

No. 22-1755

**In The
United States Court of Appeals
for the Federal Circuit**

PARKERVISION, INC.,

Plaintiff-Appellant,

v.

QUALCOMM INCORPORATED, QUALCOMM AETHEROS, INC.,

Defendants-Appellees.

Appeals from the United States District Court for the Middle District of Florida,
Case No. 6:14-cv-00687-PGB-KRS, the Honorable Paul G. Byron.

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December 22, 2022

CERTIFICATE OF INTEREST

Case Number 22-1755

Short Case Caption ParkerVision, Inc. v. Qualcomm Incorporated

Filing Party/Entity ParkerVision, Inc.

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I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date December 22, 2022

Signature: /s/ Joel L. Thollander

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<p>ParkerVision, Inc.</p>	<p>None.</p>	<p>None.</p>

ADDITIONAL PAGES ATTACHED

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TABLE OF CONTENTS

INTRODUCTION	1
ARGUMENT IN REPLY	4
A. The District Court Erred in Applying Collateral Estoppel to the Receiver Claims in the '940 and '907 Patents.....	4
1. Qualcomm's agreement that this issue turns on plain-language claim scope confirms reversal is necessary	4
a. The '940 patent receiver claims are materially different from the claims in ParkerVision I.	5
b. The '907 patent receiver claims are materially different from the claims in ParkerVision I.	8
2. Qualcomm's affirmative collateral estoppel arguments fail	11
3. Qualcomm's responsive collateral estoppel arguments fail	15
B. The District Court Erred in Striking Admittedly Reliable Testimony Based Solely on the Absence Of a Litigation-Inspired Simulation.....	19
1. Qualcomm, not ParkerVision, is taking inconsistent positions.....	19
2. Qualcomm's responsive arguments confirm that exclusion was an abuse of discretion for each of the three elements	21
a. Gating and switch modules.	21
b. Harmonically rich signal.	22
c. Non-negligible energy.....	24
3. Qualcomm's remaining arguments are without merit	26
C. The District Court Erred in Applying Collateral Estoppel to the Transmitter Claims in the '940 Patent	28
1. Qualcomm's responsive arguments misframe the issue.....	29
2. The Court should address this issue to avoid judicial waste.	31
CONCLUSION	32

TABLE OF AUTHORITIES

	Page(s)
CASES	
<i>B&B Hardware v. Hargis Indus.</i> , 575 U.S. 138 (2015).....	29
<i>Becton Dickinson & Co. v. Tyco Healthcare Grp.</i> , 616 F.3d 1249 (Fed. Cir. 2010)	26
<i>Eltech Sys. v. PPG Indus.</i> , 903 F.2d 805 (Fed. Cir. 1990)	26
<i>Molinaro v. Fannon/Courier</i> , 745 F.2d 651 (Fed. Cir. 1984)	19
<i>Ohio Willow Wood v. Alps S.</i> , 735 F.3d 1333 (Fed. Cir. 2013)	12
<i>ParkerVision Inc. v. Qualcomm Inc.</i> , 621 F. App'x 1009 (Fed. Cir. 2015) (unpublished).....	passim
<i>ParkerVision, Inc. v. Qualcomm Inc.</i> , 903 F.3d 1354 (Fed. Cir. 2018)	20, 21, 22, 23
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed Cir. 2005) (en banc)	7
<i>Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.</i> , 326 F.3d 1333 (11th Cir. 2003)	24, 26
<i>Tampa Bay Water v. HDR Eng'g, Inc.</i> , 731 F.3d 1171 (11th Cir. 2013)	23, 26
<i>TecSec, Inc. v. Adobe Sys.</i> , 658 F. App'x 570 (Fed. Cir. 2016) (unpublished).....	5
<i>XY v. Trans Ova Genetics</i> , 890 F.3d 1282 (Fed. Cir. 2018)	30, 31
STATUTES	
35 U.S.C. § 315(e)(2).....	29

INTRODUCTION

Setting the hand-waving and mud-slinging in Qualcomm’s responsive brief (Q.Br.) aside, none of its arguments supports affirmance.

Collateral estoppel requires an “identity of issues”—it only applies, as Qualcomm notes, “if the limitation that resulted in the non-infringement finding is common to both sets of claims.” Q.Br.20. The claims in *ParkerVision I* recited a “generating” limitation under which, the Court explained, “a baseband signal ‘following the capacitor’ is created.” *ParkerVision Inc. v. Qualcomm Inc.*, 621 F. App’x 1009, 1016 (Fed. Cir. 2015) (unpublished). The infringement issue turned on admissions that, in Qualcomm’s products, a down-converted signal “already exists before the capacitor,” at the “output” of the switches. *Id.* at 1013-14. The receiver claims here were asserted because they recite no “generating” limitation; the fact that a baseband signal exists after the switches but before the capacitors in Qualcomm’s products does *not* preclude their infringement. Instead they “track the *ParkerVision I* explanation of the accused circuitry” as including switches that down-convert. Appx1078-1079; ParkerVision’s brief (PV.Br.) 27, 31-35.

Qualcomm suggests that collateral estoppel precludes any claim “involv[ing]” capacitors (Q.Br.37), but that is incorrect—for estoppel to apply, the claims must require that the capacitors are “involved” in the same way they were involved in the *ParkerVision I* claims. And the claims here are different. The ’940 patent claims

recite down-conversion by the “universal frequency translation (UFT) module”—“one or more switch[es].” Appx6080; PV.Br.30-31. The ’907 patent claims recite forming a down-converted signal using energy sent directly from a switch to the load, bypassing the capacitor. PV.Br.31-35. The claims here are thus *consistent* with the dispositive issue decided in *ParkerVision I*: in these claims, as in Qualcomm’s products, a down-converted baseband signal “already exists before the capacitor,” at the “output” of the switches. 621 F. App’x at 1013-14. Both the claim language *and* the expert evidence support this conclusion. PV.Br.28-35. Summary judgment was thus improper, and nothing in Qualcomm’s brief shows otherwise.

Indeed, Qualcomm agrees that “the sole issue for collateral estoppel is whether the *claims* share the required identity of issues.” Q.Br.20. But the district court offered no analysis of the claims. Q.Br.36. No problem, argues Qualcomm, because the court relied on expert charts containing the claims printed “side-by-side.” Q.Br.24. But those charts likewise provided no analysis. No problem again, argues Qualcomm—simply printing the different language side-by-side was sufficient; it “did not need further analysis.” Q.Br.40. On the sole issue for collateral estoppel, therefore, the district court’s judgment has no firm foundation; it is turtles all the way down. Qualcomm’s response does not fill the hole: the plain-language arguments it offers amount to either ignoring the manifest differences in the claims, or dismissing those differences as irrelevant. This Court should do neither.

Qualcomm takes a similar approach to the *Daubert* issues. It offers no substantial defense of the district court's holding that an expert-generated simulation is necessary to show gating, harmonic signals, or non-negligible energy. This makes sense given that, in the parties' two previous proceedings in this Court, Qualcomm has—successfully—taken the opposite position *on these same claim elements*. *Infra* 20. Rather than attempt to demonstrate that simulations are required to show these elements (which Qualcomm itself has insisted can be shown without simulations), Qualcomm points to portions of the district court's *Daubert* order liberally crediting the testimony of Qualcomm's expert over the testimony of ParkerVision's expert. That, however, only highlights the abuses of discretion. PV.Br.60.

Qualcomm's defense of collateral estoppel based on the '940 patent IPR turns on misframing the issue. Qualcomm's arguments assume that the question is whether and how collateral estoppel applies to apparatus claims found unpatentable and *not* asserted here. The question, however, is whether and how collateral estoppel applies to method claims, asserted here, affirmed as patentable in the '940 patent IPR. When the issue is properly framed, Qualcomm's arguments quickly come apart.

Qualcomm also works to contextualize the district court's statement that “this shouldn't be tried to a jury, in my opinion. They will never understand. This should be PTAB 100 percent. We should be out of it, but that's how it is.” Appx61010; Q.Br.18-19. ParkerVision meant no disrespect in recounting the colloquy. But

ParkerVision was understandably troubled when the judge charged with deciding whether to send its claims to the jury freely offered the opinion that “this shouldn’t be tried to a jury”—and then granted Qualcomm a clean sweep across the board, issuing orders that, among other things, failed to address a prior order, made radical new law on the need for self-generated simulations, and contravened the statutory provision addressing IPR estoppel in these circumstances.¹

This Court should reverse and remand.

ARGUMENT IN REPLY

A. The District Court Erred in Applying Collateral Estoppel to the Receiver Claims in the ’940 and ’907 Patents.

1. Qualcomm’s agreement that this issue turns on plain-language claim scope confirms reversal is necessary.

Qualcomm labors to muddy the waters on the collateral estoppel issue, but its critical points of agreement make the necessity of reversal clear.

Qualcomm concurs that “the sole issue for collateral estoppel is whether the *claims* share the required identity of issues” (Q.Br.20), and that estoppel only applies “if the limitation that resulted in the non-infringement finding”—“the ‘generating’

¹ Qualcomm suggests that, while “irrelevant to this case and appeal,” after negotiating with ParkerVision it concluded that ParkerVision’s technology provided “nothing of value.” Q.Br.7. The evidence shows, however, that Qualcomm viewed this technology as the “holy grail,” and set out to adopt ParkerVision’s approach. PV.Br.12-13. It also strains credulity to believe, as Qualcomm suggests, that it has become the dominant player in this market using nothing more than a near-century-old “traditional mixer approach” to up- and down-conversion. Q.Br.7.

limitation” (Q.Br.8)—“is common to both sets of claims” (Q.Br.20). In making this determination, Qualcomm agrees, the claim language “receives its plain and ordinary meaning.” Q.Br.40. Notwithstanding that comparative plain-language claim scope constituted the sole estoppel issue (Q.Br.20), Qualcomm does not dispute that “the district court provided no analysis of the actual claim language” (Q.Br.36). Instead, it “relied on and cited the portions of Dr. Razavi’s testimony” containing side-by-side charts. Q.Br.36. But those charts likewise contained no evaluation—simply printing the manifestly different language side-by-side was sufficient, according to Qualcomm, and “did not need further analysis.” Q.Br.40.

These points of agreement should leave no doubt that the district court erred in its approach. PV.Br.35-36; *cf. TecSec, Inc. v. Adobe Sys.*, 658 F. App’x 570, 586 (Fed. Cir. 2016) (unpublished) (rejecting assumption “that the scope of ... claims was identical without analysis” and explaining that determining “relative claim scope” is “not an easy issue admitting of such a cursory conclusion”). Further, this Court’s *de novo* review of the actual claim language should leave no doubt that the district court also erred in its conclusion: the receiver claims do not recite the “generating” limitation that was dispositive in *ParkerVision I*. PV.Br.28-35.

a. The ’940 patent receiver claims are materially different from the claims in *ParkerVision I*.

The ’940 patent claims do not recite the “generating” limitation. The chart offered by Qualcomm’s expert is decisive:

‘551 Patent, claim 23	‘940 Patent, claims 24 and 331
An apparatus for down-converting a carrier signal to a lower frequency signal, comprising:	The apparatus of claim 22, wherein said receiving subsystem comprises: an aliasing module, further comprising:
<p>an energy transfer signal generator; a switch module controlled by said energy transfer signal generator; and a storage module coupled to said switch module; wherein said storage module receives non-negligible amounts of energy transferred from a carrier signal at an aliasing rate that is substantially equal to a frequency of the carrier signal plus or minus a frequency of the lower frequency signal, divided by n where n represents a harmonic or sub-harmonic of the carrier signal, wherein a lower frequency signal is generated from the transferred energy.</p>	<p>(1) a universal frequency translation (UFT) module, said UFT module aliasing an electromagnetic signal according to an aliasing signal having an aliasing rate to down-convert said electromagnetic signal, and transferring energy from said electromagnetic signal at said aliasing rate;</p> <p>(2) a signal generator generating said aliasing signal, said aliasing signal comprising a plurality of pulses having non-negligible apertures; and (3) a storage device storing energy from said UFT module.</p> <p>Claim 331: The apparatus of claim 24, wherein: said signal generator generates an energy transfer signal comprising a string of pulses, said string of pulses controlling opening and closing of a switch to transfer energy from said electromagnetic signal.</p>

Appx49099; PV.Br.40. Under the “generating” limitation on the left, as the Court explained in *ParkerVision I*, a lower frequency “signal ‘following the [storage] capacitor’ is created.” 621 F. App’x at 1014-16. But admissions suggested that, in Qualcomm’s products, a lower frequency signal “already exists before the capacitor,” at the “output” of the switches. *Id.*; PV.Br.29-34. The ’940 patent receiver claims on the right are different: they recite “a universal frequency translation (UFT) module”—one or more switches—“aliasing an electromagnetic signal ... to down-convert said electromagnetic signal.” Appx150. In these claims, as in the accused products, the switch down-converts. PV.Br.30.

Qualcomm does not dispute that the “UFT module” is one or more switches, nor that its name alone makes clear that it translates frequencies. PV.Br.9. Nor does Qualcomm dispute that the color scheme chosen by its expert reflects that, in the ’940 patent claims, the switch down-converts the signal (in purple) before the signal is sent to the storage device (in blue)—just as in the accused products. PV.Br.40.

Qualcomm offers two arguments based on actual claim language. Q.Br.34-35. It briefly argues that the ’940 patent receiver “claims recite that the aliasing *rate* is what is important ‘to down-convert said electromagnetic signal[.]’” Q.Br.35. That argument does not help Qualcomm, because the receiver claims further recite that *the UFT module* does the “aliasing” at the appropriate “aliasing rate to down-convert said electromagnet signal”—the switch down-converts. Appx150. Qualcomm also argues that if, as the claim language recites, the UFT module “down-converts the electromagnetic signal, then the other claim elements serve no purpose—or stated purpose.” Q.Br.34. That argument founders on the “bedrock principle” that courts “look to the words of the claims themselves ... to define the scope of the patented invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed Cir. 2005) (en banc) (citations omitted). Each element recited in the ’940 patent claims serves its stated purpose, including a UFT module that down-converts a signal and “a storage device” that “stor[es] energy from said UFT module.” Appx150. Both the UFT module and the storage device meaningfully limit the claim under that plain-language reading.

Review of the actual language of the '940 patent receiver claims—the “sole issue for collateral estoppel” (Q.Br.20)—confirms that these claims recite no “generating” limitation, and share no identity of issues with *ParkerVision I*.

b. The '907 patent receiver claims are materially different from the claims in *ParkerVision I*.

The '907 patent claims likewise do not recite the “generating” limitation found dispositive in *ParkerVision I*. They recite, instead: “Providing, during the periodic couplings, energy from the electromagnetic signal to the load ... [w]hereby the energy provided to the load forms a down-converted signal.” Appx425; PV.Br.31-35. Unlike the *ParkerVision I* claims, the '907 patent claims require “a ‘down-converted signal’ formed in a load using energy taken directly from” the electromagnetic signal. Appx10343; PV.Br.37. Down-conversion is thus *necessarily* accomplished by the recited “periodic couplings”—the switch. PV.Br.31-35. The claims further recite that, “during the periodic couplings,” the *same* switch-down-converted energy is provided *both* to the storage device *and* directly to the load. PV.Br.10-11. Thus, in “the '907 claims, all of the energy provided to the load” has already been down-converted by the switch. Appx10344; PV.Br.12.

Qualcomm cannot contest that, as a matter of logic, the energy provided directly to the load must necessarily be down-converted by the “periodic couplings” of the switch. PV.Br.31-32; Q.Br.31-32. Nor does Qualcomm dispute that its

expert’s side-by-side chart has a blank next to the element reciting that, in these claims, energy is provided directly to the load—thus bypassing the storage capacitor:

‘551 Patent, claim 23	‘907 Patent, claim 1
... ... <u>wherein a lower frequency signal is</u>	providing, during the periodic couplings, energy from the electromagnetic signal to the load; and <u>providing, between the periodic couplings,</u>

Appx49083 (excerpted from ¶ 805); PV.Br.41.

Indeed, Qualcomm concedes that this element reflects a difference between the ’907 patent claims and those in *ParkerVision I*. Q.Br.31. But Qualcomm argues that the difference “is irrelevant” because the ’907 patent claims “require a down-converted signal” that is “formed” using energy from two sources: “(1) from the electromagnetic signal during the periodic couplings; and (2) from the energy storage device between the periodic couplings.” Q.Br.31. Qualcomm asserts that the language is “problematic” for ParkerVision’s logically-required reading of the claim because, “[i]f a down-converted signal already exists, then energy provided to the load would not ‘form’ one.” Q.Br.31. Qualcomm notes the explanation of “what happens in the load” as “processing” the “already down-converted signal.” Q.Br.31. But, Qualcomm argues, “ParkerVision has provided no evidence to support changing the word ‘forms’ to ‘processes.’” Q.Br.31.

This argument flips the burden, asks the wrong questions, and leads to absurd results. The burden to justify summary judgment is on Qualcomm, not ParkerVision.

The relevant questions are whether the '907 patent claims recite the “generating” limitation—and whether, assuming the rest of its argument holds water, Qualcomm is right to posit that “forms” has the same connotation as “generates.”

As a matter of plain language, which Qualcomm agrees must control (Q.Br.40), the answer to both questions is “no.” The word “generates” connotes “creates”—as reflected in this Court’s interchangeable use of those terms in *ParkerVision I*, 621 Fed. App’x at 1014-16. The word “forms,” on the other hand, connotes “shapes”—as reflected in the expert explanations of how one of ordinary skill would understand the claims: “Because the switch-down-converted signal is a down-converted signal, so too is the signal *shaped* in the load as a result of receiving energy from the switch-down-converted signal.” Appx10344 (emphasis added), Appx40333-40334 (“The difference between the down-converted signal at the load and one at the output of the mixer is a matter of combination or forming over time.”). While these expert explanations make sense of the '907 patent claims, Qualcomm’s reading makes nonsense of them: because energy that has not been down-converted cannot be used to form a down-converted signal. PV.Br.31-35.

These claims recite a signal that is formed through samples of already down-converted energy—without this forming there could be unwanted gaps in the down-converted signal provided to the load. PV.Br.12; Appx40333-40334. They recite no “generating” limitation, and their structure is plainly different from the structure of

the claims in *ParkerVision I*. There is, at bottom, no dispute that the '907 patent claims require “a ‘down-converted signal’ formed in a load using energy taken directly from” the signal. PV.Br.37. That difference precludes any finding that the claims “share the required identity of issues” (Q.Br.20) with *ParkerVision I*.

2. Qualcomm’s affirmative collateral estoppel arguments fail.

Aside from its concessions regarding the centrality of comparative plain-language claim scope (*supra* 4-5), and its brief discussions touching that claim scope (*supra* 7-9), Qualcomm offers three affirmative arguments supporting the estoppel holding (Q.Br.23-30). None concerns the actual language of the receiver claims, and none supports the summary judgment on this *de novo* review.

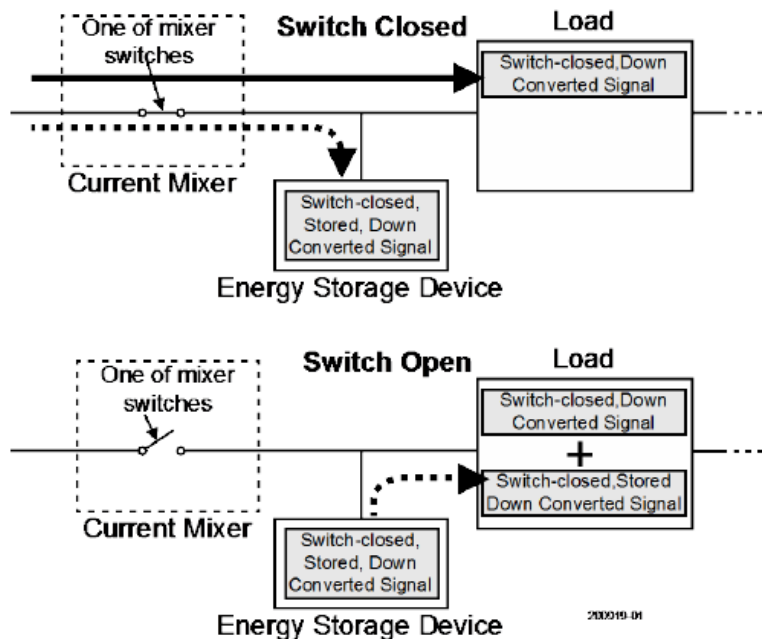
(a) Qualcomm points to Dr. Razavi’s “side-by-side, color-coded” charts reproducing the language “of the claims here and the claims from the patents in *ParkerVision I*.” Q.Br.24. According to Qualcomm, these charts “demonstrated the substantial similarity between the claims in *ParkerVision I* and here through a comparison of the claim language.” Q.Br.20. This argument fails for numerous reasons. (1) Collateral estoppel is not triggered by “substantial similarity.” Q.Br.3. The issues must be *identical*—the patents must contain “the same [‘generating’] limitation” that was “dispositive of non-infringement” in *ParkerVision I*. PV.Br.27. (2) As *ParkerVision* pointed out, and Qualcomm never refutes, that test requires a determination of comparative claim scope—a legal question for the court, not a

factual question subject to resolution by experts. PV.Br.38-39. (3) Further, as Qualcomm concedes, Dr. Razavi’s charts were not accompanied by any explanation of the manifest differences in the claim language—according to Qualcomm, the language spoke for itself and “did not need further analysis.” Q.Br.40. (4) Finally, as demonstrated, those charts *merely confirm* that the receiver claims here *do not recite* the “generating” limitation found dispositive in *ParkerVision I. Supra* 6-11. Dr. Razavi could not possibly have offered any analysis that would change the controlling plain-language scope of the claims, and nothing in Dr. Razavi’s no-analysis charts helps Qualcomm on this issue. PV.Br.38-41.²

(b) Qualcomm next argues that ParkerVision’s expert “admitted the identity of issues.” Q.Br.25-26. ParkerVision’s expert had the same power as Qualcomm’s expert to change the scope of the claims: none. In any event, he offered no admission regarding an “identity of issues.” Q.Br.25. He did agree that the receiver claims “require that you produce a lower-frequency signal using energy that’s been transferred from a higher-frequency signal into a storage medium.” But this is not inconsistent with the dispositive factual issue in *ParkerVision I*—that a down-

² Qualcomm’s citation to *Ohio Willow Wood v. Alps S.*, 735 F.3d 1333 (Fed. Cir. 2013) (Q.Br.25) supports ParkerVision, not Qualcomm—because neither Qualcomm nor its expert explained how the receiver claims contained the dispositive “generating” limitation when the ’940 patent claims recite down-conversion by the UFT module, and the ’907 patent claims recite forming a down-converted signal using energy that has bypassed the capacitor. *Supra* 6-11; PV.Br.31-41.

converted signal exists after the switches but before the capacitors in Qualcomm's products. Q.Br.26; PV.Br.42-43. ParkerVision's expert did not agree that the receiver claims prohibit a down-converted signal after the switch but before capacitor. In fact, ParkerVision's expert said the opposite. Given the opportunity to explain his understanding of the receiver claims in his report, he offered and commented upon the diagram reproduced in ParkerVision's brief:



Appx44112; PV.Br.32-33. He further explained that, with respect to the '907 patent claims, "[d]uring the periodic coupling, a down-converted signal exists at the output of the mixer [switches]" (Appx40333-40334)—just as in Qualcomm's products.

Qualcomm argues that this diagram "corroborates the admissions" because it is labeled as illustrating "the forming of the down-converted signal using an energy storage element." Q.Br.26-27; Appx44112. That gets things backwards. The

diagram's label reflects the '907 patent claim language, and accords with the expert's understanding of the word "forms" as connoting "shapes," rather than "creates." *Supra* 10. Indeed, that ParkerVision's expert uses the word "forming" to describe this diagram—which reflects a manifestly different structure than the claims in *ParkerVision I*, and makes clear that the signal is down-converted "somewhere other than ... the capacitor," 621 Fed. App'x at 1013—confirms that Qualcomm's "admission of identity" allegations are meritless.

In any event, those allegations are beside the point. The estoppel issue presents a legal question for the Court that turns on a comparative analysis of the claim language, not on some game of "gotcha" played with fact experts.

(c) Qualcomm's final affirmative argument is that ParkerVision's "positions in this litigation" purportedly show the "identity of issues." Q.Br.27. Qualcomm argues that ParkerVision has "used the same 'energy sampl[ing]' label" for various patents; that it has referenced some of the same figures in slides and briefs; and that it "moved to sever and stay the receive[r] claims in this case ... due to the *ParkerVision I* appeal." Q.Br.27-29. None of these observations comes close to showing—or even suggesting—that the receiver claims recite the "generating" limitation found dispositive in *ParkerVision I*. Collateral estoppel does not turn on a party's marketing labels, its general references to demonstrative patent figures, or its desire to proceed efficiently in litigation. Indeed, in the motion Qualcomm

references, ParkerVision highlighted its view that, given the lack of “overlap,” the “ongoing appellate proceedings in *ParkerVision I*” were “unlikely to resolve” the receiver claim disputes. Appx5342. And the district court validated that view in its initial ruling on collateral estoppel. PV.Br.16-17.

The fact that Qualcomm feels the need to point to labels, figures, and irrelevant motions highlights the poverty of its plain-language arguments.

3. Qualcomm’s responsive collateral estoppel arguments fail.

Qualcomm offers short responses to “a host” of ParkerVision’s arguments. Q.Br.36. They can be addressed briefly; none supports affirmance.

(a) Qualcomm takes issue with a characterization of *ParkerVision I*, and argues that the question for estoppel purposes “was whether the capacitors were merely ‘involved in’ generating the baseband.” Q.Br.36-37. That is incorrect. To be sure, the Court described “[t]he parties’ dispute” along those general lines. *ParkerVision I*, 621 F. App’x at 1013. But collateral estoppel does not turn on generalized descriptions; it requires that claims present the same issue found dispositive of non-infringement. PV.Br.27; Q.Br.23. The Court was clear in *ParkerVision I*, and Qualcomm concedes, that the “generating” limitation was dispositive there. Q.Br.23. The words “involved in” appear nowhere in the “generating” limitation. *Supra* 6. And when the Court used more precise terms, it described the dispute as, *e.g.*, whether “a baseband signal ‘following the capacitor’

is created.” *ParkerVision I*, 621 Fed. App’x at 1016. The dispositive *issue* in *ParkerVision I* was whether the claims could read on products in which a down-converted signal “already exists before the capacitor,” at the “output” of the switches. 621 F. App’x 1013-14. The claims there *could not*; the claims here *can*.

(b) Qualcomm argues that the district court was free to change its mind regarding estoppel because summary judgment denials are not generally subject to the law-of-the-case doctrine. Q.Br.37-39. But Qualcomm does not address the main point of this argument: that the court contravened the salutary purposes of the doctrine when it (1) ordered early resolution of collateral estoppel to ensure the parties did not “invest energy and expense litigating ... infringement allegations” that might later be found estopped based on *ParkerVision I*; (2) resolved the issue against Qualcomm; and then, (3) years later—following substantial investment of energy and resources litigating infringement—reversed course and rendered that investment pointless *without mentioning* its prior order. PV.Br.38.

(c) When the district court initially considered the ’907 patent receiver claims, it acknowledged that they require “a down-converted signal” “formed in a load using energy taken directly from the electromagnetic signal,” bypassing the capacitor. Appx10343-10344. The switch thus down-converts, and because “the switch-down-converted signal is a down-converted signal, so too is the signal shaped in the load as a result of receiving energy from the switch-down-converted signal.” Appx10344.

Qualcomm now argues that this reading of the '907 patent, which the district court relied on in denying Qualcomm's first estoppel motion, is "the 'two baseband' theory" that "[t]his Court rejected" in *ParkerVision I*. Q.Br.32. That is incorrect. This is not a "theory" at all; it is a reading of the plain claim language. Further, this Court did not "reject" the so-called "'two baseband' theory" in *ParkerVision I*: it noted that ParkerVision had briefly raised the "theory" during a post-trial hearing, "but disclaim[ed] reliance on it." 621 F. App'x at 1015. That "theory" was thus neither "actually litigated" nor "critical and necessary" to the judgment in *ParkerVision I*—and so cannot implicate collateral estoppel. PV.Br.26. Indeed, Qualcomm's argument cuts the other way; it highlights the reality that the '907 patent claims are markedly different from the claims in the prior case.

(d) Qualcomm offers a lengthy defense of the district court's reliance on Dr. Razavi's no-analysis charts. Q.Br.39-42. There is no need to retread that ground. *Supra* 5-11; PV.Br.38-41. But in that defense, Qualcomm suggests that ParkerVision has taken inconsistent positions, and argued to the district court that determination of claim scope for collateral estoppel purposes is a jury issue. Q.Br.41 (citing Appx10072). That misleads. In the sentence before the one quoted by Qualcomm, ParkerVision made the context clear: "[i]nfringement poses a question of *fact* asking whether the accused device contains each claim limitation exactly." Appx10072 (emphasis in original). *That* is the jury issue to which ParkerVision referred.

(e) Qualcomm next faults ParkerVision for not having its infringement expert offer side-by-side charts to match those of Dr. Razavi. Q.Br.42-43. Since the matching charts would be virtually identical—simple reproductions of claim language, with no analysis—it is hard to see how two sets would be better than one.

Qualcomm also suggests that ParkerVision’s expert infringement analysis of the claims does “not distinguish the present case from *ParkerVision I*,” and that the background description of ParkerVision’s technology “cannot show a material difference in the *claims*” in the two cases. Q.Br.43. This misses the mark. The material difference in the *claims* is shown by analyzing the *claims*—something Qualcomm admits both the district court and Dr. Razavi neglected to do. Further, ParkerVision’s expert report *does* distinguish the claims. It explains how, in these receiver claims, the switch down-converts. Appx40378-40379, Appx40375-40376. It confirms that, in these claims (as in Qualcomm’s products) “a down-converted signal exists at the output of the mixer [switches].” Appx40333-40334. Qualcomm, like the district court, improperly ignores this testimony—which confirms that summary judgment was improper on this issue. Q.Br.43; PV.Br.41-42.

Qualcomm further argues that the declaration from Dr. Allen (Appx31984-31991) should be disregarded because Dr. Allen “cannot testify at trial.” Q.Br.42-43. But Dr. Allen was substituted for health reasons, and on condition that the

substitution would not impact the substance of the ParkerVision’s positions going forward. Appx31989-31991. Qualcomm cannot walk that back now.

(f) Finally, Qualcomm argues that the fact that the Patent Office issued the ’907 patent without a terminal disclaimer is a “red herring.” Q.Br.44. As support, Qualcomm cites to *Molinaro v. Fannon/Courier*, where it was “indisputable that the claim asserted here is the same as that the scope of which was determined in earlier litigation.” 745 F.2d 651, 652-55 (Fed. Cir. 1984) (per curium). This is a different case: the comparative scope of the claims is in dispute, and when the district court considered the actual language recited in the ’907 patent, it recognized the material differences. PV.Br.36-37. The lack of any terminal disclaimer confirms that the Patent Office viewed the ’907 patent claims the same way.

B. The District Court Erred in Striking Admittedly Reliable Testimony Based Solely on the Absence Of a Litigation-Inspired Simulation.

1. Qualcomm, not ParkerVision, is taking inconsistent positions.

Qualcomm opens its *Daubert*-related response with the bolded assertion that “ParkerVision Admitted It Needed Simulations to Prove Performance for Infringement, But Did Not Simulate.” Q.Br.45 (emphases omitted). That is not true. At the hearing addressing simulations, as ParkerVision detailed in its brief, it took the express position that expert-generated simulations were *not* necessary, and that ParkerVision could “prove [its] case without” them. Appx5093; PV.Br.58-59. And

based on that express position, the court *denied* the simulation-related discovery ParkerVision had sought from Qualcomm. Appx5098, Appx5100. Rather than grapple with the relevant record evidence in its response, Qualcomm simply ignores the uncontroverted facts that disprove its false narrative. Q.Br.45.

Further, Qualcomm's suggestion that ParkerVision is taking inconsistent positions gets things backwards. The district court excluded the testimony of ParkerVision's expert on the ground that the expert could not reliably discern the presence of three claim elements without having first performed a self-generated simulation: "gating" and "switch modules"; "harmonically rich signal"; and "non-negligible energy." PV.Br.48-60; Appx32-40. With respect to *each of these elements*, Qualcomm has taken the position that its presence can be discerned, and proven, without need for a self-generated simulation. For "gating" and "switch modules," Qualcomm argued that "persons of ordinary skill in the art" can discern the presence of "a gate or switch" simply by looking at the shape of a diagrammed "waveform." *ParkerVision, Inc. v. Qualcomm Inc.*, 903 F.3d 1354, 1359 (Fed. Cir. 2018). Qualcomm took a similar position for "harmonically rich signal," asserting that this limitation—along with "integer multiple" harmonics—could be determined with a straightforward application of "basic math." *Id.* And regarding "non-negligible energy," Qualcomm took the position that no simulation was required for

its expert to testify as to the presence of that element—even under a higher clear-and-convincing evidentiary burden. *ParkerVision I*, 621 F. App'x at 1019.³

Qualcomm not only took these positions; it succeeded with them. *See id.*; *ParkerVision*, 903 F.3d at 1359; PV.Br.53-54. Given that both the Board and this Court have credited its arguments that expert-generated simulations are not required to show these elements, it is unsurprising that Qualcomm fails to muster any substantial defense of the district court's contrary *Daubert* holdings. Those decisions reflect abuses of discretion; nothing in Qualcomm's response suggests otherwise.

2. Qualcomm's responsive arguments confirm that exclusion was an abuse of discretion for each of the three elements.

a. Gating and switch modules.

The district court excluded ParkerVision's expert testimony on the "gating" elements because Dr. Steer "fail[ed] to confirm ... via simulation" his technical analysis based on, among other things, Qualcomm's schematics and the related admission of a Qualcomm engineer. Appx38; PV.Br.52-53. Knowing that it cannot credibly defend that holding, Qualcomm does not try. Instead, Qualcomm argues that the "fundamental problem" is that ParkerVision "has never shown that its expert" relied on Qualcomm's admittedly reliable schematics. Q.Br.55-56. The

³ Qualcomm's expert took similar positions in this case, discerning these elements in the prior art based on diagrams (Appx50504, Appx50758), "textbook knowledge" (Appx50516), and duty cycle and capacitor size (Appx50212, Appx50396).

district court found otherwise: “Dr. Steer’s report contains numerous references to gating, and he identifies switches on schematics which he contends performs the gating function.” Appx38. Qualcomm may quibble with Dr. Steer’s conclusions, but as Qualcomm assured the Board and this Court in the ’940 patent IPR, “persons of ordinary skill in the art”—let alone experts—can discern the presence of “a gate or switch” based on review of such documents. *ParkerVision*, 903 F.3d at 1359.

b. Harmonically rich signal.

Qualcomm’s defense of the district court’s holding as to “harmonically rich signal” is similarly indirect. Qualcomm makes no attempt to prove that reliable methodology requires expert-generated simulations for this element. Instead, Qualcomm argues that the evidence was purportedly not “sufficient” to show “that the output of Qualcomm’s mixers are ‘integer multiple’ harmonic frequencies.” Q.Br.50. The district court’s order proves otherwise, noting that ParkerVision’s expert relied on, among other things, a “low level test review harmonic test showing a *second* and *third* harmonic power level” (Appx39 (emphases added))—that is, a plurality of integer multiple harmonics. Appx40753-40758. And, as the court further recognized, Qualcomm’s engineer testified not only that the output of Qualcomm’s mixers was “a whole spew of harmonics,” but also that “what you would get—*third* harmonic is a very strong value, *fifth* harmonic, *sixth* harmonic, all those things will get generated.” Appx40 (emphases added). It is hard to imagine more reliable

evidence supporting the conclusion that the output of Qualcomm's mixers are "integer multiple" harmonics than the test reviews produced by Qualcomm and the unequivocal testimony provided by its employee.

Qualcomm spends time arguing about the significance of "integer multiple" harmonics in the '940 patent IPR (Q.Br.50-52), but none of that supports its position. Because nobody involved with that IPR—not Qualcomm, not the Board, not this Court—thought that an expert-generated simulation was necessary to discern this element. *See ParkerVision*, 903 F.3d at 1359. Only "basic math" was needed. *Id.* And while Qualcomm mistakenly suggests that ParkerVision's expert failed "to perform calculations" (Q.Br.50-51)—that is not true (Appx40748-40758)—Qualcomm provides no reason whatsoever why ParkerVision's expert could not consider and rely upon the results of *Qualcomm's own basic math*, reflected in Qualcomm's design and test review documents and the testimony of its engineers.

Qualcomm's arguments are principally directed to factual disputes between the experts, not to whether ParkerVision's expert looked to reliable sources of information. Such arguments target "the credibility of [the] expert testimony, not its admissibility, and [are thus] the province of the jury." *Tampa Bay Water v. HDR Eng'g, Inc.*, 731 F.3d 1171, 1185 (11th Cir. 2013); PV.Br.60. The district court made the same plain error, as starkly reflected in its "sideband frequencies" discussion. Appx40. Neither the claims nor their constructions make mention of "sideband

frequencies” (*see* Appx10363-10364), and when Qualcomm sought to invalidate claims in the IPR, it took the position—successfully—that they were irrelevant. *See* Q.Br.53. But when it came to infringement, Qualcomm changed positions, and argued that ParkerVision’s expert had to “establish that” unclaimed “sideband frequencies” also “include[d] a plurality of harmonics.” Appx40.

Qualcomm’s new “sideband frequencies” position had nothing to do with *Daubert*; it had nothing to do even with infringement of the ’940 patent claims as construed. Appx10363-10364. Yet, in its *Daubert* order, the district court freely credited the testimony of Qualcomm’s expert on this point, citing Dr. Razavi’s⁴ irrelevant critiques of Dr. Steer’s purported “fail[ure]” to address unclaimed “sideband frequencies” as support for its determination that Dr. Steer’s testimony was inadmissible. Appx40. Qualcomm appears to believe that this supports its position. Q.Br.53. To the contrary, it confirms that the district court was not engaged in its proper “gatekeeper role under *Daubert*,” but was instead “supplant[ing] the adversary system [and] the role of the jury.” *Quiet Tech. DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1341 (11th Cir. 2003).

c. Non-negligible energy.

Qualcomm grudgingly admits that, in *ParkerVision I*, this Court found—crediting Qualcomm’s argument—that an expert-generated simulation was not

⁴ The court mistakenly referred to Dr. Razavi as “Dr. Allen.” Appx40.

required to show “non-negligible amounts of energy.” 621 F. App’x at 1019; Q.Br.54. Qualcomm initially suggests, perhaps surprisingly, that ParkerVision is “precluded” from pointing the Court to its decision crediting Qualcomm’s prior (and conflicting) position. Q.Br.54. Not true. The question whether an expert-generated simulation is necessary to show this element was fully joined in the district court, and ParkerVision is free to point out now that the district court’s ruling on that question conflicts with Qualcomm’s prior position in this Court and with this Court’s holding on that position. Qualcomm next argues that, while “Dr. Razavi did not rely on simulations that were specific to the ‘non-negligible amounts of energy’ limitation” in *ParkerVision I*, he did rely on simulations to show other limitations. Q.Br.55; see *ParkerVision I*, 621 F. App’x at 1019 (“he used simulations only to prove that [a] different claim limitation was met”). That is a non sequitur. If an expert-generated simulation *specific to a particular element is not* required to show that particular element, it cannot be that an expert-generated simulation *specific only to a different element is* required to show that particular element.

Aside from these arguments, Qualcomm suggests that Dr. Steer’s testimony was inadmissible because the expert report purportedly did not “disclose the values of the variables” used as inputs “in his calculation.” Q.Br.54; Appx37. Not so. Dr. Steer’s expert report discloses values used for his calculations and opinions—straight from Qualcomm’s own schematics. Appx50956 (541:17-542:16),

Appx44278-44281, Appx44175-44176, Appx44243. In any event, the law holds that disputes over the inputs and variables used in a calculation go to the weight of an expert’s opinion, not its admissibility under *Daubert*—these are matters for the jury. *See Quiet Tech.*, 326 F.3d at 1341; *Tampa Bay*, 731 F.3d at 1185.

3. Qualcomm’s remaining arguments are without merit.

(a) Qualcomm repeatedly suggests that ParkerVision’s expert “failed to review necessary ‘layout files.’” Q.Br.15-16, 21, 45. That is a red herring. The dispute over “layout files” was the subject of a separate *Daubert* ruling on a separate patent (Appx41), which ParkerVision has not presented for review.

(b) Qualcomm cites *Becton Dickinson* and *Eltech* as its principal authorities on this issue, but those cases addressed disputes over infringement, not *Daubert*—which reflects the actual focus of Qualcomm’s arguments. Q.Br.45-46; *see Becton Dickinson & Co. v. Tyco Healthcare Grp.*, 616 F.3d 1249, 1257 (Fed. Cir. 2010); *Eltech Sys. v. PPG Indus.*, 903 F.2d 805, 808 (Fed. Cir. 1990).

(c) Qualcomm criticizes ParkerVision’s expert for observing that the test benches provided by Qualcomm were “horrible,” and suggests that its own engineers use the same test benches. Q.Br.48-49. That is not true. But it is also not relevant; it does nothing to show that expert-generated simulations were required to discern the presence of the claim elements at issue. And tellingly, Qualcomm does not dispute ParkerVision’s showing that any reliance on simulations produced with

those test benches would be subject to a “garbage in, garbage out” attack by Qualcomm (PV.Br.57)—as explained in the textbooks Qualcomm cites (Q.Br.46; Appx40083, Appx3469). Indeed, Qualcomm never contests the overarching point that an expert-generated simulation is less reliable than the technical documents and engineer testimony produced and provided by Qualcomm itself—which the district court acknowledged ParkerVision’s expert relied on in this case. Appx33-35.

(d) Qualcomm argues, citing Appx38, that the district court found that “some of the evidence ParkerVision cited was never actually considered by the experts.” Q.Br.49. Even if that were true, it would not support the judgment. But it is not true. In the passage Qualcomm cites, the district court noted *Qualcomm’s argument* that Dr. Steer “relied on other evidence without citing the ‘other evidence’ in his report.” Appx38. The district court itself could not go so far, instead conceding that “Dr. Steer’s report contains numerous references to gating, and he identifies switches on schematics which he contends performs the gating function.” Appx38.

(e) Qualcomm also suggests, citing Appx40, that the district court found that ParkerVision’s arguments “contradicted ParkerVision’s prior representations to the district court and this Court.” Q.Br.49. But as demonstrated above, it is Qualcomm’s arguments that contradict its prior positions in this Court. *Supra* 20-21. And with respect to the discussion on Appx40, the footnote to which Qualcomm refers is confused—it attributes Dr. Razavi’s testimony to Dr. Allen, and suggests that

Qualcomm does “not contest the accuracy” of an assertion found in Qualcomm’s own expert report. Appx40 n.20. It does not show any contradiction by ParkerVision.

(f) Qualcomm’s final argument is that ParkerVision “mischaracterizes the record” with respect to the parties’ positions at the simulation-related discovery hearing. Q.Br.56-57. ParkerVision disagrees, but the Court can make its own assessment of the transcript. PV.Br.59; Appx5057-5058, Appx5093-5100, Appx4911-4912. Qualcomm also briefly suggests that ParkerVision “misreads the district court’s decision as requiring it to perform a ‘newly created, self-generated simulation.’” Q.Br.56. But that is just what the decision requires. Appx32. To be sure, in its order imposing the simulation requirement the court also frequently credited the factual testimony of Qualcomm’s expert. Appx37, Appx38, Appx39, Appx40. That provides no basis to affirm the judgment. To the contrary, as ParkerVision pointed out, the court’s crediting of one expert over the other confirms the abuses of discretion under *Daubert*. PV.Br.60. Qualcomm does not dispute this in response.

C. The District Court Erred in Applying Collateral Estoppel to the Transmitter Claims in the '940 Patent.

Regarding the district court’s application of collateral estoppel based on the Board’s findings in the '940 patent IPR, Qualcomm argues: (a) ParkerVision was the “loser”; (b) the statutory estoppel provision is irrelevant; (c) the Board’s findings were critical and necessary; and (d) the difference in burdens is irrelevant. Q.Br.60-

63. These arguments turn on misframing the issue. PV.Br.43-48. When the issue is framed correctly, Qualcomm's arguments quickly come apart.

1. Qualcomm's responsive arguments misframe the issue.

(a) ParkerVision was the winner. The '940 patent IPR *affirmed the continuing validity* of the '940 patent transmitter claims in this case. The question before the district court, and now before this Court on appeal, is whether and how *the claims affirmed in the IPR* are subject to collateral estoppel based on the IPR. ParkerVision was the winner on those claims, which are asserted here. PV.Br.43. That ParkerVision lost on *claims not asserted* is irrelevant: no question of collateral estoppel as to those claims was raised in the district court or on appeal.

(b) The statutory estoppel provision applies. Qualcomm briefly suggests that ParkerVision misreads *B&B Hardware*, but then concedes ParkerVision's point: when the statute applies, it necessarily "trumps" common law estoppel. Q.Br.62; PV.Br.44-45; *B&B Hardware v. Hargis Indus.*, 575 U.S. 138, 148 (2015). The statute applies: it expressly covers the circumstance in which a "petitioner in an inter partes review of a claim in a patent ... that results in a final written decision ... assert[s] ... in a civil action ... that the claim is invalid." 35 U.S.C. § 315(e)(2). That is *precisely* what is happening here. Qualcomm does not dispute that the district court's order turns the statutory estoppel rules upside down. Q.Br.62; PV.Br.45.

(c) The Board’s findings were neither critical nor necessary to the judgment affirming the claim validity.⁵ Even under the common law rules, the elements of collateral estoppel are not satisfied. PV.Br.45-46. Qualcomm offers another meritless waiver argument on this point, suggesting that, in reviewing the district court’s application of collateral estoppel, this Court is precluded from considering the elements of collateral estoppel. Q.Br.63. That is incorrect. On the merits, Qualcomm suggests that “the Board’s findings were critical and necessary to the decision that the apparatus claims were unpatentable.” Q.Br.64. That suffers from the same misframing problem: no question has been raised as to application of collateral estoppel to unpatentable and unasserted apparatus claims. And the issues necessarily decided for those claims are, by definition, not identical to the issues necessarily decided for the asserted claims—confirmed as patentable in the IPR.

(d) The difference in burdens is relevant. Qualcomm does not dispute the black-letter rules that differences in burdens of proof affect the application of collateral estoppel. PV.Br.46-48. But, Qualcomm asserts, ParkerVision ignores the holding in *XY v. Trans Ova Genetics* that “an affirmance of an invalidity finding,

⁵ While irrelevant, Qualcomm’s assertions that ParkerVision’s experts contradicted the Board’s findings are misleading. Regarding the Nozawa and Phillips references (Q.Br.16), Qualcomm cites to a deposition exchange addressing an apparatus claim not at issue here (Appx42161). Regarding the Kraus reference (Q.Br.16), Qualcomm cites to testimony addressing a patent on which the Board denied Qualcomm’s petitions for IPR (Appx41363-41364). ParkerVision’s expert reports were consistent with the conclusions reached by the Board. Appx41192-41194, Appx41207-41208.

whether from a district court or the Board, has a collateral estoppel effect on all pending or co-pending actions.” 890 F.3d 1282, 1294 (Fed. Cir. 2018); Q.Br.63. This argument again suffers from the same misframing problem: the *XY* decision stands for the proposition that an affirmance of invalidity will collaterally estop assertions of patent claims raising identical questions of invalidity. *See XY*, 890 F.3d at 1293. By definition, the patent claims affirmed in the IPR do not raise questions of invalidity identical to the patent claims invalidated in the IPR.

2. The Court should address this issue to avoid judicial waste.

Qualcomm argues that “this Court should decline to consider ParkerVision’s appeal on the IPR collateral estoppel issue” (Q.Br.60) because, as ParkerVision noted in its opening brief, the district court’s summary judgment order did not rely on that particular application of collateral estoppel (PV.Br.48 & n.4). Nevertheless, ParkerVision respectfully asks the Court to address the issue to ensure that ParkerVision will not be bound by the erroneous legal determination on any remand. ParkerVision’s request is supported by the *XY* decision that Qualcomm cites, where this Court addressed a collateral estoppel issue—notwithstanding arguments that consideration of the issue was premature—to avoid “unnecessary judicial waste” on remand. *XY*, 890 F.3d at 1295. The same is true here.

CONCLUSION

The Court should reverse the judgment and reverse or vacate the underlying orders on summary judgment, collateral estoppel, and *Daubert*, and remand.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I certify that the foregoing Brief for Appellant ParkerVision, Inc.:

1. Complies with the type-volume limitation of Fed. Cir. R. 32(b)(1). This brief contains 6,990 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f) and Fed. Cir. R. 32(b)(2). Microsoft Word was used to calculate the word count.

2. Complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6). This brief has been prepared in a proportionally-spaced typeface using Microsoft Word in 14-point Times New Roman type style.

Dated: December 22, 2022

/s/ Joel L. Thollander

Joel L. Thollander