United States Court of Appeals for the Federal Circuit

GENUINE ENABLING TECHNOLOGY LLC,
Plaintiff-Appellant

v.

NINTENDO CO., LTD., NINTENDO OF AMERICA INC.,
Defendants-Appellees

2020-2167

Appeal from the United States District Court for the Western District of Washington in No. 2:19-cv-00351-RSM, Judge Ricardo S. Martinez.

Decided: April 1, 2022

DEVAN V. PADMANABHAN, Padmanabhan & Dawson, PLLC, Minneapolis, MN, argued for plaintiff-appellant. Also represented by ERIN DUNGAN, PAUL J. ROBBENNOLT.

JERRY A. RIEDINGER, Perkins Coie, LLP, Seattle, WA, argued for defendants-appellees. Also represented by KEVIN ANDREW ZECK; ANDREW DUFRESNE, DAVID R. PEKAREK KROHN, Madison, WI.

Before NEWMAN, REYNA, and STOLL, *Circuit Judges*.

REYNA, *Circuit Judge.*

Genuine Enabling Technology LLC sued Nintendo Co., Ltd. and Nintendo of America, Inc. accusing five products of infringing certain claims of U.S. Patent No. 6,219,730. The U.S. District Court for the Western District of Washington construed the term "input signal," which appears in all the asserted claims, consistent with the defendants' proposed construction, and on that basis granted summary judgment of non-infringement in favor of the defendants. Genuine appeals, arguing that the district court erred in construing the limitation by improperly relying on extrinsic evidence and by improperly finding that the inventor, Mr. Nguyen, disclaimed certain claim scope during prosecution. We conclude that the district court erred in its construction of "input signal" and construe the term to mean "a signal having an audio or higher frequency." Accordingly, we reverse the district court's grant of summary judgment and remand for further proceedings consistent with this opinion.

BACKGROUND

The '730 Patent

On June 20, 1998, inventor Nghi Nho Nguyen filed a patent application that issued on April 17, 2001, as U.S. Patent No. 6,219,730. The '730 patent is titled "Method and Apparatus for Producing a Combined Data Stream and Recovering Therefrom the Respective User Input Stream and at Least One Additional Input Signal." The '730 patent discloses technology for combining data streams that Mr. Nguyen conceived when developing a "voice mouse" that conserved computer resources. Appellant's Br. 7–8.

According to the '730 patent, in the prior art, computers received user input via a "user input device" or "UID," such as a mouse or keyboard. '730 patent col. 1 ll. 14–18, col. 3 ll. 26–30. Computers also used "input/output" or "I/O" cards to process various types of signals. *Id.* at col. 1

ll. 18–22. As an example of an I/O card, a sound card would be used to receive speech input from a microphone and to transmit speech output to a speaker. *Id.* at col. 3 ll. 26–30. The '730 patent explains that devices and cards share computer resources and that their configuration can be cumbersome:

> Devices and cards require and share common computer resources such as the direct memory access (DMA) channels and the interrupt request (IRQ) services. Computer resources for each device or each card equipped in a computer must be configured, or assigned, to pre-arranged memory locations that are limited in number. Configuration setup for computer resources is cumbersome and sometimes causes conflict in running software.

Id. at col. 1 ll. 21–28.

To solve these problems, the '730 patent "offers a new kind of UID utilizing the computer resources efficiently." *Id.* at col. 1 ll. 41–42. The embodiment shown in Figure 1B "eliminates the [computer's] sound card" so that the UID (i.e., mouse 18) "directly receives speech input from microphone 16 and transmits speech output to speaker 17." *Id.* at col. 3 ll. 30–36. This arrangement involves the use of a "framer" that (i) receives input from the UID and external device (e.g., speaker or microphone), and (ii) "synchronize[s] and merge[s]" those data streams into a "combined data stream." *Id.* at col. 4 ll. 28–31. Claim 1 is representative and recites:

> 1. A user input apparatus operatively coupled to a computer via a communication means additionally receiving at least one input signal, comprising:
>
>> user input means for producing a user input stream;
>>
>> input means for producing the at least one input signal;

> converting means for receiving the at least one input signal and producing therefrom an input stream; and
>
> encoding means for synchronizing the user input stream with the input stream and encoding the same into a combined data stream transferable by the communication means.

Id. at col. 7 l. 61–col. 8 l. 4.

During prosecution, the examiner rejected pending claims 1–27 as obvious. J.A. 1762, 1767–69. In particular, the examiner rejected pending claims 1, 16, and 23 as obvious in light of U.S. Patent No. 5,990,866 ("Yollin"). J.A. 1768–69.

Yollin is titled "Pointing Device with Integrated Physiological Response Detection Facilities." Yollin explains that prior art pointing devices (e.g., a mouse, joystick, or stylus) typically provided two-dimensional motion information for a cursor (i.e., positional change information) as well as signals for pushing a button (i.e., user selection information). Yollin at col. 1 ll. 27–38. According to Yollin, a subset of prior art devices also processed input known as biofeedback from physiological sensors, but those systems generally "require a separate dedicated physiological response input device that consumes a valuable I/O port of the computer system, and . . . rel[y] on a specialized dedicated program." *Id.* at col. 1 ll. 53–62. Yollin thus disclosed "a pointing device with integrated physiological response detection facilities" that "does not consume excess I/O ports." *Id.* at col. 1 l. 66–col. 2 l. 6.

Yollin further described the types of physiological response sensors that could be used. Yollin's invention could use "any of a number of alternative devices which measure any of a number of physiological responses of a user who contacts the sensor(s)." *Id.* at col. 3 l. 64–col. 4 l. 2.

Exemplary sensors included "a [Galvanic Skin Response or GSR] sensor, an electromyograph (muscle tension), electro-cardiograph (heart activity), electroencephalograph (brain activity), thermometer (skin temperature), blood pressure sensor, and the like." *Id.* at col. 4 ll. 5–10. Yollin, however, did not specifically discuss the frequencies of the signals generated by the physiological sensors.

With respect to the "input signal" limitation of pending claims 1, 16, and 23, the examiner cited Yollin's teaching of "input information received from motion translation unit 102, user selection unit 104 and physiological response sensor(s) 106" as grounds for rejection. J.A. 1768 (citing Yollin at col. 5 ll. 16–18).

Mr. Nguyen responded to the office action on September 28, 2000, arguing that Yollin failed to adequately teach the limitation. Mr. Nguyen distinguished the "slow varying" physiological response signals discussed in Yollin from the "signals containing audio or higher frequencies" contemplated by his invention on the ground that the latter signals pose a signal "collision" problem solved by Mr. Nguyen's inventions:

> Yollin's invention . . . utilizes various implementations and configurations for receiving input from motion translation unit 102, user selection unit 104 and physiological response sensor(s) 106, and for processing their information prior to communication to the host system via communication interface 108 and channel 112. These configurations are standard and well-known to the artisan. However, Yollin only uses the configuration to receive the *slow varying* signal coming from the physiological response sensor(s). Yollin is not motivated and does not anticipate their use for receiving signals containing *audio or higher frequencies* in place of the physiological response sensor(s). The high frequency input signal, which comes from a source

different from those of motion and selection units, will run asynchronously relative to, and collide with, the other signals. Yollin's invention does not teach or suggest any approach for receiving and recovering that kind of input signal.

J.A. 1784 (emphasis added). Mr. Nguyen then reiterated that distinction between Yollin and his inventions:

[Yollin] utilizes . . . a controller to receive positional change information, user selection information and physiological change information to generate . . . a composite signal but *does not anticipate its use with signals containing audio or higher frequencies*. Using a controller to generate the composite control signal out of the information changes, which are *slow-varying*, is standard and not worth [being] mentioned in Yollin's description. Difficulties will arise when one signal runs asynchronously relative to another signal and fast. Yollin's patent does not teach or suggest any method for the controller to receive and recover such signals. In contrast, this invention describes, in its representative embodiments, how to combine the data from a UID (mouse) and from a *high-frequency* signal, via a framer, which is unique and novel.

J.A. 1785 (emphasis added). Mr. Nguyen made this essential argument a third time:

Yollin's method of using the controller to generate a composite signal *only works for slow varying signals*. In contrast, this invention teaches the artisan the ways of synchronizing and encoding two sources of signals into a combined data, via a framer, before sending onto a communication link, and of recovering from the received combined data the original information of the respective signals.

Id. (emphasis added). In late November 2000, the examiner entered an examiner's amendment and allowed the claims. *See* J.A. 1796–810.

The District Court Action

On February 8, 2017, Genuine Enabling Technology LLC ("Genuine") filed an action against Nintendo Co., Ltd. and Nintendo of America, Inc. (collectively, "Nintendo") in the U.S. District Court for the District of Delaware. J.A. 63. Genuine alleged that five Nintendo products infringe the '730 patent: (1) the Wii Remote and Wii Remote Plus; (2) the Nunchuk; (3) the WiiU Game Pad; (4) the Switch Joy-Con Controller; and (5) the Nintendo Switch Pro Controller. *Genuine Enabling Tech. LLC v. Nintendo Co.*, No. C19-351RSM, 2020 WL 4366163, at *1 (W.D. Wash. July 30, 2020). Specifically, Genuine alleged that these products contain functionality that infringe claims 10, 14–18, 21–23, and 25 of the '730 patent. *Id.* On March 11, 2019, the case was transferred to the Western District of Washington. *Id.* at *4; J.A. 666.

In early 2020, the parties submitted claim construction briefing in which they disputed the proper construction of the claim term "input signal" in all asserted claims.[1] J.A. 1440–52, 1655–77. Genuine proposed the construction, "a signal having an audio or higher frequency." J.A. 1677. Nintendo proposed the following narrower construction:

> A signal containing audio or higher frequencies. Mr. Nguyen disclaimed signals that are 500 Hertz (Hz) or less. He also disclaimed signals that are generated from positional change information, user selection information, physiological response

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[1]   The district court held a *Markman* hearing on February 24, 2020. *See* J.A. 3263–321.

> information, and other slow-varying information.
> Alternatively, indefinite.

J.A. 1448. In support, Nintendo submitted a declaration by Dr. Howard Chizeck, which discussed the features and operation of physiological sensors such as those disclosed in the Yollin reference. J.A. 1542–55. Dr. Chizeck included a chart titled "Range and Frequency of Select Physiological Phenomena" and indicated that the information in the chart came from a reference he called "Yuce, et al." J.A. 1551. The chart provided frequency ranges for signals associated with various physiological phenomena, including a range of 10–500 Hz for EMG (electromyogram). *Id.* Based on this chart, Dr. Chizeck opined that "the maximum frequency of the signals from physiological sensors described by Yollin is at least 500 Hz." J.A. 1553. Relying on Dr. Chizeck's declaration, Nintendo argued that a person of ordinary skill in the art would have understood Yollin to teach physiological sensor signals having maximum frequencies of at least 500 Hz, and that, therefore, Mr. Nguyen had disclaimed all such signals when he distinguished Yollin from his inventions during prosecution. J.A. 1450–51. Nintendo accordingly opposed Genuine's broader construction, which encompassed the range of frequencies that humans can hear (20 Hz to 20,000 Hz). J.A. 1451.

On January 23, 2020, Nintendo moved for summary judgment of non-infringement, which was predicated on the district court's acceptance of its claim construction of "input signal." J.A. 2465–90. Nintendo argued that its accused controllers produce the types of slow-varying signals that Mr. Nguyen disclaimed during prosecution when he distinguished his inventions from the Yollin reference. *See* J.A. 2482–84.

On July 30, 2020, the district court issued an order granting Nintendo's motion for summary judgment. *Genuine*, 2020 WL 4366163, at *1. The court construed the

"input signal" limitation in all asserted claims to mean "signals above 500 Hz and excluding signals generated from positional change information, user selection information, physiological response information, and other slow-varying information," consistent with Nintendo's proposed construction. *Id.* at *10. The court interpreted Mr. Nguyen's arguments regarding Yollin during prosecution as "amount[ing] to disclaimer of the slow-varying signals addressed by Yollin." *Id.* at *8. In particular, the court found Mr. Nguyen's assertions "to be a clear expression by Mr. Nguyen that if a sensor produces signals at the frequency of those contemplated by Yollin, those frequencies do not pose a collision problem when combined with slow-varying button data and are therefore distinct from 'fast-varying' signals addressed by the '730 patent." *Id.* Based on this finding, the court determined that a person of ordinary skill in the art "would understand the upper bound of 'slow-varying' signals covered by Yollin to set the lower bound of 'fast-varying' signals covered by the '730 patent." *Id.* The court then credited Dr. Chizeck's testimony identifying "500 Hz as the upper limit of slow-varying signals covered by Yollin." *Id.* at *9–10.

The district court rejected Genuine's argument that Mr. Nguyen had only distinguished Yollin on the grounds that its signals were slow-varying rather than fast-varying, and that Mr. Nguyen accordingly should only be deemed to have disclaimed slow-varying signals below the audio frequency spectrum. *Id.* at *9. The court cited *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1374 (Fed. Cir. 2007), for the proposition that "an applicant's argument that a prior art reference is distinguishable on *a particular ground* can serve as a disclaimer of claim scope even if the applicant distinguishes the reference on *other grounds* as well." *Id.* "Accordingly," the district court explained, "even though Mr. Nguyen distinguished Yollin on the basis that the '730 patent addressed 'audio or higher frequencies,' this distinction does not negate his additional statements

expressly disavowing as 'slow-varying' the range of frequencies addressed by Yollin." *Id.* The court also stated that Genuine had not adequately rebutted Dr. Chizeck's analysis and opinion regarding the 500 Hz threshold. *Id.* Based on its claim construction of "input signal," the district court granted summary judgment of non-infringement in favor of Nintendo. *Id.* at *10–14.

Genuine appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

STANDARD OF REVIEW

We review a district court's grant of summary judgment under the standard applied in the regional circuit, in this case the Ninth Circuit. *Neville v. Found. Constructors, Inc.*, 972 F.3d 1350, 1355 (Fed. Cir. 2020). The Ninth Circuit reviews a grant of summary judgment de novo. *Id.* (citation omitted). Summary judgment is proper only when the court determines that "no reasonable jury could have found infringement on the undisputed facts or when all reasonable factual inferences are drawn in favor of the patentee." *Netword, LLC v. Centraal Corp.*, 242 F.3d 1347, 1353 (Fed. Cir. 2001) (first citing Fed. R. Civ. P. 56(c); and then citing *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)).

We review a district court's claim construction de novo and its underlying factual determinations for clear error. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 326–27 (2015). We review the application of prosecution disclaimer de novo. *Shire Dev., LLC v. Watson Pharms., Inc.*, 787 F.3d 1359, 1365 (Fed. Cir. 2015).

DISCUSSION

I

A

This court has long "emphasized the importance of the intrinsic evidence in claim construction" while also

"authoriz[ing] district courts to rely on extrinsic evidence" in certain scenarios. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc). Extrinsic evidence, we have observed, is generally "less reliable" for claim construction purposes than the intrinsic record for several reasons. *Id.* at 1318. Extrinsic sources might not have been written for the purpose of illuminating the scope of the patent at issue; they might have been written for an audience different from persons of ordinary skill in the art; they might suffer from litigation bias; and relatedly, they might have been selectively plucked from the unbounded universe of potentially relevant material to advance a litigant's position. *Id.* We have therefore cautioned against "undue reliance" on extrinsic evidence because it "poses the risk that it will be used to change the meaning of claims in derogation of the indisputable public records consisting of the claims, the specification and the prosecution history, thereby undermining the public notice function of patents." *Id.* at 1319 (citation and quotation marks omitted). In other words, "[e]xtrinsic evidence is to be used for the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 981 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996).

Expert testimony, one type of extrinsic evidence, may be useful in claim construction "to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Phillips*, 415 F.3d at 1318 (citations omitted). However, expert testimony may not be used to diverge significantly from the intrinsic record. *See, e.g.*, *id.* ("[A] court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history,

in other words, with the written record of the patent." (citation and quotation marks omitted)); *see also Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996) ("[E]xpert testimony . . . may not be used to vary or contradict the claim language. Nor may it contradict the import of other parts of the specification." (citation omitted)); *Aqua-Aerobic Sys., Inc. v. Aerators Inc.*, 211 F.3d 1241, 1245 (Fed. Cir. 2000) (stating that expert testimony "may not correct errors or erase limitations or otherwise diverge from the description of the invention as contained in the patent documents"); *Omega Eng'g, Inc, v. Raytek Corp.*, 334 F.3d 1314, 1332 (Fed. Cir. 2003) ("Yet, Omega submits its expert declarations not to shed light on this field of art, but to rewrite the patent's specification and explicitly provide for the laser splitting device, lenses, and prisms to strike the center of the energy zone. That we cannot accept."); *U.S. Indus. Chems. v. Carbide & Carbon Chems. Corp.*, 315 U.S. 668, 678 (1942) ("It is inadmissible to enlarge the scope of the original patent by recourse to expert testimony to the effect that a process described and claimed in the reissue, different from that described and claimed in the original patent, is, because equally efficacious, in substance that claimed originally.").

Accordingly, the intrinsic record "must be considered and where clear must be followed." *See Mantech Env't Corp. v. Hudson Env't Servs., Inc.*, 152 F.3d 1368, 1373 (Fed. Cir. 1998); *see also Vitronics*, 90 F.3d at 1584 ("[W]here the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight."). "Any other rule would be unfair to competitors who must be able to rely on the patent documents themselves, without consideration of expert opinion that then does not even exist, in ascertaining the scope of a patentee's right to exclude." *Vitronics*, 90 F.3d at 1584. Reliance on expert testimony regarding the claim interpretation is thus permissible where the testimony is "consistent with [the interpretation] required by the

intrinsic evidence." *Goldenberg v. Cytogen, Inc.*, 373 F.3d 1158, 1166 (Fed. Cir. 2004).

B

The doctrine of prosecution disclaimer "preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution." *Omega*, 334 F.3d at 1323. "As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution." *Id.* at 1324. For a statement during prosecution to qualify as a disavowal of claim scope, it must be "so clear as to show reasonable clarity and deliberateness," and "so unmistakable as to be unambiguous evidence of disclaimer." *Id.* at 1325 (citations omitted); *see also Tech. Props. Ltd. LLC v. Huawei Techs. Co.*, 849 F.3d 1349, 1358 (Fed. Cir. 2017) ("The patentee's disclaimer may not have been necessary, but its statements made to overcome Magar were clear and unmistakable."). If the challenged statements are ambiguous or amenable to multiple reasonable interpretations, prosecution disclaimer is not established. *See Tech. Props.*, 849 F.3d at 1358 (citing *Mass. Inst. of Tech. v. Shire Pharms., Inc.*, 839 F.3d 1111, 1119 (Fed. Cir. 2016)). "The party seeking to invoke prosecution history disclaimer bears the burden of proving the existence of a clear and unmistakable disclaimer that would have been evident to one skilled in the art." *Shire*, 839 F.3d at 1119 (citation and quotation marks omitted).

II

The parties agree that Mr. Nguyen disavowed claim scope during prosecution of the '730 patent in distinguishing his claimed inventions from the Yollin reference. Appellant's Br. 34; Appellee's Br. 26. The parties dispute whether he disavowed claim scope beyond signals below the audio frequency spectrum.

Genuine contends that the prosecution history clearly shows that Mr. Nguyen disclaimed "slow-varying" signals from the full scope of the term "input signal." Appellant's Br. 35. According to Genuine, Mr. Nguyen established a clear demarcation between Yollin's low-frequency signals and the signals "of audio or higher frequency" used in his inventions. *Id.* Genuine further argues that the district court erred by finding disavowal of additional claim scope where the record shows no such disavowal. *Id.* at 38. According to Genuine, neither the intrinsic record nor Yollin ever discussed signal frequency in a manner that would allow a person of ordinary skill in the art to draw any bright line in claim scope based on frequency, let alone a bright line at 500 Hz. *Id.* Genuine also contends that the district court erroneously relied on testimony by Nintendo's expert, Dr. Chizeck, that a person of ordinary skill in the art would have understood Mr. Nguyen's assertions as a disavowal of all signals of frequencies up to 500 Hz. *Id.* at 44. Genuine points out that Dr. Chizeck's testimony had no support in the intrinsic record, but rather was based solely on other extrinsic evidence purporting to describe various signals' frequency ranges. *Id.* at 44–45. We agree with Genuine.

We conclude that the only disavowal of claim scope that is clear and unmistakable in the record before us is Mr. Nguyen's disavowal of signals below the audio frequency spectrum. *Omega*, 334 F.3d at 1325–26 (prosecution history disclaimer must be clear and unmistakable). Mr. Nguyen repeatedly distinguished his inventions from Yollin on the grounds that Yollin taught "slow-varying signals" whereas his inventions involved "audio or higher frequency" signals. *See* J.A. 1784–85. The examiner's acceptance of that distinction and resulting decision to allow the claims suggest that Mr. Nguyen and the examiner reached an understanding on that point. To the extent Mr. Nguyen's statements may implicate other claim scope— such as signals of frequency up to 500 Hz—the record does

not rise to the level of establishing a "clear and unmistakable" disavowal. *Tech. Props.*, 849 F.3d at 1358 (disclaimer is not established where statements are ambiguous or amenable to multiple reasonable interpretations).

Regarding the 500 Hz threshold, the district court erred by relying on expert testimony to limit the claim scope in a manner not contemplated by the intrinsic record. The district court credited Dr. Chizeck's testimony that the signals disclosed in Yollin would have had frequencies up to 500 Hz. *Genuine*, 2020 WL 4366163, at *9 ("Based on Dr. Chizeck's testimony, which identifies 500 Hz as the upper limit of slow-varying signals covered by Yollin, Nintendo proposes that the Court construe 'input signal' as frequencies greater than 500 Hz."). As Genuine points out, the 500 Hz frequency threshold has no basis anywhere in the intrinsic record; instead, Dr. Chizeck divines that threshold from another extrinsic reference he calls "Yuce et al." The district court, however, did not assess the Yuce reference in its decision. Neither a full citation for that reference nor the reference itself appears in the record before us. Nintendo does not make any mention of that reference, let alone attempt to defend its soundness as a basis for Dr. Chizeck's testimony. We are left, therefore, with the conclusion that the district court relied on extrinsic evidence upon extrinsic evidence to draw a bright line in claim scope not suggested anywhere in the intrinsic record. Such evidence cannot properly overcome the clarity with which Mr. Nguyen only disavowed signals below the audio frequency spectrum. *Mantech*, 152 F.3d at 1373; *Vitronics*, 90 F.3d at 1584; *Goldenberg*, 373 F.3d at 1166.

In view of our conclusion above that Mr. Nguyen only disavowed signals below the audio spectrum, the district court also erred to the extent it found that Mr. Nguyen disavowed signals based on their content or nature—namely, "signals generated from positional change information, user selection information, physiological response information, and other slow-varying information." *Genuine*,

2020 WL 4366163, at *10–11. Mr. Nguyen's assertions distinguishing his inventions from Yollin do not clearly and unmistakably demonstrate any such disclaimer. The examiner cited Yollin's teaching of "input information received from motion translation unit 102, user selection unit 104 and physiological response sensor(s) 106" as disclosing the "input signal" limitation. J.A. 1768 (citing Yollin at col. 5 ll. 16–18). In response, Mr. Nguyen distinguished that teaching on the ground that those signals fell below the audio spectrum. *See* J.A. 1784–85. The record does not support finding a separate and distinct disclaimer of claim scope relating to the particular type or content of signal. *Omega*, 334 F.3d at 1325–26; *Tech. Props.*, 849 F.3d at 1357–58.

For the above reasons, we conclude that the district court erred in construing "input signal," and we construe that term to mean "a signal having an audio or higher frequency."

CONCLUSION

We hold that the district court erred in construing the term "input signal." In particular, the district court erred in finding that Mr. Nguyen disclaimed subject matter other than signals below the audio frequency spectrum during prosecution, and it further erred in relying on extrinsic evidence to limit the claim scope to signals above 500 Hz. We therefore conclude that the proper construction of "input signal" is "a signal having an audio or higher frequency." Accordingly, we reverse the district court's grant of summary judgment of non-infringement and remand for further proceedings consistent with this opinion.

REVERSED AND REMANDED

COSTS

No costs.