NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

SPEX TECHNOLOGIES, INC.,
Plaintiff-Appellant

v.

APRICORN,
Defendant-Cross-Appellant

2020-2210, 2020-2253

Appeals from the United States District Court for the Central District of California in No. 2:16-cv-07349-JVS-AGR, Judge James V. Selna.

Decided: October 14, 2022

MARC A. FENSTER, Russ August & Kabat, Los Angeles, CA, argued for plaintiff-appellant. Also represented by PAUL ANTHONY KROEGER, BENJAMIN T. WANG.

OLIVER RICHARDS, Fish & Richardson P.C., San Diego, CA, argued for defendant-cross-appellant. Also represented by DAVID M. HOFFMAN, Austin, TX.

Before MOORE, *Chief Judge*, DYK and PROST, *Circuit Judges*.

PROST, *Circuit Judge*.

SPEX Technologies, Inc. ("SPEX") sued Apricorn in the U.S. District Court for the Central District of California for infringing U.S. Patent No. 6,088,802 ("the '802 patent"). During claim construction, the district court held that claims 6, 7, 23, and 25 of the '802 patent were invalid as indefinite. SPEX thereafter tried claims 11 and 12 to a jury, and the jury found that Apricorn infringed those claims. After the verdict, Apricorn moved for judgment as a matter of law ("JMOL") that it did not infringe. SPEX opposed; it also argued that if the district court were to grant the motion, it should at least give SPEX a new trial. But the district court granted JMOL of noninfringement and denied SPEX's request for a new trial.

SPEX appeals the noninfringement JMOL, new-trial denial, and indefiniteness ruling. Apricorn conditionally cross-appeals. We affirm the noninfringement JMOL and new-trial denial, reverse the indefiniteness ruling, dismiss Apricorn's conditional cross-appeal as moot, and remand for proceedings consistent with this opinion.

BACKGROUND

I

The '802 patent concerns a "single integral peripheral device" that can perform (1) "security operations" on data stored in (or provided by or to) a "host computing device" and (2) a "defined interaction" with the host computing device, such as providing functionality like data storage, data communication, or user identification—what the patent calls "target functionality." *See* '802 patent col. 3 ll. 17–36, col. 4 l. 49–col. 5 l. 4. In plain terms, the '802 patent's peripheral device can perform security operations and another function—all in one device.

As relevant here, the '802 patent's peripheral device can perform security operations "in-line"—i.e., "between the communication of data to or from the host computing device and the performance of the target functionality." *Id.* at col. 6 ll. 2–7; *accord id.* at Abstract. An "interface control device" ensures that data communicated between the host computing device and the target functionality undergoes security operations as appropriate.

Claim 11 contains a "means for mediating" element relating to this in-line concept (emphasis added):

> 11. A peripheral device, comprising:
>
> security means for enabling one or more security operations to be performed on data;
>
> target means for enabling a defined interaction with a host computing device;
>
> means for enabling communication between the security means and the target means;
>
> means for enabling communication with a host computing device; and
>
> *means for mediating communication of data between the host computing device and the target means so that the communicated data must first pass through the security means.*

II

A

During claim construction, the parties and district court agreed that the "means for mediating" element was a means-plus-function element subject to 35 U.S.C. § 112 ¶ 6,[1] which allows expressing a claim element as a "means

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[1] Congress has redesignated § 112 ¶¶ 2 and 6 as, respectively, § 112(b) and (f). *See* Leahy-Smith America

or step for performing a specified function" but limits the claim's coverage to "the corresponding structure, material, or acts described in the specification and equivalents thereof." Everyone also agreed that the function was "mediating communication of data between the host computing device and the target means so that the communicated data must first pass through the security means." *See SPEX Techs., Inc. v. Kingston Tech. Corp.*, No. SACV 16-01790, 2017 WL 5495149, at *13 (C.D. Cal. Oct. 18, 2017) ("*Claim Construction Order*").

The parties disagreed, however, as to whether the '802 patent disclosed sufficient corresponding structure for performing that function. Apricorn argued that the patent failed to do so, rendering claim 11 (and its dependent claim 12) invalid as indefinite under § 112 ¶ 2. SPEX maintained that the interface control device 910 as shown in Figure 9B of the '802 patent ("ICD 910") supplied sufficient corresponding structure. Figure 9B is reproduced below:

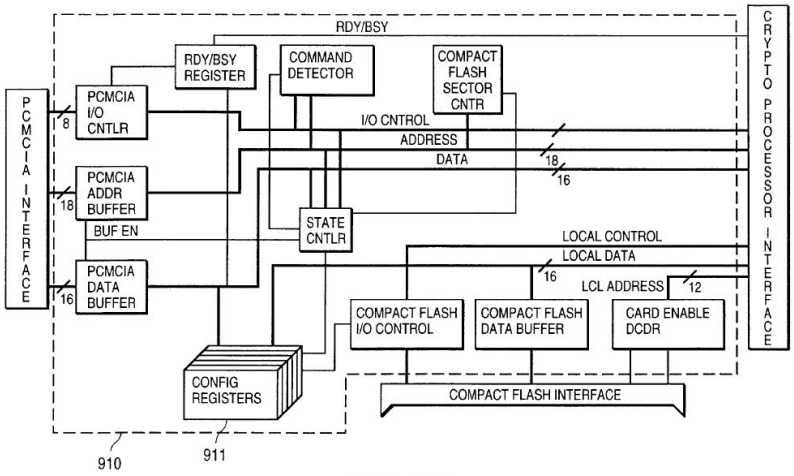

FIG. 9B

Invents Act ("AIA"), Pub. L. No. 112-29, sec. 4(c), 125 Stat. 284, 296 (2011). The pre-AIA designations apply to the '802 patent, so this opinion refers to those.

The district court agreed with SPEX that ICD 910 was a corresponding structure with disclosure sufficient to survive Apricorn's indefiniteness challenge. In making this determination, the court relied heavily on a passage of the specification concerning the "configuration registers" of ICD 910. That passage states:

> [ICD] 910 includes sets of configuration registers 911. The data stored in the configuration registers 911 establish operating characteristics of the [ICD]: *in particular, the content of the configuration registers enables the [ICD] to present to the host computing device a desired identification of the peripheral device[] and determines whether data passing through the peripheral device must be subjected to security operations*.
>
> A set of configuration registers is maintained for the host computing device I/O interface, the cryptographic processing device interface, and the target functionality interface.

'802 patent col. 17 ll. 25–36 (emphasis added). Aside from Figure 9B, the district court cited this passage—and only this passage—in rejecting Apricorn's argument that ICD 910 had insufficient structural disclosure. *Claim Construction Order*, 2017 WL 5495149, at *15 ("Given the specific details provided in this disclosure, [Apricorn has] not proven by clear and convincing evidence that the structure of [ICD 910] is inadequately disclosed by the patent specification.").

The district court accordingly construed the "means for mediating" element as a means-plus-function element subject to § 112 ¶ 6—the function being "mediating communication of data between the host computing device and the target means so that the communicated data must first

pass through the security means," and the corresponding structure being ICD 910. *Id.*[2]

B

SPEX tried claims 11 and 12 to a jury. As to the "means for mediating" element specifically, the district court instructed the jury consistent with its claim construction, setting forth both the function and the corresponding structure—i.e., ICD 910. J.A. 11276. As to infringement of means-plus-function elements generally, the court instructed the jury:

> If you find that at least one of Apricorn's accused products [has] structure that performs the claimed function, you must then determine whether that structure is the same as or equivalent to the structure I have identified in the specification. If they are the same or equivalent, the means-plus-function requirement is satisfied by that structure of the accused products.
>
> In order to prove that a structure in the accused products is equivalent to the structure in the '802 [p]atent, SPEX must show structure in the accused device performs the claimed function in substantially the same way to achieve substantially the same result. The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure

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[2] Separately, the district court determined that the "means for providing" element in claims 6, 7, 23, and 25 was indefinite. *Claim Construction Order*, 2017 WL 5495149, at *15–17. We discuss this issue briefly in Part III of the Discussion section.

> corresponding to the claimed function. Further deconstruction or parsing is incorrect.

J.A. 11279–80. Apricorn did not request a jury instruction identifying configuration registers as necessary for infringement—nor did it object to the given jury instructions for lacking that explicit requirement.

After the jury found that Apricorn infringed claims 11 and 12, Apricorn moved under Rule 50(b) for JMOL of non-infringement, which the district court granted. Apricorn argued that the configuration registers of ICD 910 were "indispensable" to that structure's functioning and that, by failing to show such configuration registers in the accused products, SPEX failed to prove infringement—i.e., failed to prove that the accused products included a structure that performed the relevant function in "substantially the same way" as ICD 910. The district court, citing precedent from this court, agreed that the configuration registers were "indispensable" or "central" components of ICD 910, meaning that SPEX needed to show them (or their equivalent) in the accused products to prove infringement. *SPEX Techs., Inc. v. Apricorn*, No. CV 16-07349, 2020 WL 5491692, at *3–4 (C.D. Cal. Aug. 10, 2020) ("*JMOL Order*") (first citing *Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1324 (Fed. Cir. 2004); and then citing *Solomon Techs., Inc. v. ITC*, 524 F.3d 1310, 1317 (Fed. Cir. 2008)).[3] And because the district court concluded that there was no substantial evidence of configuration registers presented at trial, it granted JMOL of

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[3] In making this determination, the district court incorporated and drew from its analysis in another case where SPEX asserted infringement of the '802 patent. *JMOL Order*, 2020 WL 5491692, at *3 (citing *SPEX Techs. Inc v. Kingston Tech. Corp.*, No. SACV 16-01790, 2020 WL 4342254 (C.D. Cal. June 16, 2020) ("*Kingston SJ Order*")).

noninfringement. *See JMOL Order*, 2020 WL 5491692, at *3–5.

In its JMOL-related filings, SPEX had also requested a new trial if the district court were to grant JMOL of noninfringement. SPEX maintained that because the district court "did not adopt the construction" that configuration registers were indispensable "until after trial," it was "not afforded the opportunity to present all the evidence regarding configuration registers to the [j]ury." J.A. 9712 (emphasis omitted) (identifying evidence SPEX would have presented). The district court, however, considered all the evidence SPEX said it would have presented, and it concluded that such evidence likewise could not have supported an infringement verdict. *JMOL Order*, 2020 WL 5491692, at *4–5, *4 n.2. The court therefore denied SPEX's request for a new trial.

SPEX timely appealed the noninfringement JMOL, new-trial denial, and indefiniteness ruling on the "means for providing" element. Apricorn timely, conditionally cross-appealed, arguing that if we were to conclude that SPEX didn't have to show configuration registers after all, we should hold claims 11 and 12 invalid as indefinite for lacking sufficient disclosure of corresponding structure. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review a district court's decisions on JMOL and new-trial motions under regional circuit law. *E.g.*, *SSL Servs., LLC v. Citrix Sys., Inc.*, 769 F.3d 1073, 1082 (Fed. Cir. 2014). The Ninth Circuit reviews a JMOL grant de novo, affirming "if the evidence, construed in the light most favorable to the nonmoving party, permits only one reasonable conclusion, and that conclusion is contrary to the jury's verdict." *Pavao v. Pagay*, 307 F.3d 915, 918 (9th Cir. 2002) (also observing that "[a] jury's verdict must be upheld if it is supported by substantial evidence"). It reviews a new-trial denial for abuse of discretion. *E.g.*,

Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., 20 F.4th 466, 476 (9th Cir. 2021).

We review a district court's indefiniteness determination de novo and any underlying factual questions for clear error. *Rain Computing, Inc. v. Samsung Elecs. Am., Inc.*, 989 F.3d 1002, 1007 (Fed. Cir. 2021).

I

We begin with SPEX's appeal of the noninfringement JMOL, a ruling it challenges in three primary ways. First, SPEX argues that the district court shouldn't have deemed configuration registers indispensable to proving the "means for mediating" element because Apricorn neither requested—nor objected to the absence of—a claim construction or jury instruction calling out configuration registers as such. Second, SPEX argues that on the merits, configuration registers simply shouldn't be deemed indispensable. And third, SPEX argues that even if it had to show configuration registers, the trial record contained enough evidence of them to support the jury's infringement verdict. We address these arguments in turn.

A

SPEX initially argues that, because Apricorn didn't request a claim construction or jury instruction explicitly requiring configuration registers (or object to the given instructions' lack of such a requirement), the district court improperly required them on JMOL. This argument (and the one discussed in Part I.B) implicates what it means to infringe a means-plus-function element having a multi-component corresponding structure, so we briefly review the relevant case law on this issue before turning to SPEX's particular contentions.

In *Odetics, Inc. v. Storage Technology Corp.*, we reiterated that "a claim limitation written in § 112[] ¶ 6 form, like all claim limitations, must be met, literally or equivalently, for infringement to lie" and that "such a limitation

is literally met by structure, materials, or acts in the accused device that perform the claimed function in substantially the same way to achieve substantially the same result." 185 F.3d 1259, 1268 (Fed. Cir. 1999). And we explained:

> The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function. . . . Further deconstruction or parsing is incorrect.

Id.

Since *Odetics*, we have instructed that greater weight may nonetheless be given to components that are "central" or "indispensable" to the corresponding structure. For example, in *Toro*, the district court on summary judgment concluded that (1) a claim element's corresponding structure included a mechanical cam system and (2) an electrical cam system did not infringe because, although it seemed to perform an identical function, it failed to do so in substantially the same way. 355 F.3d at 1323–24. In particular, the district court concluded that because the allegedly infringing device lacked a mechanical cam—an "indispensable" part of the claimed structure—no reasonable factfinder could find infringement. *Id.* (cleaned up). On appeal, the patentee argued that the district court had "impermissibly engaged in a component-by-component analysis." *Id.* at 1324. We rejected that argument, reasoning that "the cam was not simply a minor component" of the corresponding structure; rather, it was an "indispensable" part of the structure. *Id.* (cleaned up). Accordingly, "[t]o the extent the district court gave the cam greater weight in considering [the corresponding] structure as a whole, this was appropriate given the cam's central role." *Id.* We applied the principle again in *Solomon*, observing that, in assessing infringement of means-plus-function claims, "our

case law allows for greater weight to be given to individual components that play a central role in the identified structure." 524 F.3d at 1317–18 (citing *Toro*, 355 F.3d at 1324) (affirming a finding that an accused product using *rotor shafts* did not infringe a means-plus-function element in which *disks* played a central role in the corresponding structure).

1

Turning now to SPEX's particular contentions, SPEX maintains that Apricorn's failure to request a claim construction or jury instruction explicitly requiring configuration registers (or object to the given instructions' lack of such a requirement) precluded the district court from requiring them on JMOL. It's true that "[w]hen issues of claim construction have not been properly raised in connection with the jury instructions, it is improper for the district court to adopt a new or more detailed claim construction in connection with the JMOL motion." *Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1320 (Fed. Cir. 2003). But the configuration registers' indispensability is not properly viewed as a claim-construction issue. It is instead simply a question of noninfringement: whether the accused product performs the function in substantially the same *way* as the corresponding structure. Indeed, the district court's articulation of the configuration registers' indispensability straightforwardly followed from applying the ordinary meaning of the court's claim construction in the test for means-plus-function infringement. And, in granting JMOL of noninfringement, the district court employed the same analysis we approved of in *Solomon*—confirming that the absence of a central or indispensable component in an accused device precludes infringement. *See* 524 F.3d at 1317–18.

Accordingly, we conclude that, under the circumstances of this case, the district court's articulation of the configuration registers' indispensability was not an

impermissible new construction. It was simply an application of the ordinary meaning of the court's earlier claim construction.

2

SPEX also argues that the district court erred because its indispensability analysis on JMOL conflicted with jury instructions that said: (1) "The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function," and (2) "Further deconstruction or parsing is incorrect." Appellant's Br. 40–41; *see* J.A. 11279–80.

We disagree that there was a conflict here. The instructions SPEX identifies appear to be lifted verbatim from *Odetics*. 185 F.3d at 1268 ("The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function. . . . Further deconstruction or parsing is incorrect."). And, as we have explained, our case law has held that the standard in *Odetics* is consistent with giving greater weight to components that are "central" or "indispensable" to the corresponding structure. *See Toro*, 355 F.3d at 1323–24; *Solomon*, 524 F.3d at 1317–18. We therefore struggle to see how an analysis that doesn't conflict with *Odetics* nevertheless conflicts with jury instructions quoting *Odetics*.

B

SPEX next argues that, procedural issues aside, on the merits the district court should not have deemed configuration registers indispensable when assessing infringement of the "means for mediating" element.

The district court observed that the '802 patent's discussion of ICD 910 "describes just one structural component: configuration registers 911," thus "support[ing] the

conclusion that the configuration registers play a central role in [ICD] 910." *Kingston SJ Order*, 2020 WL 4342254, at *11–12. The court also observed that "one of the key aspects of the invention disclosed in the '802 [p]atent is that it controls the flow of data between the host computing device and peripheral device in a secure fashion"—and that "[t]he configuration registers are described in the context of [ICD] 910 as the way to do so for that embodiment." *Id.* at *12. These observations support the district court's assessment that performing the claimed function in "substantially the same way" as ICD 910 required using configuration registers. *See Solomon*, 524 F.3d at 1317–18 (looking to a claim's prosecution history to confirm a trial tribunal's decision to treat a component as indispensable when assessing infringement).

SPEX's main argument against configuration registers' indispensability relies on the specification's description of various "modes" in which the peripheral device might operate. Those modes include: (1) one in which only the security functionality is used; (2) one in which both the security and target functionalities are used; and (3) one in which only the target functionality is used. Appellant's Br. 47–48 (citing '802 patent col. 10 ll. 13–18). SPEX maintains that the configuration registers of ICD 910 are used to "switch" among these modes. And, it argues, because the peripheral device of claim 11 is "fixed in one mode of operation"—i.e., that in which communication of data between the host computing device and the target means must first pass through the security means—there is no need for switching, and thus no reason to deem configuration registers indispensable (at least as to this claim). Appellant's Br. 48.

The district court considered and rejected this argument. It reasoned that, "in the context of [ICD] 910, the specification does not describe any other ways of *achieving* the 'mode' required by [the 'means for mediating' element] other than through the use of configuration registers."

Kingston SJ Order, 2020 WL 4342254, at *12 (emphasis added). In other words, even if configuration registers were used for *switching* among various modes, they are also the only disclosed way for setting, or "achieving," a mode in ICD 910. *See* Cross-Appellant's Br. 47 (noting that, as to ICD 910, the '802 patent "discloses only a single way that the device is configured: the configuration registers"); *accord* '802 patent col. 17 ll. 26–33 ("The data stored in the configuration registers 911 establish operating characteristics of [ICD 910]: in particular, the content of the configuration registers . . . determines whether data passing through the peripheral device must be subjected to security operations.").

We see no error in the district court's assessment that, without configuration registers, substantial evidence could not support the jury's verdict that the accused products performed the claimed function in "substantially the same way" as ICD 910.

C

SPEX finally argues that, even if it had to show configuration registers, the trial record contained enough evidence of them to support the jury's infringement verdict. Again we disagree.

Initially, as Apricorn notes (and as SPEX doesn't dispute), SPEX identifies no instance where its infringement expert even uttered the phrase "configuration registers." While of course not dispositive by itself, it's hardly an auspicious start.

As for the configuration-registers evidence that SPEX *does* identify, we view it as insubstantial. For example, SPEX directs us to a demonstrative that its infringement expert showed at trial, which quotes a portion of a USB specification in evidence that says, "Before a USB device's function may be used, the device must be configured."

J.A. 9743 (demonstrative)[4]; *see also* J.A. 13743, 14013 (USB specification). SPEX also points to its infringement expert's testimony that "both devices need to be configured, so there's always configuration information that they can be programmed with." J.A. 10672. And it again references the USB specification, which says that a USB device uses a "SetConfiguration()" command for configuration. J.A. 14013.

The district court considered all of these statements, however, and deemed them insufficient to substantiate the jury's infringement verdict. The court reasoned: "[T]estifying that the accused devices perform the function of 'be[ing] configured' is not the same as saying the accused devices have an equivalent structure *to the configuration registers disclosed in [ICD] 910*." *JMOL Order*, 2020 WL 5491692, at *3 (second alteration in original) (emphasis added).

We agree with the district court, and we view SPEX's other cited evidence as insufficient to substantiate the jury's verdict of infringement (whether literal or under the doctrine of equivalents) for essentially the same reason.

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In sum: because the district court did not err on JMOL in deeming configuration registers indispensable to proving infringement of the "means for mediating" element, and because there was no substantial evidence of the

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[4] To the extent SPEX is independently seeking to rely on the demonstrative's heading—"[11d] Both USB and PCMCIA Use Configuration Registers," J.A. 9743—even if we assumed that this constitutes evidence, we do not think that it qualifies as, or could even contribute to, substantial evidence that the accused products have the configuration registers specifically contemplated by the "means for mediating" element.

required configuration registers (or their equivalent), we affirm the JMOL of noninfringement.

II

We turn next to SPEX's appeal of the new-trial denial. SPEX argues that, in view of the district court's indispensability analysis on JMOL, we should order a new trial "based on the new construction." Appellant's Br. 54; *id.* at 55 ("At the least, a new trial should have been ordered in light of the . . . new construction."). But as we explained, the district court's articulation of the configuration registers' indispensability was not an impermissible new construction. It was simply an application of the ordinary meaning of the court's earlier claim construction. That being so, this argument does not persuade us that the district court abused its discretion by denying SPEX a new trial.

SPEX also says that it had additional configuration-registers evidence it would have presented to the jury had it understood they were indispensable. Appellant's Br. 55–56. But SPEX identified such evidence for the district court. And, after considering what SPEX identified, the court determined that it—like the evidence at trial—was "insufficient to show that the accused products have configuration registers *as part of the alleged structure corresponding to the 'means for mediating' claim limitation*." *JMOL Order*, 2020 WL 5491692, at *4 (emphasis added). We see no error in that determination—nor anything else that would lead us to conclude that the district court abused its discretion here. Accordingly, we affirm the district court's denial of SPEX's request for a new trial.

III

We turn now to SPEX's appeal of the district court's indefiniteness determination regarding the "means for providing" element of claims 6, 7, 23, and 25 of the '802 patent.

SPEX appealed this very same indefiniteness ruling in *SPEX Technologies, Inc. v. Western Digital Corp.*, 859 F. App'x 557 (Fed. Cir. 2021) ("*Western Digital*").[5] We reversed because we agreed with SPEX that the '802 patent "sufficiently links memory section 612a to the function recited in the 'means for providing' limitation." *Id.* at 562–63.

Apricorn did not have occasion to address our *Western Digital* opinion in its briefing, given that the opinion issued after it filed its principal and response brief. But at oral argument, it wisely conceded that our analysis and conclusion on this issue in *Western Digital* control here and necessitate reversal. Oral Arg. at 20:39–22:10.[6] Therefore, following *Western Digital*, we reverse the district court's determination that the "means for providing" element of claims 6, 7, 23, and 25 of the '802 patent is indefinite and remand for proceedings consistent with this opinion.

IV

We lastly dispose of Apricorn's cross-appeal. Apricorn conditioned its cross-appeal on our concluding that SPEX didn't have to show configuration registers (or their equivalent) to prove infringement of the "means for mediating"

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[5] The same indefiniteness ruling applied across these two cases because they were consolidated for pre-trial purposes at the time of the ruling. Indeed, Apricorn and the defendants in *Western Digital* made the same indefiniteness arguments to the district court, having jointly filed their claim-construction briefs in advance of the ruling.

[6] No. 20-2210, https://oralarguments.cafc.uscourts.gov/default.aspx?fl=20-2210_05052022.mp3.

element. Because we've concluded otherwise, *supra* Part I.B, we dismiss Apricorn's cross-appeal as moot.[7]

CONCLUSION

We have considered the parties' remaining arguments but find them unpersuasive. For the foregoing reasons, we affirm the noninfringement JMOL and new-trial denial, reverse the indefiniteness ruling, dismiss Apricorn's conditional cross-appeal as moot, and remand for proceedings consistent with this opinion.

AFFIRMED-IN-PART, REVERSED-IN-PART, DISMISSED-IN-PART, AND REMANDED

COSTS

No costs.

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[7] Because we dismiss Apricorn's cross-appeal as moot, we likewise deny as moot SPEX's motion to strike portions of Apricorn's reply brief (ECF No. 48).