard to the accused device.” See Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324, 1333 (Fed. Cir. 2000).

### **III. Discussion**

#### **a. Claim construction of the six disputed claim terms or phrases**

The parties disagree over the construction of the following six terms in the ‘528

Patent:

1. portion of energy that is distinguishable from noise
2. energy storage element
3. baseband signal portion
4. outputs
5. integrated
6. derived

Claim Constr. Chart at 2. The Court considers each in turn.

**i. portion of energy that is distinguishable from noise**

<b>'528 Patent Term or Phrase</b>	<b>Plaintiff's Proposed Construction</b>	<b>Defendants' Proposed Construction</b>
portion of energy that is distinguishable from noise	"enough energy to allow the system to successfully distinguish the portion of energy from noise; if the circuit successfully down-converts, the portion of energy is distinguishable from noise"	Plain and ordinary meaning.

Plaintiff argues that the Federal Circuit in previous litigation construed "portion of energy that is distinguishable from noise" as Plaintiff's proposed construction in this case. See Pl. Br. at 20–21 (citing ParkerVision, Inc. v. Qualcomm Inc., 621 F. App'x 1009, 1019 (Fed. Cir. 2015) ("[T]he system successfully distinguishes the transferred energy from noise. No reasonable jury could have concluded otherwise.") ("ParkerVision, I")). Plaintiff argues that its "proposed construction simply adopts the Federal Circuit's interpretation, consistent with the plain and ordinary meaning . . . ." Pl. Br. at 21.

Defendants argue that the Court does not need to reword the claim language because the term uses common words without special meaning. See Def. Br. at 13 (citing Cambrian Sci. Corp. v. Cox Commc'ns, Inc., 617 F. App'x 989, 992 (Fed. Cir. 2015) ("we look to the claim language, as [t]he actual words of the claim are the controlling focus." (internal quotations and citations omitted)); ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc., 694 F.3d 1312, 1326–27 (Fed. Cir. 2012) ("The district court did not err in concluding that these terms have plain meanings that do not require additional construction.")). Defendants argue that Plaintiff's proposed construction has two parts—

one part before the semicolon and the other part after the semicolon. See Def. Br. at 13. Defendants contend that the first part invites confusion in that it “merely rearranges words, swapping the claim language ‘portion of energy that is distinguishable from noise’ for language indicating that the system must ‘successfully distinguish the portion of energy from noise.’” Def. Resp. Br. at 8. As to the second part, Defendants argue that Plaintiff “improperly seeks to transform a factual issue—whether the system at issue actually transfers energy to a storage device in amounts distinguishable from noise—into a per-se legal rule.” Def. Br. at 14 (citing Shire Dev. v. Watson Pharm., 787 F.3d 1359, 1368 (Fed. Cir. 2015) (that a factual “question may need to be resolved does not compel a claim construction that departs from the customary and ordinary meaning of the claims . . .”).

Defendants also argue that Plaintiff’s proposed construction does not adopt the construction in ParkerVision, I, but instead “seeks to equate successful downconversion with transferring energy to a capacitor, regardless of how the downconverter actually operates.” Def. Resp. Br. at 9. Defendants represent that the court in ParkerVision, I, focused specifically on the Weisskopf prior art reference, “and the remainder of its opinion shows that the Weisskopf discussion cannot be stretched to cover devices that downconvert in other ways.” Id. (citing ParkerVision, I, 621 F. App’x at 1013–16). In other words, Defendants maintain that “successful downconversion does not require transferring any energy into a capacitor, let alone amounts distinguishable from noise.” Def. Resp. Br. at 10. Defendants argue that adopting Plaintiff’s “proposed construction would lead to the absurd result that a downconverter that successfully downconverted but

did not include any capacitors whatsoever would still be found to have transferred energy to a capacitor in amounts distinguishable from noise.” Id.

After careful review, the Court declines Plaintiff’s invitation to re-write the “portion of energy that is distinguishable from noise.” Claim 1 states in part:

a first switch coupled to a first control signal which comprises a sampling aperture with a specified frequency, wherein the first switch is on and a portion of energy that is distinguishable from noise is transferred from the modulated carrier signal as an output of said first switch during the sampling aperture of the first control signal . . . .

‘528 Patent claim 1 (emphasis added). A reading of the plain language in claim 1 supports that the plain and ordinary meaning is the proper construction as it pertains to this case. See id.; see also (Doc. 81-1; Declaraton of Behzad Razavi ¶¶ 26–32 (“[T]he part of [Plaintiff]’s construction reading ‘if the circuit successfully downconverts, the portion of energy is distinguishable from noise’ is mistaken.”)). Plaintiff’s proposed construction is redundant and injects confusion into otherwise clear language. The construction invites confusion by adding “successfully distinguish” and “enough energy.” These words are unsupported by the claim language or evidence extrinsic to the ‘528 Patent. Defendants’ expert Behzad Razavi opined that “[p]eople in this field have long known that transferring energy into a storage element, such as a capacitor, is not necessary for downconversion . . . some devices downconvert using energy in a capacitor, and some devices do not.” Razavi Decl. ¶ 29.

Having participated as an expert in ParkerVision, I, Dr. Razavi opines that Plaintiff’s

proposed construction contradicts the technological underpinnings of the Federal Circuit’s opinions in [ParkerVision, I]. In particular, [Plaintiff’s] construction eliminates the technical distinction the Federal Circuit drew between devices that downconvert using energy stored in a capacitor and

devices that downconvert in other ways. For devices like [Plaintiff's] claimed energy sampler and the cited prior art that downconvert using energy in a capacitor, successful downconversion can provide evidence that the amount of energy transferred into the capacitor is distinguishable from noise. But for devices like Qualcomm's that downconvert using double-balanced mixers, successful downconversion is unrelated to how much energy is in a downstream capacitor.

Razavi Decl. ¶¶ 30–31. The Federal Circuit in ParkerVision, I, held that one of the inventors, David Sorrells's,

testimony thus establishes that to determine whether or not energy in amounts distinguishable from noise has been transferred from the carrier signal, one may look to whether the down-converting circuit functions in practice. If a circuit successfully down-converts, that is proof that enough energy has been transferred to overcome the noise in the system.

ParkerVision, I, 621 F. App'x at 1019. The Court agrees with Defendants' interpretation of ParkerVision, I, to the extent that the discussion on downconversion focused on a prior art, Weisskopf, and the remainder of the opinion supports that the Weisskopf discussion cannot be stretched to cover devices that may downconvert in other ways. See id. at 1013–1017 (“It is undisputed that double-balanced mixers existed prior to ParkerVision's invention and that a double-balanced mixer by itself (i.e., without the addition of output capacitors) can be used to convert high-frequency carrier signals into low-frequency baseband signals.”). Moreover, the Court will not resolve issues of fact at the claim construction phase. See Lazare Kaplan Int'l, Inc. v. Photocopy Techs., Inc., 628 F.3d 1359, 1376 (Fed. Cir. 2010) (“This court agrees with the [d]efendants that the parties' dispute concerns factual questions relating to the test for infringement and not the legal inquiry of the appropriate scope of the ‘positional accuracy’ limitation.”).

The Court relies on the words of the Claim, the specification, and the minimal extrinsic evidence needed to demonstrate that a “portion of energy that is distinguishable

from noise” is understood by a person of ordinary skill in the art. Such evidence intrinsic and extrinsic to the ‘528 Patent supports that the term is due to be given its plain and ordinary meaning. The construction for the term “portion of energy that is distinguishable from noise” in the ‘528 Patent is as follows:

<b>‘528 Patent Term or Phrase</b>	<b>Construction</b>
portion of energy that is distinguishable from noise	Plain and ordinary meaning.

**ii. energy storage element**

<b>‘528 Patent Term or Phrase</b>	<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
energy storage element	“energy storage circuit or device”	Plain and ordinary meaning.  Alternatively, “energy storage device.”

Plaintiff argues that its proposed construction adopts the plain and ordinary meaning of “energy storage element,” as proposed by Defendants, by encompassing both an energy storage “circuit” or “device.” See Pl. Bf. at 24–25. The parties agree that “element” could be constructed as “device.” See Def. Br. at 15. The parties disagree whether an “element” can be constructed as a “circuit.” See id.

Plaintiff argues that limiting “element” to “‘device’ is inconsistent with the ordinary meaning, as demonstrated by the Illustrated Dictionary of Electronics, Seventh Edition, which defines ‘element’ as including both a ‘circuit component’ and a ‘circuit, such as an AND gate, that can be taken as a unit because it performs a special function.’” Pl. Br. at 25 (citing Ex. M at “element”; Ex. N at “element”; Allen Decl. ¶ 57). Plaintiff also argues

that the '528 Patent language "describes the energy storage element as comprising more than just a single capacitor." Pl. Resp. Br. at 16 (emphasis omitted) (citing '528 Patent 105:60–106:7).

Defendants state that Plaintiff's proposed construction requires the term "element" include entire "circuits." Def. Resp. Br. at 12. Defendants argue that this is improper because an "element" is a narrower term that does not encompass entire circuits and draws no support from the '528 Patent. See Def. Br. at 15–16. Defendants maintain that the '528 Patent "depicts energy storage elements as individual devices, such as a capacitor, rather than entire circuits." Id. at 16 (citing '528 Patent Fig. 68C (identifying "CAPACITOR(S)")).

The claim language states "a first energy storage element that stores the transferred energy from the modulated carrier signal." '528 Patent claim 1. The Court accepts the parties' agreement that "element" can be constructed as "device." Weighing the evidence intrinsic and extrinsic to the '528 Patent, the Court concludes that "circuit" shall be included in the construction. Initially, the Court notes that the '528 Patent language supports Plaintiff's proposed construction. See '528 Patent 105:60–106:7, Fig. 68C). Likewise, the extrinsic evidence supports Plaintiff's proposed construction. See Pl. Br. at 25, Ex. M at "element" ("circuit component" and "[a] circuit, such as an AND gate, that can be taken as a unit because it performs a special function."), Ex. N at "element" ("A circuit or device performing some specific elementary data-processing function."). The Court relies on the words of the '528 Patent and the minimal extrinsic evidence needed to demonstrate that "energy storage element" is due to be constructed in accordance with

Plaintiff's proposed construction. The construction for the term "energy storage element" in the '528 Patent is as follows:

'528 Patent Term or Phrase	Construction
energy storage element	"energy storage circuit or device"

### iii. baseband signal portion

'528 Patent Term or Phrase	Plaintiff's Proposed Construction	Defendants' Proposed Construction
baseband signal portion	"part of the baseband signal"	Plain and ordinary meaning.

Plaintiff argues that the proper construction of "baseband signal portion" is "part of the baseband signal" because this is the plain and ordinary meaning. See Pl. Br. at 23. Plaintiff represents that the parties agree on the construction for "baseband signal" but dispute whether "portion" is part of the "baseband signal." See id. To support its proposed construction, Plaintiff provides that its expert Dr. Allen opined that the '528 Patent "distinguishes between the part/portion of baseband signal sent to the load from the switch (5710A) and the part/portion sent from the energy storage element (5710B) . . . ." Id. (citing Allen Decl. ¶ 53). Plaintiff also relies on the Oxford American Dictionary of Current English, 1999, American Heritage College Dictionary, 2000, and Webster's Ninth New Collegiate Dictionary, 1989. See id. at 23. Plaintiff argues that Defendants improperly assert a new construction for the "baseband signal portion" "to mean an entire baseband signal, such as a 'down-converted in-phase baseband signal' or a 'down-converted inverted in-phase baseband signal.'" Pl. Resp. Br. at 17 (citing Def. Br. at 18).

Defendants argue that “baseband signal portion” should be given its plain and ordinary meaning in the context of the claims. See Def. Br. at 16. Defendants make three arguments why the Court should reject Plaintiff’s proposed construction: 1) the term “obfuscates the nature of its proposed construction by plucking a short phrase out of context from four much longer limitations”; 2) Plaintiff “seeks to rewrite what the claimed ‘portion’ refers to”; and 3) the proposed construction attempts “to ignore the claim language immediately before the term.” Id. at 16–19. Defendants argue that Plaintiff ignores the claim language, which “uses a different reference point” than is used by Plaintiff’s proposed construction. See Def. Resp. Br. at 14–15 (citing ‘528 Patent 91:44–48, 176:61–179:53, Fig. 197; Razavi Decl. ¶ 40). In support, Defendants provide that the claim language makes clear that “portion” refers to: 1) “‘portion of said modulated carrier signal’”; 2) “a specific portion of the modulated carrier signal, i.e., the ‘down-converted in-phase baseband signal portion of the modulated carrier signal’”; or 3) “‘down-converted inverted in-phase baseband signal portion.’” Def. Br. at 17–18 (citing ‘528 Patent claim 1) (emphasis omitted).

Beginning with the claim language, claim 1 states in part:

a first energy storage element that stores the transferred energy from the modulated carrier signal and outputs a down-converted in-phase **baseband signal portion** of said modulated carrier signal; . . .

a second energy storage element that stores the transferred energy from the modulated carrier signal and outputs a down-converted inverted in-phase **baseband signal portion** of said modulated carrier signal; . . .

‘528 Patent claim 1 (emphasis added). The Court will not ignore the language following “portion” and will not rewrite the claim terms. See Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1383 (Fed. Cir. 2008) (“Courts cannot rewrite claim

language.” (internal citation omitted)). The claim language makes clear that “portion of” refers to the language following “portion of.” Ending the claim with “baseband signal” does not conclude what is being claimed but instead omits “of said modulated carrier signal.” Moreover, the specifications support that “portion” refers to one of the “modulated carrier signal.” See ‘528 Patent 176:62–64, 177:32–34, 178:27–29, 178:63–66; see also Razavi Decl. ¶¶ 40–41 (chart highlighting the ‘528 Patent claim and specification language; “the ‘portion’ referred to in the claims is a complete baseband signal that is a ‘portion of the modulated carrier signal,’ as the claims themselves state.”). The Court declines Plaintiff’s invitation to rewrite the claim terms to ignore the surrounding claim language.

The Court relies on the words of the Claim, the specification, and the minimal extrinsic evidence needed to demonstrate that “baseband signal portion” is due to be given its plain and ordinary meaning. The construction for the term “baseband signal portion” in the ‘528 Patent is as follows:

<b>‘528 Patent Term or Phrase</b>	<b>Construction</b>
baseband signal portion	Plain and ordinary meaning.

#### iv. outputs

<b>‘528 Patent Term or Phrase</b>	<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
outputs	“sends”	Plain and ordinary meaning.  Alternatively, “makes a signal available.”

Plaintiff argues that “outputs” should be given its plain and ordinary meaning—“sends.” Pl. Br. at 25. In support, Plaintiff provides that the Oxford American Dictionary of

Current American English, 1999, defines the verb “outputs” as to “put or send out.” Id. at 25–26, Ex. K at “output.” Plaintiff also argues that its proposed construction is “consistent with the ‘528 [P]atent, which describes that the energy storage element stores the energy/ baseband portions and, when the switch is open, the energy storage element drives (i.e. sends) such stored energy/baseband portions to the load . . . .” Id. at 26 (citing ‘528 Patent 91:51–54; Allen Decl. ¶ 61).

Defendants argue that “outputs” should be given its plain and ordinary meaning or alternately be constructed as “makes a signal available.” Def. Br. at 19. In support, Defendants provide that the plain meaning of “outputs” does not require anything be “sent.” Id. Defendants argue that Plaintiff seeks to avoid the Federal Circuit’s and District Court’s prior decisions involving other patents. See Def. Br. at 19–22 (citing ParkerVision,I, 621 Fed. App’x at 1019; ParkerVision v. Qualcomm, 969 F. Supp. 2d 1372, 1377 (M.D. Fla. 2013) (Dalton, J.)).

Defendants also argue that the claim language contradicts Plaintiff’s efforts to read “sending” or “discharge” into the word “output” because claim 1 does not include the discharge limitation while claim 8 does include the limitation. See Def. Br. at 20 (citing ‘528 Patent claims 1, 8); see also SRI Int’l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1122 (Fed. Cir. 1985) (“It is settled law that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement.” (internal citations omitted)); Phillips, 415 F.3d at 1314–15 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” (internal citation omitted)).

Defendants contend that the '528 Patent specifications include examples of “outputting” a signal without anything being “sent” or “discharged.” See Def. Br. at 21 (citing '528 Patent 61:45–52, 63:53–59, 70:43–52, Fig. 29C). Defendants argue that Plaintiff’s proposed construction excludes the only embodiment directed to the I/Q architecture of the asserted '528 Patent claims—Figures 197 and 201 and accompanying text. Id. at 21. Finally, Defendants maintain that Plaintiff’s construction conflicts with its representation to the USPTO regarding a different patent. Id. at 21–22.

Claim 1 of the '528 Patent language states that “a first energy storage element that stores the transferred energy from the modulated carrier signal and outputs a down-converted in-phase baseband signal portion of said modulated carrier signal[.]” The specification repeatedly refers to the capacitor as outputting a baseband signal and a device holding the voltage over time but does not refer to the capacitor “sending” a baseband signal. See Razavi Decl. ¶ 46; see also '528 Patent 61:45–52, 63:53–59, 70:43–52 (“The holding module [ ] substantially holds or maintains each under-sampled amplitude until a subsequent under-sample. [ ] The holding module [ ] outputs the under-sampled amplitudes as the down-converted signal [ ].”). The '528 Patent specification states that

[w]hen the load [ ] is a high impedance load, the holding capacitance [ ] does not significantly discharge between pulses [ ]. As a result, charge that is transferred to the holding capacitance [ ] during a pulse [ ] tends to “hold” the voltage value sampled constant at the terminal [ ] until the next pulse [ ].

'528 Patent 70:43–48.

Dr. Razavi opined that “the circuit could not ‘send’ a current from the capacitor to the op amp, because the current would have no place to go.” Razavi Decl. ¶ 47; see also

Razavi Decl. ¶ 43 (“To a person of ordinary skill in the art, the term ‘outputs’ requires no further definition – ‘outputs’ simply requires the energy storage device to provide the signal or make that signal available.”).<sup>2</sup> Plaintiff improperly seeks to equate “outputs” with “drive” and “send.” See Pl. Br. at 26 (relying on ‘528 Patent 91:51–54 (“Portions 5710B represent energy stored in a storage device continuing to drive the load.” (emphasis added))).

Relying on the language in the ‘528 Patent, the specification, and the minimal extrinsic evidence needed, the Court concludes that “outputs” is known by one skilled in the art. Evidence intrinsic and extrinsic to the ‘528 Patent supports that the term is due to be given its plain and ordinary meaning. The construction for the disputed term “outputs” in the ‘528 Patent is as follows:

<b>‘528 Patent Term or Phrase</b>	<b>Construction</b>
outputs	Plain and ordinary meaning.

**v. integrated**

<b>‘528 Patent Term or Phrase</b>	<b>Plaintiff’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
integrated	“accumulated”	Plain and ordinary meaning.

Plaintiff argues that the term “integrated” used in claim 1 of the ‘528 Patent should be constructed as “accumulated.” Pl. Br. at 21–22. In support, Plaintiff argues that this

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<sup>2</sup> Other than Dr. Razavi’s opinion, Defendants do not otherwise provide support for their proposed alternative construction, “makes a signal available.” See generally Def. Br. at 19 (“The plain and ordinary meaning of ‘outputs’ in this field means to ‘make a signal available.’” (citing Razavi Decl. ¶ 43)).

Court held that “[a]ccumulate is a close approximation to the plain meaning of integrate . . . .” See id. at 22 (citing ParkerVision, Inc. v. Qualcomm Inc., No. 3:11-CV-719-J-37TEM, 2013 WL 633077, at \*10 (M.D. Fla. Feb. 20, 2013) (Dalton, J.); The Oxford American Dictionary of Current English, 1999, at “integrate”).

Defendants argue that the term “integrated” should be given its plain and ordinary meaning because the term is unambiguous. See Def. Br. at 22–23. Defendants also argue that Plaintiff’s proposed construction conflicts with the specification, which treats accumulate and integrate as separate functions. See id. at 23 (citing ‘528 Patent 134:5–7 (“Capacitor 15306 integrates the output of switching module 15304 and accumulates the energy of the processed portions of the received carrier signal.” (emphasis added))). However, Defendants agree that the term should be given the same claim scope as in ParkerVision, Inc., 2013 WL 633077 at \*10, even though constructing “integrated” as “accumulated” results in minor redundancy. See Def. Resp. Br. at 17.

Claim 1 states in part:

wherein the portions of transferred energy from each of the first and second switch are integrated over time to accumulate said portions of transferred energy from which said down-converted in-phase baseband signal portion and said down-converted inverted in-phase baseband signal portion are derived . . . .

‘528 Patent claim 1 (emphasis added). While constructing “integrated” as “accumulated” results in redundancy, the Court accepts the parties’ agreement to give the claim term the same scope as in ParkerVision, Inc., 2013 WL 633077 at \*10. The construction for the term “integrated” in the ‘528 Patent is as follows:

<b>‘528 Patent Term or Phrase</b>	<b>Construction</b>
integrated	“accumulated”

## vi. derived

'528 Patent Term or Phrase	Plaintiff's Proposed Construction	Defendants' Proposed Construction
derived	"taken or received, especially from a specified source"	Plain and ordinary meaning.

Plaintiff argues that "derived" is used in claim 1 to describe that the portions of down-converted baseband signal output by the energy storage elements are derived from the portions of energy transferred by the switches to the energy storage elements. See Pl. Br. at 19 (citing '528 Patent claim 1). Plaintiff states that the parties agree that the term should be given its plain and ordinary meaning but proposes that the ordinary meaning is "taken or received, especially from a specified source." Id. at 19 (citing Allen Decl. ¶ 43). Plaintiff argues that its proposed construction is consistent with the '528 Patent because "[t]he '528 patent describes that, in the energy sampling embodiment, the energy transferred by the switch contains the down-converted baseband signal, and a portion of this energy/baseband signal transmitted by the switch is sent to and received by the energy storage element." Id. at 19–20 (citing '528 Patent, 26:36–46, 28:44–62, 69:51–58, 73:37–74:2, 91:28–30, 91:44–54, 115:5–32, Fig. 82A; Allen Decl. ¶ 44).

Plaintiff also argues that Defendants attempt to read "generates" into the '528 Patent, which is inconsistent with Defendants' proposed constructions in the ITC Investigations.<sup>3</sup> Id. at 15–17; see also Pl. Resp. Br. at 5–14 ("Defendants now propose that 'derived' be construed contrary to its ordinary meaning, to mean 'generated.'"); Def. Br. at 26 ("[T]he patentee used 'generated' and 'derived' to mean the same thing.").

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<sup>3</sup> Plaintiff states that "[t]he ITC Investigation was voluntarily terminated before the ITC reached any decision on Defendants' third attempt." Pl. Br. at 17.

Whether Defendants attempt to read “generates” into the ‘528 Patent is relevant because according to Plaintiff, “[t]hese ‘generate’ limitations were the basis of the Federal Circuit’s conclusion that [Plaintiff] had not proven infringement in” ParkerVision, I. See Pl. Br. at 15–16 (citing Ex. C at 6, 12). However, Plaintiff states that it remains “unclear whether or how Defendants are asserting that the ‘528 patent claims should include a ‘generates’ limitation, because Defendants have failed to identify or propose constructions for many disputed claim terms, including ‘derived.’” Id. at 17.

Defendants argue that “derived” need not be reworded based on a dictionary definition proposed by Plaintiff. See Def. Br. at 24. Rather, Defendants argue that “derived” should be given its plain and ordinary meaning based on the language in the ‘528 Patent in claim 1 and that the specification repeatedly explains that the energy in the storage device produces the down-converted signal. See id. at 24, 26 (citing ‘528 Patent, 106:49–51, 110:15–16 (“The charge stored by capacitor 11010 during successive samples forms down-converted signal 11012.”)). Defendants also argue that in previous litigation involving patents that track the ‘528 Patent language, the Office of Unfair Import Investigations proposed a plain and ordinary meaning for the term “derived.” See Def. Br. at 24–25; see also (Doc. 81-2 at Ex. 5 at 3–4 (“[C]onstruing the ‘energy storage element that stores the transferred energy from the modulated carrier signal and outputs a down-converted in-phase baseband signal portion of said modulated carrier signal’ limitations such that they specifically incorporate or restate the functional ‘stores’ ‘derive[s],’ and ‘outputs’ limitations is redundant . . . .”)); see also ParkerVision, I, 621 F. App’x at 1019 (“In the initial claim construction order, the district court adopted the plain and ordinary meaning of the term ‘generating.’”).

Beginning with the claim language itself, claim 1 states that “[a] system for frequency down-converting a modulated carrier signal to a baseband signal, comprising . . . transferred energy from which said down-converted in-phase baseband signal portion and said down-converted inverted in-phase baseband signal portion are derived . . . .” ‘528 Patent Claim 1. Dr. Razavi opined that “[f]rom the perspective of a person of skill in the art,” the terms “generated from” and “derived” “are [ ] not used in a technical way that would require rewording for a lay person to understand.” Razavi Decl. ¶ 55. Dr. Allen opined that Plaintiff’s proposed construction “is confirmed by contemporaneous documents . . . [such as] Webster’s Ninth New Collegiate Dictionary, 1989 . . . .” Pl. Br. at 20 (citing Allen Decl. ¶ 43). Plaintiff’s proposed construction is ambiguous in that it requires “a specified source” that is not identified in the proposed construction.

The Court relies on the words of the Claim, the specification, and the minimal extrinsic evidence needed to demonstrate that “derived” is known by one skilled in the art. Evidence intrinsic and extrinsic to the ‘528 Patent supports that the disputed term is due to be given its plain and ordinary meaning. The construction for the disputed term “derived” in the ‘528 Patent is as follows:

‘528 Patent Term or Phrase	Construction
derived	Plain and ordinary meaning.

**b. Claim construction of three phrases alleged to be indefinite**

Defendants argue that the following three phrases in the ‘528 Patent, two in claim 10 and one in claim 19, are invalid for indefiniteness:

'528 Patent Phrase	Plaintiff's Proposed Construction	Defendants' Proposed Construction
<b>Claim 10</b>		
energy of the modulated carrier signal is sampled and <u>differentially</u> applied to the respective energy storage element at the frequency of the respective control signal's aperture	"differentially applied": "transferred energy from an inverted version of the modulated carrier signal is sent to one of the claimed energy storage elements, and transferred energy from a noninverted version of the modulated carrier signal is sent to the other claimed energy storage element"	Indefinite
each respective energy storage element outputs, respectively, said <u>differential</u> down-converted in-phase baseband signal portion and said down-converted inverted in-phase baseband signal portion of said modulated carrier signal	<p>"said differential down-converted in-phase baseband signal portion": "the down-converted in-phase baseband signal portion of said modulated carrier signal that is output by the first energy storage element"</p> <p>"said down-converted inverted in-phase baseband signal portion of said modulated carrier signal": "the down-converted inverted in-phase baseband signal portion of said modulated carrier signal that is output by the second energy storage element"</p>	Indefinite
<b>Claim 19</b>		
a second differential amplifier circuit that combines said down-converted quadrature-phase baseband signal portion with said down-converted differential quadrature-phase baseband signal portion and outputs a second channel down-converted differential quadrature-phase baseband signal	"said downconverted differential quadrature-phase baseband signal portion": "the said down-converted inverted quadrature-phase baseband signal portion of the modulated carrier signal that is output by the fourth energy storage element"	Indefinite

See Def. Br. at 27 (chart).

In evaluating whether a phrase is invalid for indefiniteness, the Court evaluates "definiteness . . . from the perspective of someone skilled in the relevant art." Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 908 (2014) (internal citations omitted). The Court also considers that "claims are to be read in light of the patent's specification and

prosecution history.” Id. (internal citations omitted). Finally, the Court assesses definiteness by measuring “the viewpoint of a person skilled in [the] art at the time the patent was filed.” Id. (internal quotations and citations omitted). A patent's claims must be viewed in light of the specification and prosecution history to “inform those skilled in the art about the scope of the invention with reasonable certainty.” Id. at 910. Indeed, “[t]he definiteness requirement . . . mandates clarity, while recognizing that absolute precision is unattainable . . . [and] the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter.” Id. (internal quotations and citations omitted). A patent claim is presumed valid resulting in a heightened burden of proof to prove indefiniteness by clear and convincing evidence. See Microsoft Corp. v. I4I Ltd. P'ship, 564 U.S. 91, 97 (2011) (internal citations omitted).

Defendants contend that Plaintiff uses the term “differential” in inconsistent and nonsensical ways rendering Claims 10 and 19 indefinite. Def. Br. at 28. Regarding claim 10, Defendants argue that Plaintiff “seeks to construe the term ‘differential’ as two signals in one part of the claim and as one signal in another part of the same claim.” Id.; see also Razavi Decl. ¶¶ 58–61 (“A person of ordinary skill in the art would understand that the input is ‘differentially’ applied because it reaches the circuit in the form of differential signals, namely, on two wires.”). Defendants argue that claim 19 suffers from the same indefiniteness issue. Def. Br. at 28; see also Razavi Decl. ¶¶ 60–61 (“If the term ‘differential’ can be read as one signal or two signals even within the same claim, as [Plaintiff] [ ] proposes, a person of skill cannot know with reasonable certainty which way the term should be read in the context of a particular limitation.”). Moreover, Defendants

argue that Plaintiff's proposed construction "mistakenly includes the word 'sends,' which fails for the reasons discussed [ ] for the claim term 'outputs.'" Def. Br. at 29.

Plaintiff argues that Defendants failed to meet their burden of proving indefiniteness because any errors in Claims 10 and 19 are typographical errors and thus do not render the Claims indefinite. See Pl. Br. at 26–29. Plaintiff argues that claim 1 does not contain typographical errors, but claim 10, which "indirectly depends" on claim 1, contains "an obvious typographical error [by] insert[ing] the extraneous word 'differential' . . . ." See id. at 27–28. Likewise, regarding claim 19, Plaintiff argues that claim 1 does not contain typographical errors and "[j]ust as with the first and third energy storage elements, the fourth energy element was obviously intended to correspond to the second energy storage element, but with an 'inverted quadraturephase' type portion rather than an 'inverted in-phase' portion." See id. at 29. Plaintiff maintains that "an obvious typographical error substituted the word 'differential' for the word 'inverted' . . . ." Id.

Essentially, Plaintiff asks the Court to correct typographical errors. The Court may "correct a patent only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1353 (Fed. Cir. 2009) (quoting Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1357 (Fed. Cir. 2003)). In Ultimax, the court added a comma to a chemical formula because the plaintiff demonstrated that the claimed formula corresponded to no known mineral, and one of ordinary skill in the art would have known that the formula should contain a comma. See Ultimax, 587 F.3d at 1353. Distinguishing Ultimax, the court in Rembrandt found that the plaintiff failed to

demonstrate that “a skilled artisan would have read its proposed language into the claim” and declined to “substantively re-draft its claims.” Rembrandt Data Techs., LP v. AOL, LLC, 641 F.3d 1331, 1339 (Fed. Cir. 2011). The court in Rembrandt agreed with the district court that the proposed correction was “not minor, obvious, free from reasonable debate or evident from the prosecution history” and found the claims invalid. Id. at 1339–40 (internal quotation and citation omitted).

Plaintiff’s alleged typographical errors fail to demonstrate that one skilled in the art would have read Plaintiff’s proposed construction into Claims 10 and 19. Replacing some, but not all, “differential” terms with “inverted” is not a minor correction that is obvious and free from reasonable debate or evident from the prosecution history. Rather, the record supports that Plaintiff’s proposed construction would alter one type of signal for another type of signal. See Razavi Decl. ¶ 59 (“[D]ifferential output signals consist of two signals, but an inverted signal is just one signal.”). In light of Plaintiff’s use of the term “differential” in inconsistent and nonsensical ways, the Court finds that claims 10 and 19 are invalid for indefiniteness.

**c. Agreed upon claim constructions**

The parties agree on the constructions for the following claim terms and phrases found in the ‘528 Patent:

‘528 Patent Phrase	Agreed Upon Construction
switch	“an electronic device for opening and closing a circuit”
sampling aperture	“a period of time during which the claimed switch is in its closed (on) state, thereby reducing a continuous-time signal to a discrete-time signal”
modulated carrier signal	“electromagnetic signal at transmission frequency having at least one characteristic that has been modulated by a baseband signal”

See Claim. Constr. Chart at 3. The Court adopts the parties' agreed upon constructions for these terms.

#### **IV. Conclusion**

In light of the foregoing, the parties shall file a case management report. Moreover, in consideration of the procedural posture of this case, Defendant Apple's Motion for Summary Judgment Precluding ParkerVision from Obtaining a Double Recovery, or in the Alternative, Motion to Sever and Stay (Doc. 109) is due to be denied without prejudice to refile after the parties have had time to consider the Court's claim construction.

#### **ORDERED:**

1. The Court's construction of the claim terms or phrases are constructed as provided herein.
2. Defendant Apple's Motion for Summary Judgment Precluding ParkerVision from Obtaining a Double Recovery, or in the Alternative, Motion to Sever and Stay (Doc. 109) is **DENIED without prejudice**.
3. On or before **July 30, 2019**, the parties shall file a case management report.

**DONE** and **ORDERED** in Jacksonville, Florida this 15th day of July, 2019.



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**BRIAN J. DAVIS**  
United States District Judge

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Copies furnished to:  
Counsel of Record