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Paper 8
Date: April 29, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2025-00180
Patent 11,785,275 B2

Before JEFFREY T. SMITH, MICHELLE N. WORMMEESTER, and SCOTT B. HOWARD, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

Comcast Cable Communications, LLC ("Petitioner") filed a Petition (Paper 2, "Pet."), seeking *inter partes* review of claims 1–20 (the "challenged claims") of U.S. Patent No. 11,785,275 B2 (Ex. 1001, "the '275 patent"). Entropic Communications, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp.").

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2024); 37 C.F.R. § 42.4(a) (2024). *Inter partes* review may not be instituted unless "the information presented in the petition filed under [35 U.S.C.] section 311 and any response filed under [35 U.S.C.] section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). "When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim." 37 C.F.R. § 42.108(a).

For the reasons set forth below, upon considering the briefing and the evidence of record, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner will prevail with respect to at least one of the challenged claims. Accordingly, we institute *inter partes* review on all of the challenged claims based on all of the grounds identified in the Petition.

B. Real Parties in Interest

Petitioner identifies Comcast Corporation, Comcast Cable Communications, LLC, and Comcast Cable Communications Management, LLC, as the real parties-in-interest in this proceeding. Pet. vi.

Patent Owner identifies itself as the real party-in-interest. Paper 5, 1 (Patent Owner's Mandatory Notices).

C. Related Matters

The parties indicate that the '275 patent has been asserted in *Entropic Communications, LLC v. Comcast Corp.*, No. 2:23-cv-01050 (C.D. Cal. filed Feb. 10, 2023), *Entropic Communications, LLC v. Cox Communications, Inc.*, No. 2:23-cv-01049 (C.D. Cal. filed Feb. 10, 2023), and *Entropic Communications, LLC v. Charter Communications, Inc.*, No. 2:23-cv-00052-JRG (E.D. Tex. filed April 27, 2022). Pet. vii; Paper 5, 1. The parties also identify two additional *inter partes* review proceedings involving the '275 patent. Pet. vi; Paper 5, 1.

Petitioner further identifies other proceedings before the Office involving related patents, another district court proceeding in which the '275 patent and other related patents are being asserted, and related patent applications. Pet. vi–ix.

D. The '275 Patent

The '275 patent is titled System and Method for Receiving a Television Signal and is directed "to wideband receiver systems and methods having a wideband receiver that is capable of receiving multiple radio frequency channels located in a broad radio frequency spectrum." Ex. 1001, code (54), 1:32–35. "In particular," the '275 patent "relates to wideband receiver systems that are capable of receiving multiple desired television channels that extend over multiple non-contiguous portions of the

broad frequency spectrum and grouping them into a contiguous, or substantially-contiguous, frequency spectrum." *Id.* at 1:35–40. The system does this using

> a wideband analog-to-digital converter (ADC) module and a digital frontend (DFE) module. The wideband ADC is configured to concurrently digitize a band of frequencies comprising a plurality of desired channels and a plurality of undesired channels. The DFE module is coupled to the digital in-phase and quadrature signals. The DFE module is configured to select the plurality of desired channels from the digitized band of frequencies, and generate an intermediate frequency (IF) signal comprising the selected plurality of desired channels and having a bandwidth that is less than a bandwidth of the band of frequencies, where the generation comprises frequency shifting of the selected plurality of desired channels. The IF signal may be a digital signal and the DFE is configured to output the IF signal via a serial or parallel interface.

Id. at code (57).

E. Illustrative Claim

Claims 1 and 11 are independent claims and claim 1, reproduced below, is illustrative of the subject matter of the challenged claims.

> 1. [1A] A method for operating a television receiver, comprising:
>
> [1B] receiving, by an input terminal, an input signal comprising broadcast channels, the broadcast channels comprising a plurality of desired channels and a plurality of undesired channels, wherein the plurality of desired channels are non-contiguous;
>
> [1C] processing, by a radio front end coupled to the input terminal, the input signal to generate a processed input signal;
>
> [1D] digitizing, by an analog-to-digital converter (ADC) coupled to the radio front end, the processed input signal to generate a digitized signal;

> [1E] selecting, by a digital frontend (DFE) coupled to the ADC, the plurality of desired channels from the digitized signal; and
>
> [1F] outputting, by the DFE, the selected plurality of desired channels to at least one demodulator as a digital datastream, wherein the demodulator extracts information encoded in the digital datastream.

Ex. 1001, 12:22–41; *see also* Pet. 79 (adding brackets).

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–20 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 5, 7–13, 15, 17–20	102[1]	Zhang[2]
1–3, 5, 7–13, 15, 17–20	103(a)	Zhang
2, 3, 12, 13	103(a)	Zhang, Pandey[3]
2, 12	103(a)	Zhang, Zhang '933[4]
4, 11–15, 17–20	103(a)	Zhang, Mirabbasi[5]

[1] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. §§ 102 and 103 that became effective on March 16, 2013. Pub. L. No. 112–29, 125 Stat. 284, 287–88 (2011). The application that issued as the '275 patent was filed after that date but claims the benefit of the filing of applications filed before the effective date. Ex. 1001, codes (22), (60), (63). For purposes of this Decision, we apply the pre-AIA version of the statute. We note that we would reach the same outcome applying the AIA version.

[2] US 2003/0056221 A1, published Mar. 20, 2003 (Ex. 1013).

[3] US 7,237,214 B1, issued Jun. 26, 2007 (Ex. 1014).

[4] WO 2004/059933 A1, published July 15, 2004 (Ex. 1077).

[5] Mirabbasi, S., & Martin, K. (2000). Classical and Modern Receiver Architectures. *IEEE Communications Magazine*, *38*(11), 132–139. https://doi.org/10.1109/35.883502 (Ex. 1018).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
5, 6, 15, 16	103(a)	Zhang, Dong[6]
12, 13	103(a)	Zhang, Mirabbasi, Pandey
12	103(a)	Zhang, Mirabbasi, Zhang '933
15, 16	103(a)	Zhang, Mirabbasi, Dong

Pet. 14–15. Petitioner also relies on the testimony of David B. Lett (Ex. 1002) and Sylvia Hall-Ellis, Ph.D. (Ex. 1073).

II. ANALYSIS

A. Legal Standards

1. Anticipation

A patent claim is unpatentable under 35 U.S.C. § 102 if "the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation." *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). "A single prior art reference may anticipate without disclosing a feature of the claimed invention if such feature is necessarily present, or inherent, in that reference." *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 958 (Fed. Cir. 2014). Moreover, the reference must also "disclose[] within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). However, "the reference need not satisfy an *ipsissimis verbis* test." *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009).

[6] US 2004/0250284 A1, published Dec. 9, 2004 (Ex. 1078).

2. Obviousness

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under 35 U.S.C. § 103 that requires consideration of four factors: (1) the "level of ordinary skill in the pertinent art," (2) the "scope and content of the prior art," (3) the "differences between the prior art and the claims at issue," and (4) if in evidence, "secondary considerations" of non-obviousness such as "commercial success, long-felt but unsolved needs, failure of others, etc." *Id.* at 17–18. "While the sequence of these questions might be reordered in any particular case," *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the U.S. Court of Appeals for the Federal Circuit has repeatedly emphasized that "it is error to reach a conclusion of obviousness until all those factors are considered," *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1328 (Fed. Cir. 2016). Because Patent Owner does not address objective evidence of non-obviousness, we focus solely on the first three *Graham* factors.

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the pertinent art at the time of the invention is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors we consider when determining whether a patent claim is obvious over the prior art. *See Graham*, 383 U.S. at 17–18.

Factors pertinent to a determination of the level of ordinary skill in the art include "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field." *Envtl. Designs,*

Ltd. v. Union Oil Co. of Cal., 713 F.2d 693, 696–97 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). "Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case." *Id.*

Petitioner argues that a person having ordinary skill in the art "would have had a degree in electrical engineering, or a similar discipline, along with three-to-four years of experience with digital signal processing and RF tuning systems for satellite and/or cable digital communications. Additional education may substitute for professional experience, and significant work experience may substitute for formal education." Pet. 19 (citing Ex. 1002 ¶¶ 30–32).

Patent Owner does not address the level of skill. *See* Prelim. Resp.

Because Petitioner's proposed level of ordinary skill in the art is consistent with the field of the invention of the '275 patent and not disputed by Patent Owner, for purposes of this Decision, we adopt Petitioner's formulation of the person having ordinary skill in the art.[7]

[7] If Patent Owner disagrees with this formulation of the level of skill in the art, it must raise that disagreement in its Response. If a different level of skill would affect the outcome in this case, the parties must brief that issue as well. The failure of Patent Owner to describe how a different level of skill in the art is determinative will be a forfeiture of that argument. If there is a dispute regarding the level of ordinary skill in the art, then the parties are also encouraged to submit evidence, other than conclusory expert testimony, that supports their position. *See* 37 C.F.R § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

C. Claim Construction

We apply the same claim construction standard used in the federal courts, in other words, the claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), which is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under the *Phillips* standard, the "words of a claim 'are generally given their ordinary and customary meaning,'" which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1312–13 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed.Cir.1996)).

Petitioner states that all of the limitations "should be given their ordinary and customary meaning to a" person having ordinary skill in the art. Pet. 19. Although Petitioner argues that none of the limitations are means-plus-function terms, Petitioner provides constructions to the extent that there are means-plus-function terms. Pet. 19–20. Patent Owner does not respond. *See* Prelim. Resp.

For the purposes of this Decision, we need not expressly construe any claim terms.[8] *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor*

[8] If either party intends to argue a claim construction at trial, including what is the plain and ordinary meaning of a term, they should do so in a clearly designated section of their briefing. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 21, 2019) ("Practice Guide"), 46, 49 (*available at* https://www.uspto.gov/TrialPracticeGuideConsolidated); *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008) ("A determination that a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary'

Co., 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that "we need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Parallel Petitions

Petitioner filed three petitions for *inter partes* review of the '275 patent. IPR2025-00180, IPR2025-00181, IPR2025-00182. *See* Pet. vi. Concurrent with the filing of these petitions, Petitioner filed a Petition Ranking and Explanation of Material Differences Between Petitions, ranking its three petitions directed to the '275 patent in accordance with the guidance in the November 2019 Consolidated Trial Practice Guide. Paper 3 ("Ranking"); *see also* Practice Guide, 59–60. In that Paper, Petitioner ranked the instant Petition first. Paper 3, 1.

Patent Owner argues that due to Petitioner's long history of abusing the post-grant proceeding process by consistently filing multiple petitions directed to a single patent, we should not institute trial based on any of the petitions challenging the '275 patent. Prelim. Resp. 7–34. Patent Owner further argues that if we do institute, we should institute on no more than one petition. Prelim. Resp. 34–35.

We do not agree with Patent Owner that Petitioner's filing of three parallel petitions is grounds to deny all three petitions on that basis alone. Petitioner has complied with our guidance by filing a statement ranking the petitions. *See* Practice Guide, 59–60. For reasons discussed in our concurrent Decisions Denying Institution in IPR2025-00181 and IPR2025-

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meaning does not resolve the parties' dispute."). Claim construction arguments should not be relegated to patentability arguments on the facts.

00182, however, we agree with Patent Owner that plural petitions are not warranted. Given our Decisions to Deny Institution in IPR2025-00181 and IPR2025-00182 and the official guidance we have received in the Practice Guide, we have no option but to deny Patent Owner's request that we exercise our discretion to deny institution on all three of the petitions challenging the '275 patent. Accordingly, we do not exercise our discretion to the deny institution in the instant proceeding.

E. Anticipation of Claim 1 by Zhang

Petitioner argues that claim 1 is unpatentable as anticipated by Zhang. Pet. 21–38. Based on the current record, we are sufficiently persuaded that Petitioner has established a reasonable likelihood of prevailing on this asserted ground with respect to claim 1.

1. Zhang

Zhang is titled "Digital Implementation of Multi-Channel Demodulators" and "relates generally to broadband communications, and more particularly to a method and circuitry for implementing demodulator circuits." Ex. 1013, code (54), ¶ 4.

> The demodulator includes a frequency-block down-converter that receives a multi-channel analog RF signal and shifts the multi-channel analog RF signal to a lower frequency band. An ADC receives the multi-channel analog RF signal from the frequency-block down-converter and converts the multi-channel analog RF signal to a multi-channel digital RF signal. A digital channel demultiplexer receives the multi-channel digital RF signal from the ADC and demultiplexes the multi-channel digital RF signal into separate digital RF channels.

Id. at code (57).

2. Analysis of Claim 1

Petitioner argues that claim 1 is unpatentable as anticipated by Zhang. Pet. 21–38. Petitioner's argument is supported by citation to both Zhang and the testimony of Mr. Lett. *Id.*

On the current record, Patent Owner does not dispute Petitioner's arguments or evidence. *See* Prelim. Resp.

After reviewing Petitioner's arguments and information regarding claim 1, including the Lett Declaration, which are not addressed by Patent Owner at this stage, we are persuaded that Petitioner sufficiently demonstrates, for purposes of this Decision, that claim 1 is anticipated by Zhang.

F. Analysis of Remaining Claims and Obviousness of Claim 1

Because Petitioner demonstrates a reasonable likelihood of success in proving that at least one claim of the '275 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See* 37 C.F.R. § 42.108(a). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of every challenge raised by Petitioner, especially, as in this case, when Patent Owner does not provide a response to those claims. Those challenges, in our view, are best left for trial after full development of the record.

III. CONCLUSION

Following § 314, we have determined that the totality of the information presented at this stage shows there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition, and we institute on all grounds raised and all claims challenged in the Petition. We also decline to exercise our discretion

to deny institution based on Petitioner filing multiple petitions challenging the claims of the '275 patent

Our factual findings, conclusions of law, and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record developed thus far. This is not a final decision as to the patentability of claims for which *inter partes* review is instituted. Our final decision will be based on the record as fully developed during trial.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that *inter partes* review of claims 1–20 of U.S. Patent No. 11,785,275 B2 is *instituted* with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of U.S. Patent No. 11,785,275 B2 is instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is given of the institution of a trial.

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