United States Court of Appeals for the Federal Circuit

FINESSE WIRELESS LLC,
Plaintiff-Appellee

v.

AT&T MOBILITY LLC, NOKIA OF AMERICA CORPORATION,
Defendants-Appellants

ERICSSON, INC.,
Defendant

2024-1039

Appeal from the United States District Court for the Eastern District of Texas in Nos. 2:21-cv-00316-JRG-RSP, 2:21-cv-00317-JRG, Judge J. Rodney Gilstrap.

Decided: September 24, 2025

PAUL D. CLEMENT, Clement & Murphy, PLLC, Alexandria, VA, argued for plaintiff-appellee. Also represented by C. HARKER RHODES, IV, KEVIN WYNOSKY; SHAWN DANIEL BLACKBURN, MEGAN E. GRIFFITH, JOSEPH SAMUEL GRINSTEIN, MENG XI, Susman Godfrey LLP, Houston, TX.

JEFFREY A. LAMKEN, MoloLamken LLP, Washington, DC, argued for all defendants-appellants. Defendant-

appellant Nokia of America Corporation also represented by JENNIFER ELIZABETH FISCHELL, KAYVON GHAYOUMI, RAYINER HASHEM.

MICHAEL HAWES, Baker Botts LLP, Houston, TX, for defendant-appellant AT&T Mobility LLC. Also represented by SUSAN KENNEDY, DOUGLAS M. KUBEHL.

Before MOORE, *Chief Judge*, LINN and CUNNINGHAM, *Circuit Judges*.

MOORE, *Chief Judge*.

AT&T Mobility LLC (AT&T) and Nokia of America Corporation (Nokia; collectively, Appellants) appeal the United States District Court for the Eastern District of Texas' denial of judgment as a matter of law (JMOL) of noninfringement for the asserted claims of U.S. Patent Nos. 7,346,134 and 9,548,775. Appellants also appeal the district court's denial of a new trial on damages. For the following reasons, we reverse the denial of JMOL and vacate the damages award.

BACKGROUND

Finesse Wireless LLC (Finesse) owns the '134 and '775 patents, which generally relate to methods for mitigating intermodulation product (IMP)[1] interference in radios.

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[1] Radios avoid signal interference by operating on different frequencies, but their transmit signals can combine when encountering obstacles (e.g., metal fences, loose cable connections, rusted connectors) to form new frequencies called "intermodulation products" (IMPs). J.A. 14892, 14920. IMPs caused by passive obstacles are called "passive intermodulation products" (PIM). J.A. 14895.

'134 patent at Abstract, 1:23–27; '775 patent at Abstract, 1:19–24. Finesse sued AT&T for allegedly infringing claims 1–3 of the '134 patent and claims 1, 4, 9, 16, 21, 29, and 36 of the '775 patent by using the PIM cancellation (PIM-C) feature in Nokia radios. J.A. 267–87. Nokia intervened. J.A. 389–90.

The jury found all asserted claims valid and infringed, and awarded $166,303,391 in lump-sum damages for the remaining life of the '134 and '775 patents. J.A. 169–71. Appellants moved for JMOL of noninfringement, JMOL on damages, and a new trial, all of which the district court denied. J.A. 1–72. Appellants appeal. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I. JMOL of Noninfringement

We review a district court's denial of JMOL under the law of the regional circuit, here the Fifth Circuit. *Wi-LAN, Inc. v. Apple Inc.*, 811 F.3d 455, 461 (Fed. Cir. 2016). The Fifth Circuit reviews denials of JMOL de novo, reversing "only if, when viewing the evidence in the light most favorable to the verdict, the evidence points so strongly and overwhelmingly in favor of one party that the court believes that reasonable jurors could not arrive at any contrary conclusion." *Id.* (citing Fifth Circuit law).

We review a jury's finding of infringement for substantial evidence. *Apple Inc. v. Wi-LAN Inc.*, 25 F.4th 960, 969 (Fed. Cir. 2022). "A factual finding is supported by substantial evidence if a reasonable jury could have found in favor of the prevailing party in light of the evidence presented at trial." *Id.* (internal citations omitted). We review

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Internal PIM is caused by mechanical issues inside the radio, while external PIM is caused by sources outside the radio. J.A. 15223–24.

claim construction de novo and any underlying factual findings supporting the district court's construction for clear error. *Wi-LAN*, 811 F.3d at 461.

A. '134 Patent

The '134 patent claims a method for reducing IMP interference by isolating "signals of interest" from "interference generating signals" and then canceling out the "interference generating signals" using a computed estimate of the IMPs. '134 patent at Abstract, 2:1–18. Claim 1 is representative.

> 1. A method comprising:
>
> [a] over-***sampling***, at a desired frequency, ***a passband of received signals to create a bit stream, wherein the received signals include signals of interest and interference generating signals***, the interference generating signals capable of generating intermodulation products inband of the signals of interest;
>
> [b] isolating signals of interest in the bit stream using one or more decimating filters;
>
> [c] isolating source signals that generate one or more intermodulation products inband of the signal of interest using one or more decimating filters;
>
> [d] computing an estimate of each of the one or more intermodulation products from the source signals that generate the one or more intermodulation products;
>
> [e] cancelling out one or more inband intermodulation products using the estimate of the intermodulation products; and
>
> [f] performing phase and amplitude adjustment on estimations of the intermodulation product interfering signals in a closed loop manner, wherein

> performing phase and amplitude adjustment of the estimations comprises performing sub-sample phase shifts to make a phase adjustment on the estimations of the intermodulation product interfering signals.

Id. at 28:2–26 (emphases added).

As the plaintiff, Finesse bore the burden of proving the accused radios sample a passband of signals that includes both the "signals of interest" and "interference generating signals." *Id.* at 28:1–6 (limitation 1[a]). Appellants argue Finesse failed to show the accused radios sample the "signals of interest" and "interference generating signals." Appellants Br. 35–45. We agree.

At trial, Finesse's infringement expert, Dr. Jonathan Wells, testified the accused radios infringe the asserted claims of the '134 patent by relying on a Nokia technical document depicting how the accused radios operate. *See* J.A. 14914–21, 15009–19; J.A. 26421 (Nokia document, reproduced below).

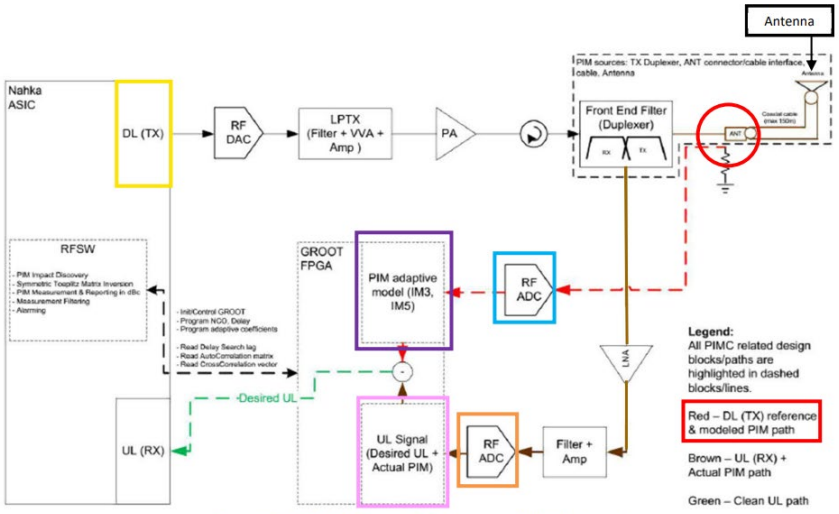

Figure 1: PIMC Overall Behavioral Architecture

Finesse Br. 15 (annotating J.A. 26421).

Dr. Wells testified the radio frequency analog-to-digital converter (RF ADC, depicted in blue box) is a receiver that samples the claimed "signals of interest" and "interference generating signals" (both depicted in dashed red path) to create a bit stream. J.A. 14914 at 46:8–10, 14918 at 50:20–24, 14925 at 57:3–8. Dr. Wells consistently and repeatedly testified he mapped "signals of interest" to the downlink transmit (DL(TX)) reference and "interference generating signals" to the modeled PIM path (both depicted in the dashed red path as explained in red box under legend). *See, e.g.*, J.A. 14918 at 50:16–19 ("The downlink TX reference is the signal of interest."), 14920–21 at 52:22–53:1 ("the model PIM path would be . . . the signal [that] is causing the intermodulation products in band at the signal of interest"), 15009 at 141:10–14 ("[Q.] So here you identified the modeled PIM path to be the interference generating signals capable of generating intermodulation products in-band of the signal of interest. Correct? A. Yes, I did."). Dr. Wells' expert report similarly opined "[t]he 'DL (TX) reference' signal . . . meets the agreed construction of a 'signal(s) of interest'" and "the 'modeled PIM signal' is the 'interference generating signal.'" J.A. 4476–77 ¶ 343.

On cross-examination, Appellants' counsel pointed out the RF ADC cannot sample the modeled PIM path because the modeled PIM path is generated downstream of the RF ADC after sampling occurs, and signals cannot be sampled before they are generated. J.A. 15010 at 142:12–14; *see also* J.A. 15010–11 at 142:21–143:5, 15019 at 151:4–13. The result being that the modeled PIM path *cannot* be the claimed "interference generating signals." In response, Dr. Wells pivoted and testified, "there's two signals on that red path because we know that because there's the x1 and the x2." J.A. 15010 at 142:15–16. Dr. Wells did not testify that x1 and x2 map onto the "signals of interest" and "interference generating signals" and instead continued to testify "the – two signals are the downlink TX reference and the modeled PIM path." J.A. 15010 at 142:19–20; *see also*

J.A. 15011 at 143:20–22 ("[T]he red path is the downlink TX reference and the modeled PIM path. It's the two signals."), 15017 at 149:7–9 ("[Q.] But you identify the interference generating signal as the modeled PIM path? Correct? A. Yes, that's right. . . . the second signal on that red path."), 15017 at 149:12–13 ("[T]he red path is the downlink TX reference and the modeled PIM path."). When asked to clarify whether he was testifying "x1 is the modeled PIM path," he responded, "I'm saying that x1 and x2 are the two inputs here that are represented by those two signals that are on the red path." J.A. 15018 at 150:16–18. Again, he did not map x1 or x2 onto either the "signals of interest" or the "interference generating signals" as required by the claims. The jury found all asserted claims of the '134 patent infringed. J.A. 169.

At JMOL, Appellants argued Dr. Wells mapped "interference generating signals" to the modeled PIM path and there can be no infringement because the accused radios' receiver does not sample a passband of received signals that includes interference generating signals since those signals are not generated until after sampling occurs. J.A. 19–20. The court acknowledged "[t]he 'modeled PIM path is the only thing Dr. Wells expressly mapped to the 'interference generating signals'" and "Dr. Wells also testified that the PIM Model is generated in the GROOT FPGA." J.A. 21–22 (citing J.A. 15019 at 151:4–8). As such, if the modeled PIM path is the claimed "interference generating signals," then limitation 1[a] cannot be met because the accused radios' receiver does not sample a passband of received signals that includes interference generating signals since those signals are not generated until after sampling occurs. *See* J.A. 28303. The court, however, held there was sufficient evidence for the jury to find the RF ADC in the accused radios samples both the "signals of interest" and "interference generating signals" because it was persuaded by Finesse's argument that the

modeled PIM path is not the "interference generating signals." J.A. 7–16, 19–22.

On appeal, Finesse argues Dr. Wells identified the two signals on the red path as the DL(TX) reference for "signals of interest" and the modeled PIM path for "interference generating signals" because he was relying on the Nokia document's legend, which says "Red – DL (TX) reference & modeled PIM path," when he was really referring to x1 and x2. Oral Arg. at 31:01–32:20 (citing J.A. 26421);[2] *see also* Finesse Br. 30–31. Finesse claims Dr. Wells was "laboring under the misimpression that x1 and x2 correspond to DL[(TX) reference] and modeled PIM [path]." Oral Arg. at 35:10–19.

Dr. Wells' testimony was confusing and unclear even after he was made aware of his alleged misimpression. *See* J.A. 15010–19. Dr. Wells continued to testify the modeled PIM path is the "interference generating signals" and never clarified he meant x1 and x2 when he was saying DL(TX) reference and modeled PIM path. *See* J.A. 15011 at 143:6–22, 15012 at 144:5–11, 15014 at 146:1–3, 15017 at 149:7–10. At JMOL, the district court found "Dr. Wells testified that there are two signals entering the RF ADC, and that those are signals of interest and the interference generating signals. Dr. Wells is clearly referring to x1 and x2." J.A. 10–11 (citing J.A. 15010–11 at 142:12–16, 143:10–13). There is nothing clear about Dr. Wells' testimony. Dr. Wells never testified x1 and x2 correspond to the "signals of interest" and "interference generating signals." *See* J.A. 15010–19. Instead, Finesse makes that inference by piecing together parts of Dr. Wells' testimony over ninety pages apart in the record. Finesse Br. 30 (citing J.A. 15018 at 150:17–18 ("x1 and x2 are the two inputs here that are represented by those two signals that are on the red path"),

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[2] Available at https://oralarguments.cafc.uscourts.gov/default.aspx?fl=24-1039_07102025.mp3.

14925 at 57:5–7 ("this red path, it includes the signals of interest, it includes the interference generating signals")).

Even if Dr. Wells did testify x1 and x2 are the "signals of interest" and "interference generating signals," he repeatedly testified the DL(TX) reference and modeled PIM path correspond to the claimed signals, and offered no clear or detailed explanation for his contradictory testimony. *See* J.A. 15010–19. This sort of confusing change of course is not sufficient to support the jury verdict. When the party with the burden of proof, such as Finesse, rests its case on an expert's self-contradictory testimony, we may conclude the evidence is insufficient to satisfy that standard. *Johns Hopkins Univ. v. Datascope Corp.*, 543 F.3d 1342, 1349 (Fed. Cir. 2008) (despite expert opining the accused device contacts the vessel in three dimensions, "no reasonable jury could have found that the [accused] device literally met this limitation based on [expert's] opinion, given his contradictory testimony that the device only contacts the vessel in two places").[3]

We reverse the district court's denial of JMOL of non-infringement for the asserted claims of the '134 patent

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[3] Appellants also argue this x1/x2 theory, where one of x1 and x2 is the "signals of interest" and the other is the "interference generating signals," is an unsupported theory that Finesse disclaimed in its JMOL briefing. Appellants Br. 40–44; Appellants Reply Br. 9–14 (citing J.A. 13838). We do not agree. Finesse presented this theory in its JMOL briefing and relied on Dr. Wells' testimony. *See* J.A. 13836 (citing, *e.g.*, J.A. 14920 at 52:5, 14927 at 59:18–20, 15011 at 143:12–13).

because the jury's infringement verdict is not supported by substantial evidence.[4]

B. '775 Patent

The '775 patent claims a method for reducing IMP interference in a receiver by digitally multiplying three signals in seven multiplications to generate IMP cancellation signals. '775 patent at Abstract. Claim 1 is representative.

> 1. A method for performing interference cancellation in a receiver, with a transmitter and the receiver being ***co-located*** with each other, the method comprising:
>
> [a] generating intermodulation product (IMP) cancellation signals (ICSs) to cancel passive IMPs in the receiver, continuously and near real time, using copies of transmitter signals of the transmitter,
>
> [b] wherein the passive IMPs are generated in passive transmitter components of the transmitter and receiver components of the receiver after a high powered amplifier (HPA) and transmitter filter of the transmitter,
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> [c] wherein the transmitter filter is coupled between the HPA and an antenna used by the transmitter,
>
> [d] wherein generating the ICSs is based on a power series description of a non-linear process for generating the IMPs, and includes generating an n-th order ICS by, given ***three signals S1, S2 and S3, digitally multiplying and filtering S1×S1×S2 and S1×S2×S2 and S1×S2×S3 and S1×S1×S3***

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[4] The parties also dispute the correct construction of "receiver." Appellants Br. 46 n.3; Finesse Br. 37–38. Because we reverse the denial of JMOL of noninfringement, we do not reach this issue.

> ***and S2×S2×S3 and S1×S3×S3 and S2×S3×S3***, where n is an integer.

Id. at 16:54–17:6 (emphases added).

At summary judgment, the district court construed "three signals S1, S2 and S3" to be "separately identifiable," but not "unique." J.A. 115. The court concluded the intrinsic evidence does not limit "S1, S2 and S3" to unique input signals and also credited inventor testimony, as extrinsic evidence, that "S1, S2 and S3" represent signals generally and can be the same signal or different signals. J.A. 109–14. The key claim limitation at issue on appeal is that seven third order multiplications of the three signals must take place to meet the claim limitation.

At trial, Dr. Wells testified the accused radios infringe the asserted claims of the '775 patent by relying on a Nokia technical document depicting how the accused radios operate. *See* J.A. 14965–70; J.A. 26485–86 (Nokia document). Specifically, Dr. Wells testified the accused radios multiply three separately identifiable signals and equated the three distinct multiplications listed in the Nokia document to the seven claimed multiplications. J.A. 14965–69 at 97:21–101:11; J.A. 14970 at 102:5–15 (citing J.A. 28416–17). The jury found all asserted claims of the '775 patent infringed. J.A. 169.

At JMOL, the district court rejected Appellants' argument that "S1, S2 and S3" must be unique signals as waived because Appellants failed to raise it at the Rule 50(a) stage.[5] J.A. 38, 40. The court found using two signals, plus a copy of one of those signals, was sufficient to meet its construction of three separately identifiable

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[5] Appellants do not appeal the district court's holding that "S1, S2 and S3" need only be separately identifiable, not unique. Appellants Br. 49 (citing J.A. 115).

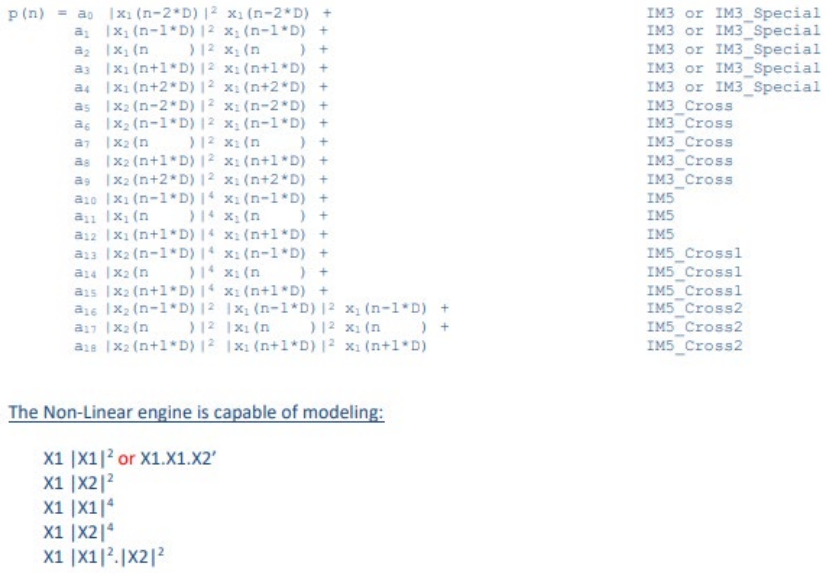
signals. J.A. 38. The court also found only three distinct multiplications are produced when two unique signals are used, and that was sufficient to show infringement because each of those three distinct multiplications corresponds to two or three of the seven claimed multiplications. J.A. 38–39.

Appellants argue no reasonable jury could have found the accused radios generate cancellation signals by multiplying three signals because the accused radios only use two signals: x1 and x2. Appellants Br. 49–55. Specifically, Appellants argue Finesse surrendered claim scope over two signals when it amended the claims during prosecution to recite "three signals," instead of "two or three signals," to overcome the Filipovic prior art reference that teaches generating cancellation signals using two inputs. J.A. 1021–22 (original claims); J.A. 1006–10 (obviousness rejection); J.A. 967–86 (response to rejection). Appellants also argue no reasonable jury could have found the accused radios perform the seven claimed multiplications because Dr. Wells only identified three multiplications. Appellants Br. 55–58.

We do not agree that Finesse surrendered claim scope over two signals. The examiner rejected a claim reciting "digitally multiplying two or three signals" as obvious over Filipovic and secondary references, J.A. 1006–07, but Finesse overcame that rejection in part by explaining "Filipovic is limited to mitigating active IMPs" and not passive IMPs that the claimed method also addresses. J.A. 985; *see also* J.A. 941 (Notice of Allowance). Although Finesse also amended claims to add the limitation of digitally multiplying "three signals S1, S2 and S3" in seven multiplications, that does not rise to the level of "clear and unambiguous" disavowal of claim scope over products, like the accused radios, with two unique input signals. *Cont'l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 798 (Fed. Cir. 2019); *see also* J.A. 110–11. At most, Finesse's amendment requires three

separately identifiable signals and does not require any specific number of unique input signals. *See* J.A. 968–69.

We agree, however, that no reasonable jury could have found the accused radios perform the seven claimed multiplications. At trial, Dr. Wells relied on a Nokia document to show the accused radios perform the claimed multiplications. J.A. 14966–68 at 98:3–100:12; J.A. 26485–86 (Nokia document). But the document involves modulus and complex conjugate operations and does not show the accused radios perform the seven claimed multiplications. J.A. 26485–86. Instead, it only lists three distinct multiplications—x1·|x1|·|x1|, x1·x1·x2', and x1·|x2|·|x2|—and there is no evidence any multiplications are repeated such that all seven claimed multiplications are performed, as required by limitation 1[d]. J.A. 26486 (reproduced below).



Moreover, Dr. Wells did not testify how those three distinct multiplications map onto the seven claimed multiplications. J.A. 14966–70 at 98:3–102:19 (citing J.A. 28416–17). Finesse attempts to clarify the mapping on appeal, but

that evidence was never presented to the jury. Finesse Br. 17–18 (citing J.A. 28417; J.A. 26485–86). And because the document does not disclose multiplying x1 and x2, but their complex conjugate and modulus, Finesse's mapping is flawed because it requires, for example, S3 to be mapped onto the signal x2, its complex conjugate x2', and its modulus |x2|. *Id.* at 17.

At oral argument, Finesse explained the accused radios perform the seven claimed multiplications because Nokia's documents show the accused radios perform not just seven multiplications, but ten. Oral Arg. at 25:05–20 (citing J.A. 28416); *see also id.* at 28:21–29:41; J.A. 26486 (referencing $p(n) = a_0$ through a_9). Nowhere do Finesse or Dr. Wells explain which subset of the ten multiplications listed in the Nokia document corresponds to the seven claimed multiplications. Finesse Br. 14–18; J.A. 15025–29 (Wells Testimony). Nor do they provide a mapping from the ten multiplications to the three distinct multiplications that Finesse mapped onto the seven claimed multiplications. Finesse Br. 17–18. Under these circumstances, no reasonable jury could have found that the accused radios perform the seven claimed multiplications.

We reverse the district court's denial of JMOL of noninfringement for the asserted claims of the '775 patent because the jury's infringement verdict is not supported by substantial evidence.[6]

II. Damages

We review a district court's denial of a motion for a new trial under regional circuit law. *Wi-LAN, Inc.*, 811 F.3d at

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[6] The parties also dispute the correct construction of "co-located." Appellants Br. 59–61; Finesse Br. 51–55. Because we reverse the denial of JMOL of noninfringement, we do not reach this issue.

461. The Fifth Circuit reviews a denial of a new trial for abuse of discretion. *Id.* (citing Fifth Circuit law).

After the jury verdict, Appellants moved for JMOL on damages or, in the alternative, a new trial. J.A. 13732–56. The district court denied both motions. J.A. 42–57 (denying JMOL on damages); J.A. 58–65 (denying new trial on damages). Because we reverse the denial of JMOL of noninfringement for all asserted claims of the '134 and '775 patents, we vacate the damages award.

CONCLUSION

For the foregoing reasons, we reverse the denial of JMOL of noninfringement and vacate the damages award.

REVERSED AND VACATED

COSTS

Costs to Defendants-Appellants.