United States Court of Appeals for the Federal Circuit

PARKERVISION, INC.,
Plaintiff-Appellant

v.

QUALCOMM INCORPORATED, QUALCOMM ATHEROS, INC.,
Defendants-Appellees

2022-1755, 2024-2221

Appeal from the United States District Court for the Middle District of Florida in No. 6:14-cv-00687-PGB-LHP, Judge Paul G. Byron.

Decided: September 6, 2024

JOSHUA WRIGHT BUDWIN, McKool Smith, P.C., Austin, TX, argued for plaintiff-appellant. Also represented by MATTHEW CAMERON, JOEL LANCE THOLLANDER, RAYMOND MITCHELL VERBONCOEUR; KEVIN L. BURGESS, Marshall, TX.

EAMONN GARDNER, Cooley LLP, Denver, CO, argued for defendants-appellees. Also represented by MATTHEW J. BRIGHAM, DENA CHEN, JEFFREY S. KARR, BENJAMIN S. LIN, PRIYA B. VISWANATH, Palo Alto, CA; STEPHEN SMITH,

Washington, DC; MICHAEL EDWARD LOCKAMY, Bedell, Dittmar, DeVault, Pillans & Coxe, P.A., Jacksonville, FL.

Before LOURIE, MAYER, and STARK, *Circuit Judges*.

STARK, *Circuit Judge*.

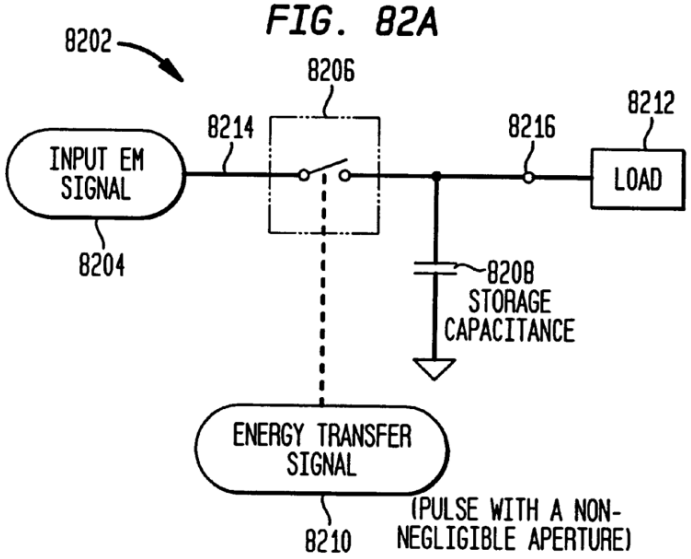
More than nine years ago, we affirmed a judgment as a matter of law ("JMOL") of non-infringement in a patent infringement action brought by ParkerVision, Inc. ("ParkerVision") against Qualcomm Inc. ("Qualcomm") relating to wireless communications technology. *ParkerVision, Inc. v. Qualcomm Inc.*, 621 F. App'x 1009 (Fed. Cir. 2015) ("*ParkerVision I*"). ParkerVision also filed a second infringement suit against Qualcomm on different but related patents. The latter case, which we will refer to as the "2014 Action," concluded with the district court granting Qualcomm's motion for summary judgment of non-infringement based on collateral estoppel arising from *ParkerVision I*. *ParkerVision, Inc. v. Qualcomm Inc.*, 2022 WL 1230505 (M.D. Fla. Mar. 22, 2022). The district court also granted Qualcomm's motions to exclude certain testimony ParkerVision had proposed to present through its validity and infringement experts ("*Daubert* motions"). ParkerVision now appeals the disposition of the 2014 Action. We vacate the judgment of non-infringement, reverse the exclusion of testimony, and remand for further proceedings.

I

The litigation saga between ParkerVision and Qualcomm dates back to 2011, when ParkerVision sued Qualcomm in the United States District Court for the Middle District of Florida, alleging infringement of its patented technology relating to "down-converting" electromagnetic signals (the "2011 Action"). As we described in our *ParkerVision I* decision – which ended the 2011 Action by affirming the district court's grant of JMOL of non-infringement – "'[d]own-converting' refers to converting a

modulated high-frequency electromagnetic signal into a low-frequency or 'baseband' signal in an electronic device such as a wireless receiver." *ParkerVision I*, 621 F. App'x at 1011. ParkerVision's down-converting system uses a technique called "energy sampling," which "differs from the technique of 'voltage sampling,' which was used in conventional down-converting systems." *Id.* As depicted in Figure 82A of one of the patents at issue in the 2011 Action, U.S. Patent No. 6,061,551 ("'551 patent"), the circuit of ParkerVision's down-converting system "consists of an electronic switch [8206] connected on one end to an input electromagnetic signal [8204] and on the other end to a storage capacitor [8208] . . . [and] a load device [8212]." *Id.*

FIG. 82A



In the 2011 Action, a jury returned a verdict "rejecting Qualcomm's invalidity claims and finding that Qualcomm directly and indirectly infringed" multiple claims across four asserted patents. *Id.* at 1012. Following the verdict, Qualcomm filed motions for JMOL or alternatively a new trial on infringement and invalidity issues. The district court granted Qualcomm's motion for JMOL of non-

infringement but denied the motions relating to invalidity. Both ParkerVision and Qualcomm appealed.

On appeal, we treated claim 23 of the '551 patent as representative of all claims asserted in the 2011 Action. *See id.* (parties agreeing that differences among other asserted claims did "not materially affect the issues on appeal"). Claim 23 of the '551 patent recites:

> An apparatus for down-converting a carrier signal to a lower frequency signal, comprising:
>
> 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*.

'551 patent at 116:24-36 (emphasis added).

The last limitation of claim 23, "wherein said storage module receives non-negligible amounts of energy transferred from a carrier signal . . . wherein a lower frequency signal is generated from the transferred energy," is referred to as the "generating limitation." This "generating limitation" was the focus of the disputed issues in *ParkerVision I* and is again in this latest appeal as well.

In *ParkerVision I*, 621 F. App'x at 1017, we affirmed the district court's grant of JMOL of non-infringement. In doing so, we found that the generating limitation of the claims asserted in the 2011 Action required that "the accused products produce a low-frequency baseband signal using energy that has been transferred . . . into a storage medium, such as a capacitor or set of capacitors." *Id.* at 1013. In other words, in order to infringe representative claim 23 of the '551 patent, the down-converting had to occur at a point in the circuit located *at or after* the capacitor. Based primarily on the trial testimony of ParkerVision's expert, who opined that in Qualcomm's accused products the down-converted baseband signal "already exists *before* the capacitor," we found that "Qualcomm products obtained the [down-converted] baseband signal from 'somewhere other than' the energy stored in the capacitors, precluding a finding of infringement." *Id.* at 1014 (emphasis added). We subsequently denied ParkerVision's petition for rehearing. *See ParkerVision, Inc. v. Qualcomm Inc.*, 627 F. App'x 921 (Fed. Cir. 2015).

In 2014, while Qualcomm's motions for JMOL or alternatively a new trial were pending in the 2011 Action, ParkerVision filed another action against Qualcomm in the Middle District of Florida (the "2014 Action"), asserting several patents that had not been at issue in the 2011 Action, including (as relevant to this appeal) U.S. Patent Nos. 7,218,907 ("'907 patent") and 6,091,940 ("'940 patent"). The '907 patent is in the same family as the '551 patent and teaches technology relating to down-conversion. The '940 patent is unrelated to the '551 patent and describes down-conversion as well as technology relating to "up-converting" of electromagnetic signals. "Up-converting" refers to converting a low-frequency or baseband electromagnetic signal into a high-frequency electromagnetic signal. While down-conversion typically occurs after a wireless device receives a transmitted signal, up-conversion typically occurs before a wireless device transmits signals.

In the 2014 Action, ParkerVision asserted certain claims primarily directed to down-conversion, referred to by the parties as "receiver claims," and others primarily directed to up-conversion, referred to as the "transmitter claims."[1] The receiver claims, according to the district court, include claims 1 and 10 of the '907 patent and claims 24 and 331 of the '940 patent. Illustrative of the receiver claims are claim 1 of the '907 patent and claim 24 of the '940 patent. Claim 1 of the '907 patent recites:

> A method for down-converting an electromagnetic signal, comprising:
>
> periodically coupling an electromagnetic signal that includes a carrier signal to an energy storage device and a load, wherein the periodic couplings occur at a rate less than twice the frequency of the carrier signal;
>
> providing, during the periodic couplings, energy from the electromagnetic signal to the energy storage device, thereby changing an amount of energy stored by the energy storage device;
>
> providing, during the periodic couplings, energy from the electromagnetic signal to the load; and
>
> providing, between the periodic couplings, energy from the energy storage device to the load, thereby changing the amount of energy stored by the energy storage device;

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[1] The "transmitter claims," according to the district court, include claims 22 and 25 of the '940 patent and two claims of a patent that is not relevant to the issues raised in this appeal.

> whereby the energy provided to the load forms a down-converted signal.

'907 patent at 130:64-131:14.

Claim 24 of the '940 patent depends from independent claim 22, which itself is a transmitter claim. Claim 22 recites:

> An apparatus for communicating comprising:
>
> (a) a transmitting subsystem comprising:
>
> (1) a switch module having a first input connected to a bias signal, a control input connected to a control signal, and an output generating a periodic signal, wherein said control signal is an oscillating signal, said control signal causing said switch module to gate said bias signal, said periodic signal having an amplitude that is a function of said bias signal, and said periodic signal being a harmonically rich signal comprised of a plurality of harmonics, and
>
> (2) a filter to accept said harmonically rich signal and to output one or more desired harmonics from said plurality of harmonics; and
>
> (b) a receiving subsystem.

'940 patent at 69:33-47. Claim 24 recites:

> The apparatus of claim 22, wherein said receiving subsystem comprises:
>
> an aliasing module, further comprising:
>
> (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;
>
> (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.

Id. at 69:54-67.

Neither of the illustrative receiver claims (claim 1 of the '907 patent and claim 24 of the '940 patent) contains an explicit requirement that the down-converted signal be generated from energy transferred to an energy storage device. That is, the receiver claims asserted in the 2014 Action do not appear, on their face, to require the "generating limitation" that turned out to be fatal to ParkerVision's infringement case in the 2011 Action.

During the pendency of the 2011 and 2014 Actions, Qualcomm filed several petitions for *inter partes* review ("IPR") of ParkerVision's '940 patent. Meanwhile, ParkerVision sued Qualcomm at the U.S. International Trade Commission ("ITC"). The parties jointly requested that the district court stay the 2014 Action pending resolution of the IPRs and the ITC proceedings, which the district court agreed to do.

In one of the IPRs, Qualcomm challenged the patentability of apparatus and method claims relating to up-conversion, including claim 25 of the '940 patent. This same claim was asserted as one of the transmitter claims in the 2014 Action. The apparatus and method claims that were considered in the IPRs share certain limitations, including the requirement of generating or creating "a periodic signal having a plurality of harmonics." *Id.* at 69:27-28

(apparatus claim 21), 70:5-6 (method claim 25). We will refer to this as the "harmonically rich signal" limitation.

In its final written decision, the Patent Trial and Appeal Board ("Board") determined that the challenged apparatus claims of the '940 patent are unpatentable as obvious because the prior art taught an apparatus that was "capable of" performing functions that would satisfy the limitations of the apparatus claims. J.A. 38997. The Board, however, determined that Qualcomm failed to prove the challenged method claims would have been obvious, because Qualcomm's petition did not address whether a person of ordinary skill in the art would have been motivated to operate the prior art apparatus in a manner that would satisfy the limitations of the method claims. On appeal, we affirmed the Board's patentability determinations. *See ParkerVision, Inc. v. Qualcomm Inc.*, 903 F.3d 1354, 1362-63 (Fed. Cir. 2018) ("*ParkerVision II*").

Thereafter, in December 2018, the district court lifted its stay in the 2014 Action and instructed the parties to "address whether any patents and claims brought in the instant litigation are affected by *ParkerVision I*." J.A. 5989. Qualcomm responded with a motion for partial summary judgment of non-infringement of the receiver claims of the '907 patent, based on collateral estoppel arising from *ParkerVision I* (the "First Motion"). In this First Motion, Qualcomm contended that the receiver claims of the '907 patent included "the same concept" as the "generating limitation" of the claims asserted in the 2011 Action, so ParkerVision could no longer argue that Qualcomm infringed these claims. J.A. 9624.

The district court denied Qualcomm's First Motion, finding that Qualcomm failed to "show there is no material difference between the patents-at-issue in *ParkerVision I* and the claims now asserted by ParkerVision" in the 2014 Action. J.A. 10344. Specifically, the district court determined there was expert support in the record for

ParkerVision's position that, unlike the 2011 Action claims containing the generating limitation – which required energy stored in the capacitors to be used to create the down-converted baseband signal – the receiver claims of the '907 patent may only "require[] 'a down-converted signal' formed in a load using energy taken directly from the electromagnetic signal, without charging and discharging a capacitor." J.A. 10343. Thus, in connection with the First Motion, the district court contrasted the generating limitation of the 2011 Action asserted claims, which required that the down-converting occur *at or after* the capacitor, with the receiver claims at issue in the 2014 Action, which the court recognized might lack the generating limitation and, therefore, would not exclude down-converting occurring *before* the capacitor.

As trial approached in the 2014 Action, Qualcomm filed *Daubert* motions seeking, as relevant to this appeal, (1) exclusion of the testimony of ParkerVision's validity expert, on the grounds that collateral estoppel arising from our affirmance in *ParkerVision II* of the '940 patent IPR precludes ParkerVision from attempting to contradict any of the Board's findings, and (2) exclusion of testimony from ParkerVision's infringement experts based on its unreliability, due to the experts' failure to conduct allegedly necessary testing and simulations. Qualcomm also moved again for summary judgment of non-infringement (the "Second Motion"), contending, as relevant here, that (1) ParkerVision is collaterally estopped from asserting Qualcomm infringes the receiver claims of the '907 and '940 patents, and (2) the accused products do not infringe the transmitter claims because they do not meet the "harmonically rich signal" limitation.

The district court granted Qualcomm's *Daubert* motions, finding that *ParkerVision II*, affirming the PTAB's invalidation of the challenged apparatus claims '940 patent, collaterally estopped ParkerVision from relitigating characteristics of the prior art reference on which

Qualcomm's invalidity contentions rested. The district court also excluded certain infringement expert testimony, including testimony relating to infringement of the transmitter claims of the '940 patent, based on its view that the experts' opinions were unreliable.

The district court then granted Qualcomm's Second Motion. The court concluded that Qualcomm's accused products would not infringe the receiver claims of the '907 and '940 patents because "there is no material dispute over whether the claims at issue here are materially similar to those in *ParkerVision I*," in which we had affirmed the judgment of non-infringement. J.A. 8. With respect to the transmitter claims of the '940 patent, the district court determined that because it had excluded the testimony of ParkerVision's infringement experts, Qualcomm's expert's non-infringement opinion was unrebutted. Therefore, the district court granted summary judgment of non-infringement of the transmitter claims as well.

ParkerVision timely appealed. After briefing was completed and oral argument was heard on November 6, 2023, we determined sua sponte that we lacked jurisdiction over the appeal because Qualcomm's counterclaims for invalidity remained unadjudicated and, consequently, there was no final judgment. *See* No. 2022-1755 ECF No. 59 at 2. On July 16, 2024, we dismissed the appeal for lack of jurisdiction, subject to reinstatement, with the reinstated appeal to be decided by the same panel based on the briefs already filed and the oral argument heard. *See id.*

On August 1, 2024, the district court entered a new judgment, which incorporated its prior order granting Qualcomm's summary judgment of non-infringement and its prior judgment in favor of Qualcomm and against ParkerVision, and also expressly dismissed without prejudice Qualcomm's counterclaims for invalidity and any remaining claims and counterclaims in the case. *See ParkerVision, Inc. v. Qualcomm Inc.*, No. 6:14-cv-687-PGB-LHP,

ECF No. 699 (M.D. Fla. Aug. 1, 2024). On August 5, 2024, ParkerVision appealed from the August 1 final judgment.

We reinstated ParkerVision's initial appeal (No. 2022-1755) and consolidated it with the new appeal (No. 2024-2221). We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

We review the district court's grant of summary judgment according to the law of the applicable regional circuit. *See Lanard Toys Ltd. v. Dolgencorp LLC*, 958 F.3d 1337, 1341 (Fed. Cir. 2020). The Eleventh Circuit reviews a grant of summary judgment de novo, "construing the facts and drawing all reasonable inferences in favor of the nonmoving party." *Brucker v. City of Doraville*, 38 F.4th 876, 881 (11th Cir. 2022) (internal quotation marks omitted). Summary judgment is appropriate when "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); *see also Huggins v. Lueder, Larkin & Hunter, LLC*, 39 F.4th 1342, 1345 (11th Cir. 2022). "A genuine dispute of material fact exists when 'the evidence is such that a reasonable jury could return a verdict for the nonmoving party.'" *Fernandez v. Trees, Inc.*, 961 F.3d 1148, 1152 (11th Cir. 2020) (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)).

We also apply regional circuit law when reviewing a district court's evidentiary rulings. *See Omega Pats., LLC v. CalAmp Corp.*, 13 F.4th 1361, 1368 (Fed. Cir. 2021). The Eleventh Circuit "review[s] a district court's evidentiary rulings for abuse of discretion." *Great Lakes Ins. SE v. Wave Cruiser LLC*, 36 F.4th 1346, 1353 (11th Cir. 2022). A district court abuses its discretion "where its decision rests upon a clearly erroneous finding of fact, an errant conclusion of law, or an improper application of law to fact." *Furcron v. Mail Ctrs. Plus, LLC*, 843 F.3d 1295, 1304 (11th Cir. 2016) (internal quotation marks omitted).

III

ParkerVision raises three issues on appeal. First, ParkerVision contends that the district court erred in granting summary judgment of non-infringement based on the purported collateral estoppel effect of *ParkerVision I*. Second, ParkerVision argues that the district court erred in applying collateral estoppel to prevent its validity expert from offering testimony that would have been arguably inconsistent with the Board's findings during the IPR that resulted in invalidation of the apparatus claims of the '940 patent. Finally, ParkerVision asserts that the district court abused its discretion in excluding its infringement experts' testimony as unreliable. On all three issues, we agree with ParkerVision.

A

We begin with the district court's grant of Qualcomm's Second Motion, which resulted in entry of summary judgment of non-infringement of the receiver claims of the '907 and '940 patents, based on application of collateral estoppel arising from our *ParkerVision I* decision.[2]

Determining whether collateral estoppel, also known as issue preclusion, applies presents a procedural question we evaluate according to regional circuit law. *See Soverain Software LLC v. Victoria's Secret Direct Brand Mgmt., LLC*, 778 F.3d 1311, 1314 (Fed. Cir. 2015); *see also Uniloc USA, Inc. v. Motorola Mobility LLC*, 52 F.4th 1340, 1346 n.3 (Fed. Cir. 2022). The Eleventh Circuit applies

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[2] The district court's grant of the Second Motion also resulted in summary judgment of non-infringement of the transmitter claims of the '940 patent. We address this aspect of the Second Motion in connection with our ruling on the exclusion of ParkerVision's infringement expert testimony. *See infra* Part III.C.

collateral estoppel where the following four elements are satisfied:

> (1) the issue at stake must be identical to the one involved in the prior litigation; (2) the issue must have been actually litigated in the prior suit; (3) the determination of the issue in the prior litigation must have been a critical and necessary part of the judgment in that action; and (4) the party against whom the earlier decision is asserted must have had a full and fair opportunity to litigate the issue in the earlier proceeding.

CSX Transp., Inc. v. Bhd. of Maint. of Way Emps., 327 F.3d 1309, 1317 (11th Cir. 2003).[3] We apply our own law to questions involving substantive issues of patent law, including any aspects of collateral estoppel that may have special or unique application to patent cases. *See Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013). Thus, for instance, "the question whether a particular claim in a patent case is the same as or separate from another claim has special application to patent cases, and we therefore apply our own law to that issue." *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1341 n.1 (Fed. Cir. 2012). Whether collateral estoppel applies is a question of law we review de novo. *See Miccosukee*

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[3] The outcome would be the same under Federal Circuit law, which requires essentially the same four elements for collateral estoppel. *See Empresa Cubana Del Tabaco v. Gen. Cigar Co.*, 753 F.3d 1270, 1276 (Fed. Cir. 2014) ("Issue preclusion requires four preconditions to erect a bar to relitigation: (1) identity of the issues in a prior proceeding; (2) actual litigation of those issues; (3) necessity of the prior determination to the resulting judgment; and (4) full and fair opportunities to litigate issues for the party defending against preclusion.").

Tribe of Indians of Fla. v. U.S. Army Corps of Eng'rs, 619 F.3d 1289, 1296 (11th Cir. 2010); *see also Aspex Eyewear, Inc. v. Zenni Optical Inc.*, 713 F.3d 1377, 1380 (Fed. Cir. 2013).

Here, the parties agree that all but the first of the four requirements for collateral estoppel are satisfied. They agree that (1) the issue of whether the accused Qualcomm products infringe the claims asserted in the 2011 Action was actually litigated, (2) the determination of that issue was a critical and necessary part of the judgment in that action, and (3) ParkerVision had a full and fair opportunity to litigate the infringement issue in that earlier proceeding. The sole dispute concerns whether the infringement issue in this case (the 2014 Action) is identical to the infringement issue litigated in the 2011 Action.

The parties have stipulated that the accused products at issue here operate, in all material respects, in the same manner as the products accused of infringement in the 2011 Action. Therefore, determining whether the infringement issue here is the same as the infringement issue in the 2011 Action requires only an assessment of whether the receiver claims of the '907 and '940 patents asserted in this case are materially the same as the claims that were the basis for the finding of non-infringement in the 2011 Action. Evaluating this issue requires a comparison of the scope of the claims at issue in the 2011 Action with the scope of the claims asserted here. *See Ohio Willow*, 735 F.3d at 1342 (explaining collateral estoppel applies when "the differences between the unadjudicated patent claims and adjudicated patent claims do not materially alter the question" at issue). The determination of claim scope, in turn, is "a matter of claim construction." *Ottah v. Fiat Chrysler*, 884 F.3d 1135, 1139 (Fed. Cir. 2018) (internal quotation marks omitted).

Consistent with this legal framework, the district court correctly identified the dispositive issue as being "whether

the claims [in this 2014 Action] are materially different from those in *ParkerVision I*." J.A. 7 n.5. To resolve this issue, however, the district court did not undertake claim construction; nor did it analyze the claim language or consult any other intrinsic evidence to determine the scope of the claims asserted in this action. Instead, the district court relied on Qualcomm's expert reports, which it found to be "unrebutted," J.A. 8, and from this extrinsic evidence concluded that "the [r]eceiver [c]laims at issue here have the same requirements as the claims in *ParkerVision I*, including the 'generating limitation.'" J.A. 7 (citing, *e.g.*, J.A. 49082-103, 50497-500). The district court's analysis suffers from several errors.

First, the district court erred by failing to assess claim scope by conducting claim construction according to the process we set out in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Instead, as we just noted, the district court relied principally on extrinsic evidence, particularly Qualcomm's expert opinion. The proper approach to determining claim scope is to "look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Extrinsic evidence, including expert and inventor testimony, dictionaries, and treatises, is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (internal quotation marks omitted). Additionally, and importantly, "[e]xtrinsic evidence may not be used to contradict claim meaning that is unambiguous in light of the intrinsic evidence." *Profectus Tech. LLC v. Huawei Techs. Co.*, 823 F.3d 1375, 1380 (Fed. Cir. 2016) (internal quotation marks omitted). Hence, the district court erred by ignoring the relevant intrinsic evidence and turning directly to the extrinsic evidence in determining that the receiver claims asserted in this case have

materially the same scope as the claims that were at issue in *ParkerVision I*.[4]

Second, the district court erred by treating Qualcomm's expert opinion as "unrebutted," and concluding as a consequence there is "no material dispute over whether the claims at issue here are materially similar to those in *ParkerVision I*." J.A. 8. While ParkerVision's expert was not as explicit about his opinion as Qualcomm's expert – ParkerVision's expert did not provide claim charts comparing the limitations of the 2011 Action claims to the 2014 Action receiver claims and did not precisely state that the generating limitation is omitted from the receiver claims asserted here – it is evident and indisputable that he repeatedly opined that there are material differences in the scope of the claims involved in the two cases that would materially alter the question of infringement. In particular, ParkerVision's expert opined that Qualcomm's accused products infringe the asserted receiver claims of the '907 and '940 patents because the "down converted signal exists at the output of the mixer," which is a point *before* the capacitor. J.A. 40334. Because the claims in *ParkerVision I*, containing the generating limitation, could only be infringed if the down-conversion occurred at a point *at or*

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[4] We are not persuaded by Qualcomm's suggestion that ParkerVision "invited" the district court's error of assessing claim scope without conducting claim construction and largely without considering the intrinsic evidence. Appellees' Br. at 42. Qualcomm, as the party invoking collateral estoppel and the party moving for summary judgment, bears the burden of proving the identity of the issues litigated in the 2011 and 2014 Actions. *See In re McWhorter*, 887 F.2d 1564, 1566 (11th Cir. 1989). Thus, if any party was obligated to request claim construction, it was Qualcomm, which sought to read into the receiver claims a limitation that is not expressly recited in the claims.

after the capacitor, *see ParkerVision I*, 621 F. App'x at 1013-16, the expert's infringement opinion was necessarily predicated on his understanding that the claims asserted here do not contain the generating limitation. More specifically, ParkerVision's first expert, Dr. Allen, submitted a declaration (more on that below) opining that claim 1 of the '907 patent "describes the energy that is provided to the load (during periodic couplings) from the electromagnetic signal, *without passing through the energy storage device*," adding that "energy provided to the load, including the energy provided *directly from the electromagnetic signal*, forms a down-converted signal." J.A. 10091 (emphasis added). This opinion is plainly in conflict with the generating limitation's requirement that down-conversion occur "using energy that has been transferred . . . into a storage medium." *ParkerVision I*, 621 F. App'x at 1013.

The district court's abbreviated claim scope analysis in connection with the Second Motion was inconsistent with the approach it properly took in denying Qualcomm's First Motion. At that earlier point in the litigation, the district court found "a material issue of fact precluding summary judgment" based on the declaration filed by ParkerVision's expert, Dr. Allen. J.A. 10344. The district court made no subsequent determination that the Allen declaration on which it had relied in denying the First Motion was no longer a part of the record when it considered the Second Motion. It appears that neither party asked the district court to strike the Allen declaration, nor to consider or ignore it.[5] Moreover, as we have already pointed out, the

[5] After the court denied the First Motion, Dr. Allen withdrew from the case, due to health reasons, and was replaced by Dr. Steer, who adopted Dr. Allen's expert reports in their entirety. The record appears to contain an ambiguity as to whether Dr. Steer also adopted the Allen

district court did not ever expressly construe the receiver claims asserted here to include the generating limitation. Therefore, the record contained the same genuine dispute of material fact that had compelled the denial of the First motion. Thus, the trial court erred by treating Qualcomm's expert testimony as "unrebutted" and concluding there was "no material dispute over whether the claims at issue here are materially similar to those in *ParkerVision I*." J.A. 8.

The trial court's error is further demonstrated by comparing our conclusions in *ParkerVision I* with the question presented in the Second Motion. In *ParkerVision I*, 621 F. App'x at 1013, we concluded that the generating limitation in each of the claims asserted in the 2011 Action "requires that the accused products produce a low-frequency [*i.e.*, down-converted] 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." This meant that the down-conversion of the signal had to occur *at or after* the capacitor. Our affirmance of the judgment of non-infringement of claim 23 of the '551 patent was based on the undisputed fact that Qualcomm's accused products do not practice the generating limitation, as they down-convert the baseband signal *before* the capacitor. *See id.* (ParkerVision expert testifying in 2011 Action that down-converted baseband signal in accused products "has already been created *before the signal reaches the identified capacitors*") (emphasis added).

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declaration – and whether doing so was necessary, as it appears ParkerVision reasonably understood the collateral estoppel issue to have been conclusively resolved in its favor at the time it substituted Dr. Steer for Dr. Allen. We leave it for the district court on remand to determine whether the Allen declaration is or should be part of the pertinent record (and, if requested, whether to permit expansion of the record).

The case now before us involves the same accused products but different claims and, potentially, a materially different infringement question. None of the asserted receiver claims of the '907 or '940 patents expressly includes the generating limitation or appears to otherwise include a requirement that the down-converted signal be generated from the energy transferred to an energy storage device, such as a capacitor. That is, none of the asserted receiver claims in this case appears to require that the down-conversion occur *at or after* the capacitor; instead, the claims involved here appear to permit the down-conversion to occur *before* the capacitor. In fact, ParkerVision's infringement contentions allege, with expert support, that the capacitor may not even be involved in the down-conversion.[6] Absent a claim construction finding a generating limitation or similar requirement to be part of the claims, the Qualcomm accused products might infringe the receiver claims in this action even if they are found to down-convert the signal before the capacitor. Thus, we agree with ParkerVision that there is at least a dispute as to the scope of the asserted receiver claims of the '907 and '940 patents.

Consequently, summary judgment of non-infringement based on collateral estoppel is not warranted at this stage. Instead, we vacate the grant of summary judgment and remand for the district court to determine the scope of the

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[6] Dr. Allen opined in his expert report, which was adopted by Dr. Steer, that Qualcomm's accused products infringe the relevant limitations of, for example, claim 1 of the '907 patent because, during periodic couplings, "a down-converted signal exists at the output of the mixer," J.A. 40334, a point *before* the capacitor, meaning that the capacitor may not be involved in the down-conversion.

asserted receiver claims and further to determine whether that scope is materially different from that of the claims at issue in the 2011 Action.

In defending the grant of summary judgment of collateral estoppel, Qualcomm relies heavily on ParkerVision's experts in this case, who testified in deposition that the receiver claims of the '907 and '940 patents "require that you produce a lower-frequency signal using energy that's been transferred from a higher-frequency signal into a storage medium." J.A. 42088. We agree that this testimony might be understood as an admission that the claims asserted in this case include a generating limitation or similar requirement. However, this is not the sum total of opinions ParkerVision's experts provide; they also both opined, as already noted, that the receiver claims at issue here do *not* require that the down-conversion occur *at or after* the capacitor. *See, e.g.*, J.A. 10091, 40334. When the totality of the record evidence is taken in the light most favorable to ParkerVision, as the nonmovant, there is sufficient evidence from which a reasonable juror could choose to credit ParkerVision's experts' infringement opinions rather than view the deposition statements as admissions of non-infringement. *See generally Insituform Techs., Inc. v. CAT Contracting, Inc.*, 385 F.3d 1360, 1377 (Fed. Cir. 2004) (vacating summary judgment because totality of testimony, including "inconsistent testimony" of witness, "created a disputed issue of material fact"); *see also ACLU of Fla., Inc. v. Dixie Cnty.*, 690 F.3d 1244, 1249 (11th Cir. 2012) ("If an affidavit differs from the statements made in a deposition, the two in conjunction may disclose an issue of credibility. Under such circumstances, a district court is not free to credit one piece of evidence and ignore the other.") (internal citation and quotation marks omitted).

Qualcomm next faults ParkerVision for asserting a position that creates further factual disputes. For example, with respect to claim 1 of the '907 patent, Qualcomm argues that if a down-converted signal already exists with the

energy that flows directly to the load, then the energy provided to the load would not "form" a down-converted signal, as required by claim 1 of the '907 patent. *See* '907 patent at 131:13-14 ("whereby the energy provided to the load forms a down-converted signal"). ParkerVision counters that the term "forms," which it argues connotes "shapes," has a different meaning than "generates" or "creates." Appellant's Reply Br. at 10. With respect to claim 24 of the '940 patent, Qualcomm contends that if the electromagnetic signal is down-converted by the UFT module (a type of switch), then other claim limitations, including "a storage device," would serve no purpose. ParkerVision responds that the UFT module down-converts a signal while the storage device stores energy from the UFT module. Regardless of the merits of the parties' competing positions on these (and other) points, the existence of potentially material fact disputes only makes all the more clear the need for additional proceedings on remand.

As a final effort to persuade us that summary judgment was appropriate, Qualcomm points to instances on which ParkerVision has relied on similarities between the receiver claims at issue here and the claims adjudicated in *ParkerVision I*. Qualcomm shows that ParkerVision relied on the same figures to explain the receiver claims in the 2014 Action that it used to explain the claims in the 2011 Action, and also notes that ParkerVision moved to sever and stay the receiver claims in this case during the pendency of the appeal from the 2011 Action, based on similarities between the two sets of claims. These generalized acknowledgments of some overlap between the claims do not, however, constitute admissions that the patent claims themselves are materially the same in the two actions.

In sum, the district court erred by concluding, without expressly assessing through the ordinary claim construction process, that the scope of the claims asserted here is materially the same as the scope of those at issue in *ParkerVision I*. While claim construction is ultimately a

question of law, *see Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S 318, 320 (2015) ("The ultimate construction of the claim is a legal conclusion that the appellate court can review *de novo*."), in this appeal we are not well-positioned to undertake claim construction in the first instance. The parties have not provided us with claim construction briefing. Moreover, extrinsic evidence, including the testimony of the parties' competing experts, may need to be considered. Subsidiary fact-finding in connection with claim construction is for the trial court to perform, subject to appellate review for clear error. *See id.* at 333. Thus, on remand, the district court should undertake any necessary claim construction and then determine whether the receiver claims asserted in this case have the same requirement as the generating limitation of the claims at issue in *ParkerVision I*. This will allow the district court to then assess whether there is a difference in claim scope that would materially alter the question of infringement of the receiver claims and, accordingly, whether summary judgment based on collateral estoppel is warranted.

B

ParkerVision next contends that the district court erred in precluding its expert from offering testimony to support the validity of the '940 patent method claims against Qualcomm's invalidity challenge. As we explained above, in the IPRs the Board found the '940 patent's apparatus claims invalid as obvious while at the same time rejecting the effort to prove that patent's method claims unpatentable. We affirmed both dispositions in *ParkerVision II*. In ruling on Qualcomm's *Daubert* motions, the district court agreed with Qualcomm that the collateral estoppel effect of having lost a substantial part of the IPRs meant ParkerVision was precluded from asking the district court (or a jury) – as part of its effort to withstand Qualcomm's challenge to the validity of the '940 patent's method claims, which survived Qualcomm's IPR – to reach different conclusions than the Board had with respect to up-

conversion technology and the prior art. The matter in question concerns the Board's factual findings concerning prior art. We disagree with the trial court and, hence, reverse the order excluding ParkerVision's validity expert.

As an initial matter, we reject Qualcomm's contention that we lack jurisdiction and cannot consider this aspect of ParkerVision's appeal. Qualcomm argues that the only final decision we are reviewing is the district court's judgment of non-infringement. Although Qualcomm presented a defense of invalidity, the district court did not make a final determination as to validity; it only made preliminary determinations as to what evidence could be presented to the jury if the case had gone forward on the issue of validity. Our jurisdiction to review district court judgments is generally limited to appeals from "a final decision of a district court." 28 U.S.C. § 1295(a)(1); *see also Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 857 F.3d 1347, 1350 (Fed. Cir. 2017). Our decision to vacate summary judgment of non-infringement, however, means there will be further proceedings on remand with respect to the asserted claims of the '940 patent, and those proceedings are likely to include Qualcomm's invalidity defense. If so, it is in the interest of judicial economy that we let the district court know now that it was wrong to exclude ParkerVision's validity expert's opinion, rather than allow the district court to resolve invalidity on an improperly truncated record, which could easily lead to yet another remand. Under such circumstances, we have discretion to review an issue we believe will be important on remand. *See, e.g.*, *Aspex Eyewear*, 672 F.3d at 1346-47 (vacating summary judgment of non-infringement on res judicata grounds and reviewing claim construction rulings in interest of judicial economy); *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1376 (Fed. Cir. 2014) (reviewing non-dispositive claim construction that might become important on remand); *Advanced Software Design Corp. v. Fiserv, Inc.*, 641 F.3d 1368, 1378 (Fed. Cir. 2011) (same).

The application of collateral estoppel is "subject to certain well-known exceptions." *B & B Hardware, Inc. v. Hargis Indus., Inc.*, 575 U.S. 138, 148 (2015). One is where "the second action involves application of a different legal standard, even though the factual setting of both suits may be the same." *Id.* at 154; *see also Grogan v. Garner*, 498 U.S. 279, 284-85 (1991) (explaining that prior judgment proven by preponderance of evidence "could not be given collateral estoppel effect" in subsequent proceeding governed by clear-and-convincing standard). Although we have not previously addressed the question of whether a finding underlying an unpatentability decision in an IPR proceeding collaterally estops a patentee from making validity arguments regarding separate, related claims in district court litigation, we now hold that it does not.

In the IPR proceedings, Qualcomm's burden of proof was only a preponderance of the evidence. *See Google LLC v. IPA Techs. Inc.*, 34 F.4th 1081, 1085 (Fed. Cir. 2022) ("In an IPR, the burden of persuasion is on the petitioner to prove unpatentability by a preponderance of the evidence.") (internal quotation marks omitted); *see also* 35 U.S.C. § 316(e). Accordingly, Qualcomm proved the capabilities of the prior art apparatus by a preponderance of the evidence. To prevail on its invalidity contentions in the district court, however, Qualcomm must meet a higher burden: clear and convincing evidence. *See Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 102 (2011) ("[A] defendant raising an invalidity defense bore a heavy burden of persuasion, requiring proof of the defense by clear and convincing evidence.") (internal quotation marks omitted). Qualcomm has not faced, let alone overcome, this burden previously. Thus, no finding of the Board (or our affirmance of the Board in *ParkerVision II*) estops ParkerVision from presenting evidence on the unresolved question of whether Qualcomm is able to prove the capabilities of the prior art apparatus (and the other components of its invalidity contention) by clear and convincing evidence. ParkerVision

should be provided an opportunity to defend the validity of its method claims, which were not shown to be unpatentable in the IPR, with evidence as to what the prior art considered by the Board does and does not disclose.

Our decision in *XY, LLC v. Trans Ova Genetics*, 890 F.3d 1282 (Fed. Cir. 2018), involved a different situation. In *XY*, we stated that "an affirmance of an *invalidity* finding, whether from a district court or the Board, has a collateral estoppel effect on all pending or co-pending actions." *Id.* at 1294 (emphasis added); *see also Packet Intell. LLC v. NetScout Sys., Inc.*, 100 F.4th 1378, 1381 (Fed. Cir. 2024); *Fresenius USA, Inc. v. Baxter Int'l, Inc.*, 721 F.3d 1330, 1344 (Fed. Cir. 2013). Once we have affirmed the invalidity of a patent claim – regardless of whether the case leading to that conclusion arose at the Board, applying a preponderance standard, or in the district court, applying the more stringent clear and convincing standard – the claim no longer exists and cannot be asserted as a basis for infringement and "the affirmance of an invalidity finding, whether from a district court or the Board, has a collateral estoppel effect on all pending or co-pending actions." *XY*, 890 F.3d at 1294. Where, as here, however, we are dealing with claims that have *not* been found unpatentable – which is true of the asserted method claims of the '940 patent – those claims remain presumptively valid and can only be found invalid in district court litigation by clear and convincing evidence.

Because the district court's application of collateral estoppel is legal error, the district court abused its discretion in excluding the testimony of ParkerVision's validity expert. Thus, we reverse the trial court's grant of Qualcomm's *Daubert* motion.

C

Finally, we turn to ParkerVision's contention that the district court erred in excluding the testimony of its infringement experts regarding how Qualcomm's accused

products satisfy several disputed limitations of the '940 transmitter claims, including "harmonically rich signal," "gating module," "switch module," and "non-negligible energy." The district court granted Qualcomm's *Daubert* motion excluding this evidence after finding the opinions at issue are "unreliable because [they] are not supported by testing and simulation" of the accused products. J.A. 32.

To be admissible, "proposed expert testimony must be supported by appropriate validation – *i.e.*, good grounds, based on what is known." *United States v. Doak*, 47 F.4th 1340, 1358 (11th Cir. 2022) (internal quotation marks omitted). Under Federal Rule of Evidence 703, an expert can have "good grounds" for his opinion even when he did not "obtain[] the basis for his opinion from personal perception." *Monsanto Co. v. David*, 516 F.3d 1009, 1015 (Fed. Cir. 2008). Instead, "experts can base their opinion on facts or data in the case 'that the expert has been made aware of.'" *St. Louis Condo. Ass'n, Inc. v. Rockhill Ins. Co.*, 5 F.4th 1235, 1245 n.8 (11th Cir. 2021) (quoting Federal Rule of Evidence 703). Moreover, "[a]s a general rule," in the Eleventh Circuit "questions relating to the bases and sources of an expert's opinion affect the weight to be assigned that opinion rather than its admissibility and should be left for the jury's consideration." *Carrizosa v. Chiquita Brands Int'l, Inc.*, 47 F.4th 1278, 1323 (11th Cir. 2022).

Here, it is undisputed that the materials considered by ParkerVision's experts included schematics and technical documents, which, as Qualcomm conceded, are the "type of documents . . . that experts in the field would reasonably consider in evaluating the operation of a circuit." J.A. 61095. Relatedly, we have observed that "reliance on scientific test results prepared by others may constitute the type of evidence that is reasonably relied upon by experts." *Monsanto*, 516 F.3d at 1015. There is, then, neither a factual nor legal basis here for finding that expert testimony is unreliable unless the expert herself undertakes to test or simulate the accused products. Indeed, even Qualcomm's

senior director of engineering agreed that, in this case, one could "come to an accurate understanding as to how one of the accused products works without the need to do an independent simulation," as long as one looked "solely at the simulation results that are contained in the design reviews." J.A. 5058. ParkerVision's experts did precisely what this Qualcomm witness testified would be sufficient. *See, e.g.*, J.A. 51073-85.

The district court's finding that testing and simulations were critical for the experts' testimony to be reliable appears to have been based on scientific literature to the effect that "'simulation is necessary to accurately predict detailed circuit behavior.'" J.A. 35 (quoting J.A. 40107). The district court also seemed to think that ParkerVision had admitted that tests and simulations were absolutely necessary. *See* J.A. 34 (quoting ParkerVision's argument that "it's really not possible to test the actual performance of a circuit in one of these computer chips without simulation"). The district court committed clear error in reading the literature's general statements, and ParkerVision's lawyers' arguments for discovery from Qualcomm, as establishing a prerequisite for a reliable infringement opinion in the specific context of this case. While Qualcomm's attacks on ParkerVision's experts may well persuade a jury not to credit the experts' infringement opinions, the district court should have left it to jurors to "evaluate the correctness of facts underlying an expert's testimony." *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 856 (Fed. Cir. 2010); *see also Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1221 (Fed. Cir. 2006) (finding expert's use of "incorrect data" and "wrong equations" in analysis "goes to the weight of the evidence rather than the admissibility of [the expert's] testimony and analysis").

Thus, we conclude that the district court abused its discretion by excluding the testimony of ParkerVision's infringement experts. We reverse the grant of Qualcomm's *Daubert* motions. We likewise vacate the district court's

grant of summary judgment of non-infringement of the transmitter claims of the '940 patent, which was based on the exclusion of ParkerVision's infringement experts.

IV

We have considered the remaining arguments made by Qualcomm and find them unpersuasive. For the foregoing reasons, we vacate the district court's entry of summary judgment of non-infringement, reverse its grant of the *Daubert* motions relating to ParkerVision's validity and infringement experts, and remand for further proceedings consistent with this opinion.

VACATED-IN-PART, REVERSED-IN-PART, AND REMANDED

COSTS

Costs awarded to appellant.