

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS INC.,
Petitioner,

v.

RED ROCK ANALYTICS, LLC,
Patent Owner.

IPR2017-01490
Patent 7,346,313 B2

Before MICHAEL R. ZECHER, BARBARA A. BENOIT, and
JOHN D. HAMANN, *Administrative Patent Judges*.

HAMANN, *Administrative Patent Judge*.

DECISION
Denying Petitioner's Request for Rehearing
37 C.F.R. § 42.71(d)

I. INTRODUCTION

Unified Patents Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 1–7, 15, 16, 21, 22, 30, 32, 37–44, 52, 53, 58, 59, 67, 69, and 74 (the “challenged claims”) of U.S. Patent No. 7,346,313 B2 (Ex. 1001, “the ’313 Patent”) pursuant to 35 U.S.C. § 311. Paper 2 (“Pet.”). Red Rock Analytics, LLC (“Patent Owner”) filed a Patent Owner Preliminary Response. Paper 7 (“Prelim. Resp.”). Petitioner, after obtaining authorization (Paper 15), filed a Reply (Paper 16) to the Preliminary Response. In our Decision, we determined that the information presented in the Petition and accompanying evidence did not establish a reasonable likelihood that Petitioner would prevail in showing the unpatentability of at least one challenged claim of the ’313 Patent. Paper 18 (“Dec.”) at 8–19. Accordingly, we denied the Petition and did not institute an *inter partes* review of the ’313 Patent. *Id.* at 19–20.

Petitioner now requests rehearing of our Decision not to institute trial on the challenged claims. Paper 19 (“Req. Reh’g”). For the following reasons, we deny Petitioner’s Request for Rehearing.

II. STANDARD OF REVIEW

The applicable standard for a request for rehearing is set forth in 37 C.F.R. § 42.71(d), which provides in relevant part:

A party dissatisfied with a decision may file a request for rehearing, without prior authorization from the Board. The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.

When reconsidering a decision on institution, we review the decision for an abuse of discretion. *See* 37 C.F.R. § 42.71(c). An abuse of discretion may be determined if a decision is based on an erroneous interpretation of law, if a factual finding is not supported by substantial evidence, or if the decision represents an unreasonable judgment in weighing relevant factors. *See Star Fruits S.N.C. v. United States*, 393 F.3d 1277, 1281 (Fed. Cir. 2005); *Arnold P’ship v. Dudas*, 362 F.3d 1338, 1340 (Fed. Cir. 2004); *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000).

III. ANALYSIS

Each independent challenged claim recites that “the calibration RF signal *includes* a calibration cycle.” Ex. 1001, 11:56–12:5 (claim 1), 12:22–54 (claim 7), 13:18–49 (claim 16), 13:63–14:30 (claim 22), 14:65–15:32 (claim 32), 15:46–62 (claim 38), 16:12–44 (claim 44), 17:8–37 (claim 53), 17:52–18:19 (claim 59), 18:52–19:18 (claim 69) (emphasis added). In denying the Petition, we found that Petitioner did not establish that the prior art disclosed or rendered obvious this limitation. Dec. 8–19. More specifically, we found that the *calibration cycle* relates to a feature of the calibration radio frequency (“RF”) signal (i.e., the signal *includes*), rather than simply requiring having a calibration process occur, as Petitioner submitted. *Id.* at 15–19. Our reasoning underlying this finding related to (A) the language of the limitation, (B) the language of dependent claims, and (C) the ’313 Patent’s Specification. *Id.*

Petitioner contends we misapprehended the meaning of “calibration cycle” and overlooked that the parties and their experts agreed on its meaning. Req. Reh’g 1–5. Petitioner argues, rather than being a feature of the calibration RF signal, “calibration cycle” refers to “a three-step process,

independent of the type of calibration signal.” *Id.* at 1–3. Petitioner contends that this three-step process comprises: “[1] originating a calibration signal at the baseband transmit input, [2] observing the calibration signal at the receive baseband output, and [3] processing the calibration signal to form and minimize an observable indicator of I-Q imbalance.” *Id.* at 2 (quoting Ex. 1004 (Declaration of Tim A. Williams, Ph.D.) ¶ 73). As a result of misapprehending the scope and meaning of “calibration cycle,” Petitioner contends we overlooked that Warner¹ discloses that “the calibration RF signal *includes* a calibration cycle.”² *Id.* at 1.

We are not persuaded by Petitioner’s arguments. We address these arguments below regarding “calibration cycle” in the context of our reasoning.

A. *Language of the limitation*

The limitation requires that “the calibration RF signal *includes* a calibration cycle.” *E.g.*, Ex. 1001, 11:66–67 (emphasis added). We found that how the calibration cycle is referred to in this limitation (i.e., signal includes it) underscores that the calibration cycle is a feature of the calibration RF signal itself. Dec. 15–16. Rather than addressing this claim

¹ U.S. Patent No. 6,940,916 B1 (issued Sept. 6, 2005) (Ex. 1003, “Warner”).

² We do not address further Warner’s teachings because Petitioner’s arguments are predicated on our having misapprehended the meaning of “calibration cycle,” which we did not. In an *inter partes* review, the petitioner has the burden to show why the patent it challenges is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015)(citation omitted).

language substantively, Petitioner calls the wording “awkward.” Req. Reh’g 5. Petitioner does so, however, despite “the claims [being] ‘of primary importance, in the effort to ascertain precisely what it is that is patented.’” *Merrill v. Yeomans*, 94 U.S. 568, 570 (1876); *see also In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (“[T]he name of the game is the claim.”).

We also found that subsequently referring to *using* the included “calibration cycle so as to determine” the minimizing gain settings — each of the independent challenged method claims require such — also supports that the calibration cycle is a feature of the calibration RF signal. Dec. 15. Petitioner argues, to the contrary, that this requirement supports its argument because “determining gain settings requires the three-step process, not merely a signal alone.” Req. Reh’g 3. We are not persuaded by Petitioner’s argument, which ignores that these method claims, in addition to reciting “using the calibration cycle,” separately recite steps of the alleged three-step process.³ *See, e.g.*, Ex. 1001, 15:50–62 (claim 38) (reciting “injecting a calibration RF signal, generated in response to and as a function of a signal generated through the transmit chain, into the receive chain” and “determining receiver I-Q gain settings so as to minimize the observable indicator while holding transmit I-Q gain settings constant”), 16:12–44 (claim 44) (reciting “generating a calibration RF signal,” “injecting the calibration RF signal,” “processing the baseband receive calibration RF signal,” and “varying the differential I-Q gain”).

³ We similarly are not persuaded by Petitioner noting (Req. Reh’g 2) that claim 1 recites “the calibration cycle determines transmitter I-Q gain settings which minimize an observable indicator” as claim 1 also recites aspects of Petitioner’s alleged three-step process. Ex. 1001, 11:56–12:5.

B. Language of dependent claims

We also found that numerous dependent claims evidence that the included calibration cycle is a feature of the calibration RF signal. Dec. 16. For example, a series of dependent claims also recite “the calibration RF signal includes” phrase followed by specific features (e.g., “a sequence of pulses taking on purely real or imaginary values at any instant,” “a sampled phasor,” “a discrete phasor,” and “a discrete phasor comprising j^n or j^{-n} ”). *Id.* at 16 & n.5 (citing, *inter alia*, Ex. 1001, 13:4–13 (reciting these dependent claims as issued)). These dependent claims underscore that the calibration cycle is a feature (e.g., pulses, phasors, j^n , j^{-n} , calibration cycle) *included* in the calibration RF signal.

Petitioner misses the point in arguing that “the claims refer exclusively to the ‘calibration RF signal’—not the ‘calibration cycle’—as including these features.” Req. Reh’g 4 (citation omitted). The repeated use of “the calibration RF signal includes” phrase followed by a specific feature shows that the calibration cycle is yet another example of a feature. In other words, the included calibration cycle is akin to a sequence of pulses, a discrete phasor (e.g., j^n or j^{-n}), or a sampled phasor. *See Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) (citing *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003) (“Unless otherwise compelled, when different claims of a patent use the same language, we give that language the same effect in each claim.”)).

Furthermore, Petitioner points us to dependent claim 15 as supporting its argument because this claim “requires that ‘successive calibration cycles are used to refine or maintain I-Q balance,’” and asserts that “the calibration

cycle (i.e., the three-step process) must be repeated over time at some interval or frequency, as the '313 Patent describes.” Req. Reh’g 3 (citing Pet. 58; Ex. 1001, 6:10–21, 11:19–28). The paragraphs of the '313 Patent that Petitioner cites, however, relate to “[t]he overall calibration *process*” and “[t]he calibration *operation*,” rather than simply a calibration cycle. Ex. 1001, 6:1–13 (emphasis added), 10:24 (emphasis added), 11:17–37. Rather, in accordance with dependent claim 15, the Specification discloses that a calibration “signal may be produced by the sequence {l, j, -1, -j} [(i.e., a calibration cycle)] repeated [(i.e., “successive calibration cycles”)] for the duration of the calibration signal.” *Id.* at 10:67–11:1; *see also id.* at 10:24–11:16 (showing that this signal relates to calibration). We, thus, also do not find persuasive Petitioner’s arguments (Req. Reh’g 4–5) that the '313 Patent fails to teach or suggest that the sequence {l, j, -1, -j} “embodiment of a calibration *signal* is a calibration *cycle*” or that our interpretation of this claim limitation “would render the claims invalid for indefiniteness and lack of written description.” *See, e.g.*, Ex. 1001, 10:24–11:16.

C. '313 Patent’s Specification

We found that the '313 Patent’s Specification focuses on features of the calibration signal and supports our interpretation that the *calibration cycle* is a feature of the calibration RF signal. Dec. 16–17. For example, the '313 Patent discloses:

The calibration signal must be designed to be sensitive to I-Q gain imbalance. Furthermore, reasonably simple processing should be capable of producing an observable indicator of that imbalance. The calibration signal and subsequent processing must be such that the observable indicator of gain imbalance can only be minimized when both the transmit and receive gain imbalances have been individually minimized.

Dec. 16 (quoting Ex. 1001, 5:58–65); *see also id.* at 16–17 (quoting Ex. 1001, 8:48–53 (“A variety of calibration signals could be found useful. These should be easy to generate and process, and the effect of I-Q gain imbalance must be directly related to an observable feature.”))).

Petitioner ignores these teachings of the ’313 Patent and argues we overlooked that the ’313 Patent describes a “calibration cycle” as a three-step process, as explained by its expert, Dr. Williams. Req. Reh’g 2 (quoting Ex. 1004 ¶ 73 (citing Ex. 1001, 2:55–56, 3:49–51, 5:29–31, 10:26–42)) (“The ’313 Patent describes [1] originating a calibration signal at the baseband transmit input, [2] observing the calibration signal at the receive baseband output, and [3] processing the calibration signal to form and minimize an observable indicator of I-Q imbalance.”). Petitioner also argues we overlooked that Patent Owner’s expert, Payam Heydari, Ph.D., “describe[d] the ‘calibration cycle’ the same way.” Req. Reh’g 2 (citing Paper 7; Ex., 2001 ¶ 53 (citing Ex. 1001, 10:24–42, Fig. 4)).

We are not persuaded by these arguments. “Although expert testimony and declarations are useful to confirm that the construed meaning is consistent with the denotation ascribed by those in the field of the art, . . . such extrinsic evidence cannot be used to vary the plain language of the patent document.” *Omega Engineering*, 334 F.3d at 1332 (citing *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999) & *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996)). Furthermore, the parties’ experts do not explain how, in their view, the calibration RF signal *includes* a calibration cycle, nor what meaning they are ascribing to “includes.” *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.”).

Petitioner also cites to other portions of the '313 Patent's Specification as supporting its arguments that calibration cycle means a three-step process. See Req. Reh'g 4–5 (quoting Ex. 1001, 8:21–26 (arguing that the “RF signal from the transmit chain is provided a path to the RF receive chain, shown for example through an attenuator 120. This injection can be effected in many ways. It could be a dedicated signal path which is *disabled in normal transceiver operation but activated for a calibration cycle.*”)). The aforementioned portions of the '313 Patent Specification, however, do not serve to contradict the clear teachings of the '313 Patent regarding the importance of what the calibration RF signal includes. The calibration signal chosen “must be designed to be sensitive to I-Q gain imbalance” and produce an observable indicator of that imbalance that “can only be minimized when both the transmit and receive gain imbalances have been individually minimized.” See Ex. 1001, 5:58–65, 8:48–53. An example of such a calibration signal is “a sequence of pulses, in any order, for which a pulse is either purely real or purely imaginary at the transmit baseband input.” Ex. 1001, 8:51–53; *see also id.* at Fig. 5, 8:54–62 (providing “a phase control 130 for shifting RF carrier phase so that the signal can be made to substantially appear at only the I or Q output of the receive baseband”).

IV. CONCLUSION

Upon consideration of Petitioner's Request for Rehearing, our Decision, and the evidence of record as of the date of our Decision, we determine that Petitioner has not demonstrated that we misapprehended or overlooked the scope and meaning of "calibration cycle," much less that we abused our discretion in denying the Petition. Accordingly, we deny the request for rehearing.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner's Request for Rehearing is denied.

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