ENDORSED ORDER granting 494 Motion for Summary Judgment. The Clerk is DIRECTED to enter judgment in favor of Defendant Qualcomm Inc. and against Plaintiff ParkerVision, Inc. The Clerk is DIRECTED to terminate any pending deadlines and close the file. Signed by Judge Paul G. Byron on 3/22/2022. (GNB) ctp (Entered: 03/22/2022)

As of March 23, 2022, PACER did not contain a publicly available document associated with this docket entry. The text of the docket entry is shown above.

ParkerVision, Inc. v. Qualcomm Incorporated et al
6-14-cv-00687 (MDFL), 3/22/2022, docket entry 686

UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
ORLANDO DIVISION

PARKERVISION, INC., *Plaintiff*, v. QUALCOMM INCORPORATED, QUALCOMM ATHEROS, INC., *Defendants*.	Case No. 6:14-cv-00687-Orl-40LRH

QUALCOMM'S MOTION FOR SUMMARY JUDGMENT OF
NONINFRINGEMENT AND INVALIDITY

ORAL ARGUMENT REQUESTED

PUBLIC/REDACTED DOCUMENT SOUGHT TO BE FILED UNDER SEAL

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Table of Exhibits

Exhibit	Cite	Description
Gardner Ex. 1	621 F. App'x 1009	*ParkerVision v. Qualcomm*, 621 F. App'x 1009, 1013-24 (Fed. Cir. 2015)
Gardner Ex. 2	627 F. App'x 921	*ParkerVision v. Qualcomm*, 627 F. App'x 921, 922-24 (Fed. Cir. 2015)
Razavi Ex. A	Razavi Opening Rpt.	Opening Expert Report Regarding Invalidity of Dr. Behzad Razavi, dated October 9, 2020
Razavi Ex. B	Razavi Reb. Rpt.	Expert Rebuttal Report of Dr. Behzad Razavi, dated November 23, 2020
Gardner Ex. 6	IPR2015-01831 POR	ParkerVision's Patent Owner's Response, dated May 24, 2016, in IPR2015-01831
Gardner Ex. 10	PV RX Opening Rpt.	Initial Expert Report of [ParkerVision's RX Expert],[1] dated October 9, 2020
Gardner Ex. 14	PV RX Reb. Rpt.	Rebuttal Expert Report of [ParkerVision's RX Expert], dated November 23, 2020
Gardner Ex. 20	Steer Opening Rpt.	Initial Expert Report of Dr. Michael Steer, dated October 9, 2020
Gardner Ex. 27	PV RX Depo.	Deposition transcript of [ParkerVision's RX Expert], dated December 7, 2020
Gardner Ex. 28	PV RX Depo.	Deposition transcript of [ParkerVision's RX Expert], dated December 8, 2020

[1] ParkerVision contends that the name of its RX technical expert who submitted ParkerVision's opening and rebuttal reports on the "receiver" patents (*i.e.*, the "RX" patents-in-suit) issues is confidential. (*E.g.*, Dkt. 464 (sealing motions), Dkt. 473; *cf.* Dkt. 470; Dkt. 479.) Defendants thus refer to that expert as ParkerVision's "RX" expert or "RX" technical expert. The "RX patents" refers to U.S. Patent Nos. 7,218,907 and 7,865,177, and the "TX patents" refers to U.S. Patent Nos. 6,091,940 and 7,039,372.

Exhibit	Cite	Description
Gardner Ex. 29	Bultman Depo.	Excerpts of deposition transcript of Michael Bultman, dated December 18, 2015
Gardner Ex. 30	Bultman Depo. Ex 8	Exhibit 8 to the deposition of Michael Bultman, dated December 18, 2015
Gardner Ex. 31	Cook Depo.	Excerpts of deposition transcript of Robert Cook, dated December 17, 2015
Gardner Ex. 32	Cook Depo. Ex. 7	Exhibit 7 to the deposition of Robert Cook, dated December 17, 2015
Gardner Ex. 34	Dunworth Depo.	Excerpts of the deposition transcript of Jeremy D. Dunworth, dated August 20, 2020
Gardner Ex. 35	Gudem Depo.	Excerpts of the deposition transcript of Prasad S. Gudem, dated August 12, 2020
Gardner Ex. 36	Ranjan Depo.	Excerpts of the deposition transcript of Mahim Ranjan, dated August 21, 2020
Gardner Ex. 38	5/24/2016 Jaffee Depo.	Excerpts of the deposition transcript of James Jaffee, dated May 24, 2016
Gardner Ex. 39	7/14/2016 Jaffee Depo.	Excerpts of the deposition transcript of James Jaffee, dated July 14, 2016
Gardner Ex. 42	Sorrells Depo.	Excerpts of the deposition transcript of David F. Sorrells, dated August 21, 2020
Gardner Ex. 43	1/28/21 Steer Depo.	Excerpts of deposition transcript of Michael B. Steer, dated January 28, 2021
Gardner Ex. 46	12/9/2020 Steer Depo.	Excerpts of the deposition transcript of Michael B. Steer, dated December 9, 2020

Exhibit	Cite	Description
Gardner Ex. 48	Razavi Depo.	Excerpts of the deposition transcript of Behzad Razavi, dated December 10, 2020
Gardner Ex. 50	10/10/2013 Trial Tr.	Excerpts from the October 10, 2013 *ParkerVision I* Trial Transcript
Gardner Ex. 54	'372 Infring. Chart, Ex. 5-A	ParkerVision's Exhibit 5-A, U.S. Patent No. 7,039,372, Infringement Contentions, dated January 16, 2015
Gardner Ex. 55	June 26, 2020 Kamprath Ltr.	Letter from counsel for ParkerVision to counsel for Defendants, dated June 26, 2020
Gardner Ex. 56	PV RFA No. 160	Excerpts of Plaintiff ParkerVision's Objections and Responses to Defendants' Joint Second Set of Requests for Admission, dated September 14, 2020
Gardner Ex. 57	QC 14th Supp. Rog. No. 6 Resp.	Qualcomm's Fourteenth Supplemental Responses and Objections to ParkerVision's First Set of Common Interrogatories (Nos. 1-8), dated September 14, 2020
Gardner Ex.81	Steer Ex. 4	Document marked as Exhibit 4 at the deposition of Michael B. Steer, dated December 9, 2020

I. INTRODUCTION

This case is not a blank slate. Almost a decade ago, ParkerVision embarked on a serial and vexatious litigation campaign against Qualcomm. During that time, ParkerVision's patents have been dropped, invalidated, and found not infringed. The remaining four patents should suffer the same fate.

First, as ParkerVision's experts and this Court has now concluded, all of the receiver claims contain the same requirement that the Federal Circuit found lacking in Qualcomm's products. Moreover, ParkerVision has now admitted that [redacted] Thus, the basis for this Court's denial of Qualcomm's previous collateral estoppel motion is no longer in dispute and collateral estoppel bars ParkerVision's attempt to relitigate *ParkerVision I*. Even if collateral estoppel does not apply, the same reasoning can be applied to a finding of noninfringement. Multiple asserted receiver claims are also indefinite and therefore invalid.

Second, ParkerVision's transmitter claims all require a "harmonically rich signal." [redacted] ParkerVision has also failed to prove key limitations of the '372 patent claims.

Finally, ParkerVision's willfulness and inducement claims cannot survive summary judgment. Qualcomm did not have the necessary subjective intent.

II. LEGAL STANDARD

Courts must "grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). Conclusory statements are "insufficient" to raise a genuine dispute. *Johnston v. IVAC*, 885 F.2d 1574, 1578 (Fed. Cir. 1989).

III. NON-INFRINGEMENT OF '907, '177, AND '940 PATENTS

A. Statement of Key Facts As to Which There is No Genuine Dispute

1. ParkerVision had a full and fair opportunity to litigate in *ParkerVision I* whether Qualcomm's products generate the baseband signal using energy transferred to an energy storage device (capacitor); this issue was actually litigated in *ParkerVision I*; and this issue was a critical and necessary part of the final judgment in *ParkerVision I*. (Dkt. 318; Dkt. 330 at 1-2.)

2. In *ParkerVision I*, final judgment of noninfringement was entered in Qualcomm's favor for all accused products. Gardner Exs. 1, 2.

3. The Qualcomm products found noninfringing in *ParkerVision I* included four products ([redacted] ParkerVision is accusing of infringement in this case. *ParkerVision v. Qualcomm*, 27 F.Supp.3d 1266, 1278-79 (M.D. Fla. 2014); June 26, 2020 Kamprath Ltr., Gardner Ex. 55, at 1.

4. ParkerVision's "energy sampling" alleged invention at issue in *ParkerVision I* uses an energy storage device (e.g., a capacitor) to downconvert a high-frequency signal into a low-frequency baseband signal. 621 F. App'x at 1011, Gardner Ex. 1.

5. ParkerVision's "energy sampling" (or "energy transfer sampling") alleged invention for the Receiver Claims[2] uses an energy storage device (e.g., a capacitor) to downconvert a high-frequency signal into a low-frequency baseband signal. PV RX Reb. Rpt., ¶ 33 Gardner Ex. 14; 12/7/20 PV RX Depo. 210:22-211:16, 219:20-25 Gardner Ex. 27.

6. [redacted] *E.g.*, PV RX Opening Rpt., ¶¶ 234, 431, 502, Gardner Ex. 10.

7. [redacted]. 621 F. App'x at 1013-16; 12/7/20 PV RX Depo. 57:2-19.

8. ParkerVision's expert is not offering any opinions about the differences or similarities between the Receiver Claims and the *ParkerVision I* claims. 12/7/20 PV RX Depo. 225:12-226:14, 116:4-25; 1/28/21 Steer Depo. 237:20-238:7, Gardner Ex. 43.

B. ParkerVision is Precluded from Asserting its Receiver Claims Based on Collateral Estoppel from *ParkerVision I*

ParkerVision I established that the accused Qualcomm products generated the baseband signal at the output of the double-balanced mixers. 621 F. App'x 1009 at 1013-16.[3] The courts concluded that none of the accused Qualcomm products

[2] Receiver Claims refers to claims 1, 2, 3, 5, 7, and 10 of U.S. Patent No. 7,865,177; claims 1 and 10 of U.S. Patent No. 7,218,907; and claims 24 and 331 of U.S. Patent No. 6,091,940.

[3] "[ParkerVision's expert] admitted that the **double-balanced mixer creates the baseband current** in the accused Qualcomm products and that the electric current upstream from the identified capacitors

infringed, because a "baseband current already exists before the current from the carrier signal reaches the capacitors." 621 F. App'x at 1013, 1016.

During fact discovery, the Court ordered Qualcomm to file an early motion on the preclusive effect of *ParkerVision I*. (Dkt. 309; Dkt. 300 at 6.) Based on the record at the time (*i.e.*, before Rule 30(b)(6) technical depositions, the claim construction order, and expert discovery) the Court concluded that (1) Qualcomm had failed to show that the "[redacted]," and (2) PV's RX Expert declaration created a "material issue" regarding claim scope. (Dkt. 348 at 13, 18.) Fact and expert discovery have now closed; the claims have been construed. The record confirms that there is no genuine dispute remaining. ParkerVision is precluded from relitigating its Receiver Claims. *Soverain Software v. Victoria's Secret Direct Brand Mgmt.*, 778 F.3d 1311, 1319 (Fed. Cir. 2015); *Aspex Eyewear v. Zenni Optical*, 713 F.3d 1377, 1381-82 (Fed. Cir. 2013).

1. Like the *ParkerVision I* Patents, The Asserted Receiver Claims Require Producing a Baseband Signal via Energy from the Carrier Signal Stored in an Energy Storage Device

In *ParkerVision I*, the Federal Circuit affirmed that ParkerVision's "energy transfer" or "energy transfer sampling" patents require generating a baseband signal using energy from the carrier signal stored in an energy storage device (capacitor).

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in those products is already 'the baseband.' In other words, the accused products do not require an electric current from the carrier signal to go in and out of the storage capacitors in order to create the baseband signal; instead, the baseband current is created by the double-balanced mixer **before** the current reaches the capacitors." *ParkerVision I*, 621 F. App'x at 1016 (emphasis added).

ParkerVision I, 621 F. App'x at 1016. The Federal Circuit further affirmed that the Qualcomm devices do not infringe the "generating limitation" because the baseband signal exists at the output of the double-balanced mixers, and any capacitors ParkerVision accused were downstream of the double-balanced mixers and, thus, not involved in creating the baseband signal. *Id.*

In this case, Qualcomm has presented detailed evidence, including expert testimony from Dr. Razavi, that the Receiver Claims have the same requirements as the *ParkerVision I* claims, including the "generating limitation." (Razavi Ex. A, Razavi Opening Rpt., ¶¶ 565-584, 632-634, Razavi Ex. B; Razavi Reb. Rpt., ¶¶ 805-829.) Dr. Razavi explicitly addressed the Court's construction for the "matched filtering/correlating module" term in the '177 claims, and showed how the Court's construction requires producing the baseband signal using energy stored (or "accumulated") in an energy storage device, just like the claims in *ParkerVision I*. (*Id.*, ¶¶ 572-584; Razavi Reb. Rpt., ¶¶ 339, 344.) And for the '907 claims—which recite "providing, between the periodic couplings, energy from the energy storage device to the load…whereby the energy provided to the load forms a down-converted signal"—

[redacted] (Razavi Opening Rpt., ¶¶ 565-571.)[4]

[4] To the extent ParkerVision asserts that "energy provided to the load forms a down-converted signal" has some other meaning such that collateral estoppel does not apply, ParkerVision has provided no evidence from the specification to support any other meaning. Accordingly, to the extent

ParkerVision has not disputed Dr. Razavi's analysis nor provided any evidence [redacted] ParkerVision's experts did not provide expert reports comparing claims or elements from the *ParkerVision I* patents to the Receiver Claims. In fact, ParkerVision's experts expressly testified that they are not offering *any* opinion as to the differences or similarities between the claims here and in *ParkerVision I*. (12/7/2020 PV RX Depo. 225:12-226:14, 116:4-25, Gardner Ex. 27; 1/28/2021 Steer Depo. 237:20-238:7, Gardner Ex. 43.)

While ParkerVision's expert reports avoided directly addressing the overlap between the present claims and the *ParkerVision I* claims, deposition testimony confirmed Dr. Razavi's opinion that the Receiver Claims have the same requirements as the *ParkerVision I* claims. For example, PV RX Expert and Dr. Steer were presented with the exact language the Federal Circuit outlined in its *ParkerVision I* opinion to describe the requirements of the "generating limitation":

> The generating limitation in each of the asserted claims requires that the accused products **produce a low-frequency baseband signal using energy that has been transferred from a high-frequency carrier signal into a storage medium**, such as a capacitor or set of capacitors.

ParkerVision, 621 F. App'x at 1013 (emphasis added). PV's RX Expert admitted that the Receiver Claims have the same requirements as the "generating limitation." (12/7/2020 PV RX Depo. 210:22-211:16 and 200:3-21 ('177 patent); *id*. at 211:6-16

ParkerVision argues for some other meaning, Qualcomm is entitled to summary judgment that the asserted claims of the '907 patent are invalid under 35 U.S.C. § 112.

and 205:12-206:7 ('907 patent); and *id.* at 216:21-219:25 ('940 patent).) ParkerVision's RX expert confirmed that the language used by the Federal Circuit (bolded) to describe the "generating limitation" in *ParkerVision I* applies to the '177 patent:

[redacted]

(12/7/2020 PV RX Depo. 210:22-211:5 (emphasis added; obj. omitted).) Dr. Steer confirmed the same requirements for the '177 patent claims. (1/28/2021 Steer Depo. 63:14-64:1, 74:18-24 ('940 patent), Gardner Ex. 43.) Based on ParkerVision's expert's testimony, there is no dispute that the same "generating limitation" requirements found to be absent from the accused Qualcomm devices in *ParkerVision I* are also requirements of the asserted receiver claims in this case.

2. ParkerVision Now Alleges that All of Qualcomm's Products Operate the Same Way

ParkerVision is accusing [redacted]. *ParkerVision I*, 27 F.Supp.3d at 1271; *ParkerVision*, 621 F. App'x at 1012-16. Despite raising the prospect of differences in Qualcomm's early summary judgment motion, ParkerVision's experts have ended up [redacted]

All products use the [redacted].[5] (Razavi Reb. Rpt., ¶¶ 48-94.)

In his report and deposition, ParkerVision's expert confirms that he is using [redacted] (PV RX Opening Rpt., ¶¶ 234, 431, (emphasis added), Gardner Ex. 10; 12/7/2020 PV RX Depo. 226:15-19.) PV's RX Expert explained that [redacted] (PV's RX Opening Rpt., ¶¶ 233, 430, 501, Gardner Ex. 10.) It is undisputed that ParkerVision's infringement theory rests on a contention that all accused products function the same.

The Receiver Claims undisputedly require the "generating limitation" the *ParkerVision I* court found not infringed by Qualcomm's receiver devices. [redacted] Therefore, there is no genuine dispute that Qualcomm is entitled to summary judgment of noninfringement on the basis of collateral estoppel. *Phil-Insul Corp. v. Airlite Plastics Co.*, 854 F.3d 1344, 1358 (Fed. Cir. 2017) (affirming summary judgment of noninfringement based on collateral estoppel

[5] [redacted]

"given [plaintiff's] concession that the accused products in this case are substantially the same as those at issue" in the previous case).

C. The Accused Devices Do Not Infringe

Even if the Court finds that the legal requirements of collateral estoppel have not been met, Qualcomm is entitled to summary judgment of noninfringement for the Receiver Claims. As outlined above, the undisputed facts show that [redacted] See Section III.B.1, above. There is also no genuine dispute that the [redacted] which is upstream of any of the accused capacitors (the alleged "energy storage devices").[6] Since the [redacted]. Summary judgment is appropriate on this basis alone.

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[6] [redacted] Likewise, ParkerVision's expert in *ParkerVision I*—also confirmed that double-balanced mixers in the accused devices produce the baseband signal. (Gardner Ex. 50, 10/10/2013 Trial (Prucnal) Tr. at 177:15-19, 185:20-25, 187:3-6, etc.; *ParkerVision*, 621 F. App'x at 1016.)

IV. MOTION FOR SUMMARY JUDGMENT OF INVALIDITY OF '177 PATENT

Under 35 U.S.C. § 112, a patent's claims, viewed in light of the specification and prosecution history, must inform those skilled in the art about the scope of the invention with reasonable certainty. *Nautilus v. Biosig Instruments*, 572 U.S. 898, 910 (2014). Summary judgment of invalidity of all asserted '177 claims is required.

First, according to the construction ParkerVision proposed, the construction of "matched filtering/correlating module" requires "producing a downconverted signal with enhanced signal-to-noise power ratio." The '177 patent, however, provides no way to measure whether or not a signal-to-noise power ratio is "enhanced." The only discussion in the '177 patent of an "enhanced" signal-to-noise ratio states "[t]his embodiment of the present invention produces enhanced (and in some cases the best possible) signal-to-noise ration (SNR)[.]" ('177 patent, 131:10-13; Dkt. 381 at 23-24.) But "best possible" is not an objective standard according to which claim scope can be determined. The "best possible" signal-to-noise ratio may change over time as technology develops, and it may vary based on a variety of design trade-offs. (Razavi Opening Rpt., ¶ 561.) Accordingly, the '177 patent does not provide an objective standard for determining whether a signal is "enhanced."[7] *Halliburton Energy Servs. v. M-I*, 514 F.3d 1244, 1254 (Fed. Cir. 2008).

[7] To the extent the Court were to determine that "enhanced signal-to-noise power ratio" is equivalent to "the best possible" signal-to-noise power ratio, Qualcomm is entitled to summary judgment of noninfringement, since ParkerVision has failed to provide any evidence that any of Qualcomm's devices produce signals with the "best possible" signal-to-noise power ratio.

Second, the limitation "linear time-variant circuitry," included in the Court's construction of "matched filtering/correlating module," is either not infringed or indefinite. The Court found that a matched filtering/correlating module must be linear circuitry, and not just "substantially linear" circuitry. (Dkt. 381 at 20-21.) Faced with the Court's construction, and the undisputed fact that none of the accused devices are completely linear,[8] ParkerVision has once again returned to arguing—based on the unsupported *ipse dixit* of its expert—that the accused devices are linear enough, without ever identifying any standard for evaluation. ParkerVision's interpretation of the Court's construction simply recreates the indefiniteness issue raised by ParkerVision's original "substantially linear" construction. The lack of any objective standard for what is, and what is not, "linear" renders the claims indefinite. *Berkheimer v. HP*, 881 F. 3d 1360, 1364 (Fed. Cir. 2018).

Third, the Court's construction for "matched filtering/correlating module" includes the requirement that a switch is closed for a "non-negligible aperture." The Court provided the construction based on passages from the '177 specification that all state that the length of the windowing function is equal to "an approximate half cycle of the received carrier signal." (Dkt. 381 at 22.) ParkerVision, however, has ignored the Court's order and sought to broaden "non-negligible aperture" to apertures other

[8] Gardner Ex. 42, 08/21/2020 Sorrells Depo. 48:9-50:6 ("[T]here's probably a constraint in most practical circuits that allow you to say that they're not perfectly linear as defined by a perfect line with a perfect slope in the mathematical realm or theoretical realm."); Gardner Ex. 48, 12/10/2020 Razavi Depo. 53:7-56:4.

than "an approximate half cycle of the received carrier signal."[9] ParkerVision's position renders the claims indefinite. Qualcomm thus requests the Court either (i) confirm that a "non-negligible aperture" is "an approximate half cycle of the received carrier signal" for the reasons explained in the Court's claim construction order, or (ii) hold the claims indefinite.

V. NON-INFRINGEMENT OF '940 AND '372 PATENTS

Each Transmitter Claim[10] requires a harmonically rich signal, which the Court construed as a signal with a plurality (i.e., two or more) of harmonics.[11] (Dkt. 381 at 9.) [redacted]. This is contrary to common sense, claim language, the patents' disclosure, the parties' arguments to the Patent Office, and the understanding of the named inventors.

A. Statement of Key Facts As to Which There is No Genuine Dispute

1. [redacted]

[9] ParkerVision is arguing that a 25% sampling aperture (or an approximate one quarter cycle of the receive carrier signal), is a non-negligible aperture. (PV RX Opening Rpt., ¶ 327.)

[10] '940 patent, claims 22, 25; '372 patent, claims 99, 107, 126.

[11] All asserted independent claims explicitly recite "harmonically rich signal", except '940 patent claim 25, which requires a "signal with a plurality of harmonics." Because this is the construction of "harmonically rich signal," we use "harmonically rich signal" as short hand to refer to both ways of reciting the limitation.

[12] The LO frequency is also known as the "carrier" frequency.

(Gardner Ex. 46, 12/9/2020 Steer Depo. 90:7-91:2; Gardner Ex. 20, Steer Opening Rpt., ¶¶ 147, 170-171.)

2.

(12/9/2020 Steer Depo. 156:6-158:12; Razavi Reb. Rpt., ¶ 467.)

B. ParkerVision's Theory Conflicts with the Claim Construction

For the "signals" required by the Transmitter Claims, ParkerVision's expert argues that

(12/9/2020 Steer Depo. 90:7-91:2.)[13]

It is undisputed that

[13] (*Id.*, 91:3-92:14.)

using concepts "well known in the field"); 12/9/2020 Steer Depo. 156:17-157:14 (testifying that)[15].) ParkerVision fails to cite any evidence . (12/9/2020 Steer

[14] .

[15]

Depo. 156:6-158:12; *see also id.*, 93:3-16 ([redacted]).)

Qualcomm's products [redacted]

[redacted]

[redacted]. (Steer Opening Rpt., p. 139 n.13 (citing testimony from Qualcomm engineers Jim Jaffee (5/24/2016) Depo. 357:8-13 ("[redacted]") and Mahim Ranjan Depo. 105:13-25 ([redacted]

[redacted] (135:11-136:3)).)

1. A "Frequency" is only a "Harmonic" in a Harmonically Rich Signal if There is a Signal at that Frequency

ParkerVision wants to argue that a "harmonic" in "harmonically rich signal" does not have to contain a signal, but can constitute only a frequency value, i.e., a number. However, a frequency at which there is no signal is not a "harmonic" in a harmonically rich signal. The claims, the patent, ParkerVision's representations to the patent office, and the inventor testimony all require that a harmonically rich signal actually exist, *i.e.*, has frequency content, at a harmonic.

First, the plain reading of the claims require a harmonically rich "signal", with harmonics, which can be frequencies or tones under the court's construction. (Dkt. 381 at 10.) The plain reading of the construction requires the harmonic must exist in the signal itself. Under ParkerVision's view, the term "signal" would be read out of the claim because a "harmonic" could be any numerical frequency. However, the Court did not construe harmonic in isolation, but rather in the larger phrase "harmonically rich signal." A harmonic frequency or tone is still part of a signal. Nothing in the Court's construction reads out the term "signal" in the claims.

Second, the specifications consistently describe a "frequency" in a "harmonic" as a frequency at which the signal exists, not a mere numerical value at which there is no signal. For example, a "harmonically rich signal" "has sinusoidal components (harmonics) at frequencies that are integer multiples of the fundamental frequency,"

i.e., that the harmonically rich signal must have frequency content ("sinusoidal components") at the harmonic frequencies. ('940 patent, 18:35-40.) The patent also explains that "unwanted frequencies" of the harmonically rich signal "are removed" through filtering. (*Id.*, 18:61-65, 20:34-41, 22:26-32, 24:19-22, 55:2-8, 56:1-6.) If a frequency is merely a number at which there is no signal, how can it be removed? Even the term "[u]p-conversion" is defined as "[a] process for performing frequency translation in which the final frequency is higher than the initial frequency." (*Id.,* 9:40-42.) The "final frequency" and the "initial frequency" refer to ***signals at those frequencies***. The patent's use of the term "frequency" would be nonsensical if the word merely meant a mathematical number, not the frequency of a signal. *Agilent v. Affymetrix*, 567 F. 3d 1366, 1377-78 (Fed. Cir. 2009) (reversing construction inconsistent with the specification and that would read out requirements).

Third, ParkerVision's representations to the Patent Office confirm that a harmonically rich signal only exists when the harmonics are at frequencies where the signal has content. Qualcomm sought to invalidate the '940 claims in *inter partes* review (IPR) proceedings. In response to Qualcomm's invalidity arguments, ParkerVision argued that, when using a 0.1 MHz baseband signal and a 1.0 MHz LO signal, the signal generated would not be harmonically rich:

> Thus, the frequency content of the combined output signal … would be 0.9 MHz (the fundamental frequency), 3.1 MHz, 4.9 MHz, 7.1 MHz, 8.9 MHz, 11.1 MHz …. Critically, none of those calculated frequencies is an integer multiple ("harmonic") of the LO signal. In addition, only one (0.9 MHz) is an integer multiple ("harmonic") of the fundamental

> frequency of the purported periodic signal (0.9 MHz). This purported "periodic signal" thus does not have a "plurality of harmonics," ….

(Gardner Ex. 6, IPR2015-01831 POR, at 30 (QCPVII02911139).) Thus, ParkerVision argued that a "harmonic" only exists at a frequency where a signal has "frequency content." ParkerVision cannot now take an inconsistent position.

Fourth, the ParkerVision inventors of the '372 and '940 patents repeatedly explained that in the invention, the signal exists at exact integer multiples of the LO frequency, not at sum and difference frequencies, as in the accused products. For example, inventor Mr. Bultman testified:

(Gardner Ex. 29, 12/18/2015 Bultman Depo. 118:25-120:16; 116:2-17, 191:24-192:19, 194:24-198:11 and Ex. 8; Gardner Ex. 31, 12/17/2015 Cook Depo. 58:1-16; 51:6-52:17, 55:13-24, 96:17-22, 136:7-137:4, 218:14-21 and Ex. 7, Gardner Ex. 32.)

C. The Court Should Reject Dr. Steer's Arguments that a Signal Need Not Exist at a Harmonic "Frequency"

Dr. Steer argued during deposition that a harmonic "frequency" only requires a "numerical value" and "does not require a signal." (12/9/2020 Steer Depo. 87:9-11; *see also id.* 89:5-6, 175:3-6, 70:15-25 (distinguishing "frequency" from "tone" in the Court's construction).) Dr. Steer testified that the signal in the example below is a

harmonically rich [redacted] with harmonics at 1 [redacted] (the LO frequency), 3 [redacted] and 5 MHz, even though there is no signal at those frequencies. (12/9/2020 Steer Depo. 94:5-96:16 and Ex. 4, Gardner Ex. 81.) Untethering a "harmonic" from an actual signal contradicts the patents as discussed above and leads to the nonsensical result that any numerical frequency can be called a harmonic.

Dr. Steer also argued that a harmonic merely requires that its center frequency is at integer multiples, regardless of whether there is a signal at that frequency. (12/9/2020 Steer Depo. 88:17-22; *Id.,* 94:5-96:20, Ex. 4.) But Dr. Steer's view is based on a misreading of the underlined language from the '940 patent below:

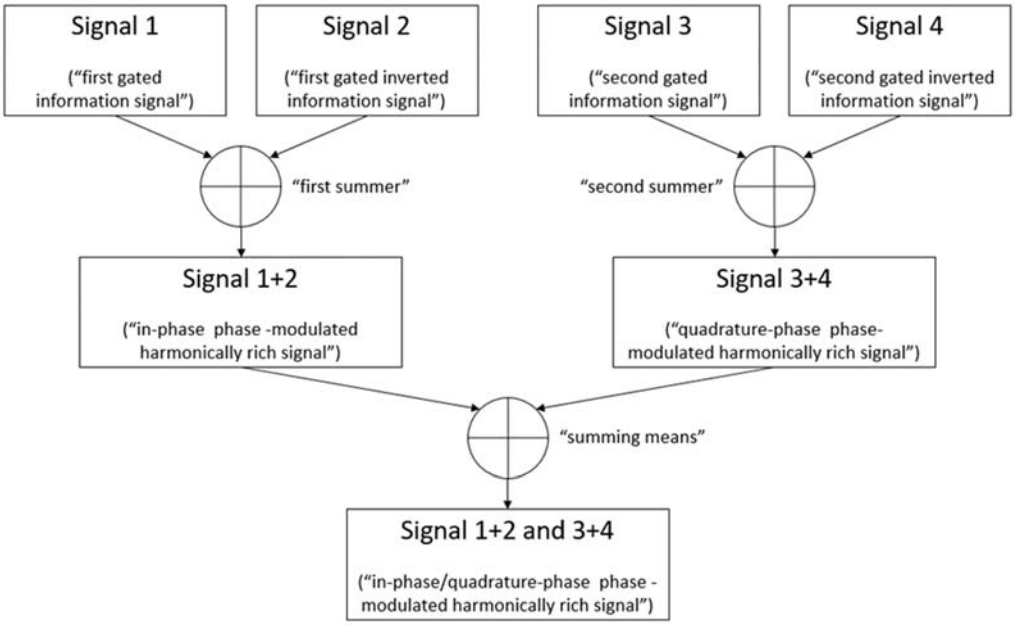
> When describing the frequency of certain signals, reference is often made herein to a specific value. It is understood by those skilled in the relevant art(s) that this reference is to the nominal center frequency of the signal, and that the actual signal may vary in frequency above and below this nominal center frequency based on the desired modulation technique being used in the circuit. As an example to be used herein, if the frequency of the desired transmission signal is 910 MHz, and it is to be used in an FM mode where, for example, the frequency range of the modulation is 40 KHz, the actual frequency of the signal will vary ±20 KHz around the nominal center frequency as a function of the information being transmitted. That is, the frequency of the desired transmission signal will actually range between 909.980 MHz and 910.020 MHz.

('940, 62:57-63:9 (signals in Fig. 57A); Steer Opening Rpt., ¶ 292.) This passage merely states that if the patent refers to a signal by its nominal center frequency, the actual signal can span above and below that nominal center frequency. The passage says nothing about a center frequency with no signal being a claimed harmonic.

Dr. Steer's construction of harmonic is inconsistent with the claims, the patent, and the inventor testimony, and summary judgment of noninfringement is warranted. If summary judgment is denied, a clarifying construction is required that a harmonic in a harmonically rich signal is a frequency at which the signal has frequency content. *Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1316, 1319-20 (Fed. Cir. 2016) (error in failing to resolve claim scope dispute), *cert. denied*, 137 S.Ct. 640 (2017); *O2 Micro Int'l v. Beyond Innovation Tech.*, 521 F.3d 1351, 1361-62 (Fed. Cir. 2008).

VI. MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT OF ALL ASSERTED CLAIMS OF U.S. PATENT NO. 7,039,372

The '372 patent undisputedly requires summing signals in a particular order. Claims 99 and 126 require summing four signals, as shown in the diagram below.



(*E.g.*, '372, cls. 99, 100, 107, 126; Razavi Reb. Rpt., ¶¶ 664-667, 673, 679-680[16]; Steer

[16] Qualcomm's expert refers to the four signals to be summed as: $Signal_1$ (0° signal), $Signal_2$ (180° signal), $Signal_3$ (90° signal), and $Signal_4$ (270° signal). (Razavi Reb. Rpt., ¶ 681, pp.386-387.)

Reb. Rpt., pp. 118-19.) Claim 107 requires only one of the first or second summer. (Steer Opening Rpt., ¶ 266.) As there is no evidence that the accused products sum in the required order, summary judgment is required.

A. Statement of Key Facts As to Which There is No Genuine Dispute

B. Summary Judgment of Non-infringement is Warranted

First, because Dr. Steer's opinions are fundamentally flawed (see *Daubert* motion), ParkerVision has a failure of proof as to the summing/combining limitations. Summary judgment is appropriate for all claims of the '372 patent. ***Second***, because

Dr. Razavi's opinions regarding these products is undisputed by any reliable evidence, summary judgment of non-infringement is appropriate for [redacted] on claims 99, 100, and 126, and for [redacted] on claims 99, 100, 107, and 126. (Razavi Reb. Rpt., pp. 383-92 ([redacted]); *id.*, pp. 392-94 ([redacted]).)[17]

VII. NON-INFRINGEMENT OF CLAIM 107 OF THE '372 PATENT

Claim 107 of the '372 patent requires "gating … using a first reference potential" and "gating … using a second reference potential." The accused products do not have the claimed "reference potential."

A. Statement of Key Facts As to Which There is No Genuine Dispute

1. In every embodiment in the '372 patent, the "reference potential" is a fixed voltage on the opposite side of the switch from the baseband input and switch output, and is not the control signal. (Razavi Reb. Rpt., pp. 330-36.)

2. [redacted] (Razavi Reb. Rpt., ¶¶ 569, 581.)

B. Summary Judgment of Claim 107 is Appropriate

First, summary judgment is warranted, because ParkerVision cannot rely on a new theory not disclosed in its infringement contentions. (*Daubert* motion.) If ParkerVision attempts to rely on its initial theory, the only expert testimony on the

[17] Indeed, since Dr. Steer failed to even review the necessary layouts, he cannot set forth the factual detail necessary to avoid summary judgment. *Intellectual Sci. & Tech., Inc. v. Sony Elecs., Inc.*, 589 F.3d 1179, 1183 (Fed. Cir. 2009).

record is that of Dr. Razavi, [redacted]. (Razavi Reb. Rpt., ¶¶ 569, 581.)

Second, ParkerVision's untimely theory fails because it depends on a claim construction of "reference potential" to mean a "control signal."[18] However, the plain meaning of "reference potential" refers to a fixed voltage used as a reference by other portions of the circuit—not a signal (such as a control signal) that varies over time. (Razavi Reb. Rpt., ¶¶ 569-572, 582; Steer Opening Rpt., ¶ 264 & n.12.) The claims show that a "reference potential" and "control signal" are distinct and different. (Razavi Reb. Rpt., ¶¶ 577-578; '372 patent, cls. 1, 8, 16 and others (distinguishing a "control signal" at a control input, from a "reference potential" at a "second input" of a switch).) Moreover, the '372 specification consistently distinguishes between a "reference potential" (a fixed voltage at the opposite side of the switch from the information signal input and the output) and a "control signal" (at a control input to the switch).[19] (Razavi Reb. Rpt., pp. 330-36.) Even ParkerVision's contentions recognized that the control signal and the first/second reference potentials are different signals. (Gardner Ex. 54, '372 Infring. Chart, Ex. 5-A at 153 (separately labeling first reference potential and control signal).) Dr. Steer's new theory is

[18] If the Court permits Dr. Steer's new theory, Qualcomm's and ParkerVision's experts will be relying on conflicting opinions regarding the construction of the term "reference potential," which requires the court's resolution. *O2 Micro*, 521 F.3d at 1361-62.

[19] *Ruckus Wireless v. Innovative Wireless Sols.*, 824 F.3d 999, 1002-04 (Fed. Cir. 2016) (holding that the term "communications path" did not include wireless communications where every embodiment in the specification uses a telephone wire). *Bd. of Regents Univ. Tex. v. BENQ Am.*, 533 F.3d 1362, 1368 (Fed. Cir. 2008) (construing the claim term "syllabic element" to exclude multi-syllabic words where the specification "repeatedly distinguishes between a 'word' and a 'syllabic element'").

unsupported by, and inconsistent with, the proper construction of "reference potential," and therefore fails.

VIII. SUMMARY JUDGMENT OF NO WILLFULNESS OR INDUCED INFRINGEMENT

The standard for proving willfulness and induced infringement is high, requiring among other things, proof of specific intent to infringe the patents-in-suit. Willfulness is generally reserved for egregious behavior "characteristic of a pirate," requiring proof of "wanton, malicious, [and] bad faith" behavior. *Halo Elecs. v. Pulse Elecs.*, 136 S.Ct. 1923, 1932 (2016); *SRI Int'l v. Cisco Sys.*, 930 F.3d 1295, 1308 (Fed. Cir. 2019), *cert. denied*, *Cisco Sys. v. SRI Int'l*, 140 S.Ct. 1108 (2020); *Intellectual Ventures I v. Symantec*, 234 F.Supp.3d 601, 612 (D. Del. 2017) (granting MSJ of no willfulness). To prove inducement, ParkerVision must show Qualcomm "knew the induced acts were infringing." *Commil USA v. Cisco Sys.*, 135 S.Ct. 1920, 1925 (2015).[20]

ParkerVision has adduced no evidence Qualcomm possessed the requisite specific intent to infringe. Knowledge of a patent is not enough. *Bioverativ v. CSL Behring*, No. 17-914, 2020 U.S. Dist. LEXIS 49602, at *12-13 (D. Del. Mar. 23, 2020) (granting MSJ of no willfulness even where Defendants knew about the patents because that is "not sufficient"). ParkerVision never alleged Qualcomm infringed any of the four patents, never asserted these patents throughout the entire *ParkerVision I*

[20] *DSU Med. v. JMS*, 471 F.3d 1293, 1306 (Fed. Cir. 2006) ("[I]nducement requires that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another's infringement.") (internal quotations and citation omitted); *TecSec v. Adobe*, 978 F.3d 1278, 1287 (Fed. Cir. 2020) (subjective standard); *Vita-Mix v. Basic Holding*, 581 F.3d 1317, 1329 (Fed. Cir. 2009) (SJ no inducement); *Parallel Networks Licensing v. Microsoft*, 777 F. App'x 489, 494 (Fed. Cir. 2019).

litigation (filed 2011), and did not even assert two of them in its original complaint. (Dkt. 1, ¶ 2; Dkt. 26, ¶ 2; Gardner Ex. 56, PV RFA No. 160 Resp. at 16.)

No reasonable jury could conclude Defendants possessed the requisite specific intent to infringe. Every forum that has evaluated ParkerVision's claims on the merits has ruled against ParkerVision. *ParkerVision I*, where ParkerVision litigated the old emails it relies on now, established that Qualcomm's products did not infringe ParkerVision's inventions. The jury, after reviewing the same evidence ParkerVision plans to present here, also rejected ParkerVision's willful infringement allegations.[21] The Commission Investigative Staff at the ITC also concluded ParkerVision could not prove infringement. (Gardner Ex. 57, QC 14th Supp. Rog. No. 6 Resp. at 107; Dkt. 318-4 at 161.) There is simply no evidence that Defendants specifically intended to infringe the patents-in-suit, let alone evidence of "wanton, malicious, [and] bad faith" behavior. *Halo*, 136 S.Ct. at 1932. Summary judgment of no willful infringement and no induced infringement should be granted.

IX. CONCLUSION

Summary judgment of non-infringement and invalidity should be granted.[22]

Dated: February 16, 2021 *<u>/s/ Matthew J. Brigham</u>*

[21] *ParkerVision v. Qualcomm*, No. 3:11-cv-719, Dkt. 468 (M.D. Fla.).

[22] Defendants sought leave to file two 35-page motions, one for the RX patents and one for the TX patents. (Dkt. 484.) Defendant's request remains pending. As a result, Defendants have eliminated potentially dispositive issues from the briefing and reduced the number of figures and quotes to meet the 25-page, single -motion requirement. Defendants remain willing to submit additional briefing with the Court's approval.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and forgoing document has been served on all counsel of record via the Court's ECF system on February 16, 2021.

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