

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2024-00442
Patent 9,825,826 B2

Before JON M. JURGOVAN, SCOTT. B. HOWARD, and
AARON W. MOORE, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

DECISION
Granting-in-Part Petitioner's Request on Rehearing
of the Final Written Decision
37 C.F.R. § 42.71(d)

I. INTRODUCTION

On September 15, 2025, Comcast Cable Communications, LLC (“Petitioner”) filed a Request for Rehearing (Paper 31, “Req. Reh’g”) of our Final Written Decision (Paper 30, “Decision” or “Dec.”) entered on August 15, 2025.

In our Decision, we determined that Petitioner had demonstrated that claims 1–4, 9–13, and 18 of U.S. Patent No. 9,825,826 B2 (“the ’826 patent,” Ex. 1001) are unpatentable, but had not demonstrated that claims 5–8 and 14–17 are unpatentable. Dec. 55.

In the Request for Rehearing, Petitioner contends that the Board’s finding for claims 6 and 15 of the ’826 patent relied on erroneous claim constructions in determining these claims not unpatentable as obvious over the combination of Kamieniecki and Konstantinos. Req. Reh’g 1–7. Regarding claims 8 and 17, Petitioner asserts that the Board overlooked disclosure of the signal-to-noise ratio in Konstantinos, rendering these claims unpatentable over the combination of Kamieniecki and Konstantinos. *Id.* at 7–9. In addition, Petitioner asserts that the Board overlooked disclosure in Renken’s provisional application stating that problems could be detected by the cable modem, such that the ’826 patent’s claims would be obvious over Renken alone, and in combination with Aggarwal. *Id.* at 9–12.

After review, for the following reasons, we grant-in-part Petitioner’s Request for Rehearing limited to claims 8 and 17 and modify the Final Written Decision accordingly.

II. STANDARD OF REVIEW

A party requesting rehearing bears the burden of showing that the decision should be modified. 37 C.F.R. § 42.71(d). Under 37 C.F.R.

§ 42.71(d), a party requesting rehearing of a decision must identify specifically all matters we misapprehended or overlooked, and the place where each matter was previously addressed. *Id.* When rehearing a decision on petition, the Board “review[s] the decision for an abuse of discretion.” 37 C.F.R. § 42.71(c) (2021). 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. *Star Fruits S.N.C. v. U.S.*, 393 F.3d 1277, 1281 (Fed. Cir. 2005).

III. ANALYSIS

We address Petitioner’s contentions below in the order presented in the Request for Rehearing.

A. Alleged Erroneous Claim Constructions Relating to Claims 6 and 15

For context in understanding Petitioner’s contentions, we reproduce excerpts of claims 1 and 6 below. Claim 15 is similar to claim 6.

Claim 1 of the ’826 patent recites in part:

controlling the transmission of network management messages
back to said headend based on said measured characteristic of
said received signal.

Ex. 1001, 7:51–53.

Claim 6 recites:

6. The method of claim 1, wherein said characteristic is
signal power vs. frequency.

Id. at 8:5–6.

Petitioner contends that the Final Written Decision errs in the construction of this claim language. Req. Reh’g 2–3. Specifically,

Petitioner asserts that the claim language does not require reporting a measured characteristic back to the headend. *Id.*

We agree with Petitioner that the claim language does not require reporting a measured characteristic to the headend. However, we disagree with Petitioner that we construed the claim language in this way. In the Final Written Decision, we stated the following:

Petitioner contends that Kamieniecki describes measuring signal level (“signal power”) of the channels it monitors, and that each channel has its own frequency, such that reporting “channel absence/presence” to the headend would include whether signal power is out of bounds such that the channel cannot be displayed properly. Pet. 46–47 (citing Pet. §§ VI.A.2.g–h; Ex. 1009 ¶¶ 14–15, 22–23; Ex. 1002 ¶¶ 198–200), 57.

We agree with Patent Owner (PO Resp. 42) that controlling transmission of network management messages to the headend based on “channel absence/presence” or “signal level estimates” is not equivalent to reporting “signal power vs. frequency.”

Dec. 42–43. This was not claim construction but merely restating what Petitioner contended (and we agreed) that Kamieniecki disclosed. *See, e.g.*, Pet. 46 (“Kamieniecki reports ‘channel presence/absence’ for a monitored channel to the headend”); Ex. 1009 ¶ 14. Accordingly, we did not engage in erroneous claim construction, as Petitioner asserts.

Petitioner further contends that we adopted an erroneous construction of “signal power vs. frequency” recited in claim 6 and claim 15.

Req. Reh’g 3–7. Specifically, Petitioner disagrees with our understanding of the ordinary and customary meaning of “signal power vs. frequency” as implying “a graph, array or relationship with multiple pairs of power and frequency values, not just a single power-frequency data point.” Dec. 43. Petitioner argues that we did not set forth this construction in our Institution

Decision (Paper 8) nor did Patent Owner or Petitioner propose it.

Req. Reh’g 3–4. Petitioner asserts that the ’826 patent’s specification mentions “signal power vs. frequency” only once and does not describe it as a graph, array, or multiple data points. *Id.* at 4–5. According to Petitioner, “signal power vs. frequency” may be met through measurement of power level at a single frequency. *Id.* at 6.

We are not persuaded by Petitioner’s arguments and hold to our understanding of “signal power vs. frequency” as “a graph, array or relationship with multiple pairs of power and frequency values, not just a single power-frequency data point.” Dec. 43. We think that those of ordinary skill in the art at the time would have been very familiar with functions of the form “y vs. x” or, in this case, “signal power vs. frequency.” Thus, our understanding is consistent with the ordinary and customary meaning of this claim language.

Petitioner also takes the view that that “*a* characteristic” in the ’826 patent’s claim 1 must be construed to mean “one or more.” *Id.* at 4. In addition, Petitioner contends that “signal power vs. frequency” is described in the ’826 patent with respect to “band C_{J+1} ” which “may comprise any portion or portions” of the signal. *Id.* at 4–5. We do not see how these assertions support Petitioner’s arguments. To the contrary, they support our understanding that “signal power vs. frequency” relates to multiple pairs of power and frequency values, i.e., a function.

Petitioner further contends that we overlooked Petitioner’s argument that Kamieniecki monitors multiple channels, not just one, and describes tuning to each of its monitored channels and measuring the signal level for reporting presence or absence of channels, which would involve multiple

pairs of power and frequency values. *Id.* at 5–6 (citing Pet. 46–47; Pet. Reply 18). Although Petitioner’s contention in this regard is correct (see Ex. 1009 ¶¶ 15, 22, Fig. 2), Petitioner has not shown that the combination of Kamieniecki and Konstantinos controls the transmission of network management messages to the headend based on “signal power v. frequency” as claimed.

Petitioner’s arguments concerning claim 6 and claim 15 do not demonstrate that we misconstrued the ordinary and customary meaning of the claim language, nor overlooked Kamieniecki’s teachings.

B. Overlooking of Konstantinos’s Disclosure of Signal-to-Noise Ratio as Recited in Claims 8 and 17

Claim 8 recites as follows:

8. The method of claim 1, wherein said characteristic is one of: signal-to-noise ratio, peak-to-average ratio, noise levels, bit error rate, and symbol error rate.

Ex. 1001, 8:9–11. Claim 17 recites a similar limitation.

Petitioner contends that we did not address in the Final Written Decision whether Konstantinos’s “Signal to Noise” satisfied the “signal-to-noise ratio” of claim 8 which when outside acceptable bounds would be a basis for Kamieniecki reporting channel absence to the headend. Req. Reh’g 7–9.

We agree with Petitioner that we overlooked considering Konstantinos’s “Signal-to-Noise” in relation to claim 8’s “signal-to-noise ratio” and grant rehearing on this issue. Ex. 1009 ¶ 109. After review, we determine that Konstantinos’s “Signal-to-Noise” is equivalent to claim 8’s “signal-to-noise ratio.” *Id.* at 8–9 (citing

Pet. 49–50; Ex. 1009 ¶¶ 14, 22–23; Ex. 1010 ¶ 109; Ex. 1002 ¶¶ 207–211).

Accordingly, we grant Petitioner’s rehearing request limited to this issue and modify the Final Written Decision to indicate that claim 8 and claim 17 are unpatentable as obvious over the combination of Kamieniecki and Konstantinos.

C. Alleged Overlooking Disclosure in Renken Provisional that Problems Could Be Detected by the Cable Modem

Petitioner challenged the ’826 patent’s claims as obvious over Renken (Ground E) and the combination of Renken and Aggarwal (Ground F). *See* Pet. 22, 58–76 (“the Renken grounds”). We determined that Petitioner had not demonstrated unpatentability of the ’826 patent’s claims on these grounds because Renken’s measurement-cable modems (MCCM) only reported measurements for centralized “collection, evaluation, and storage” by the central management controller (CMC), and sending only measurements would not meet the claimed “network management messages” since they are required to be “different than” measured characteristics according to the claims. Dec. 52–54.

Although Petitioner asserted that a CMC’s error reports or alarms “could just as easily be generated at the MCCM” (Pet. 66; Ex. 1002 ¶ 280), we determined that there was “nothing to suggest this in Renken or elsewhere, and this would be contrary to Renken’s centralized architecture where the CMC requests MCCMs to perform measurements and return them to the CMC for collection, evaluation, and storage.” Dec. 54.

Petitioner contends that we overlooked disclosure in Renken’s provisional (Ex. 1012), which was incorporated by reference in Renken (Ex. 1010), highlighted in blue below:

Some things enabled by this invention that do not exist in prior art:

1. An MCCM could detect that there is a problem with a non-DOCSIS channel within the customer premise. This problem could be addressed before the customer has a chance to complain about it.
2. Multiple MCCMs working together, as directed by the CMC, could detect that there is a problem with one or more non-DOCSIS channels in one part of the cable network. This would allow technicians to diagnose problems with network equipment outside a customer premise. The problem could be addressed before a customer complains about it.
3. An MCCM could use an upstream transmitter to transmit signals in the upstream frequency band to check frequency response of the upstream. Some other piece of network test equipment could reside at the headend and monitor these signals and determine if there problems in the upstream portion of the network.
4. An MCCM could detect that given the measurement results at its location, that a neighbor on the network without an MCCM might have a problem that needs to be investigated. This problem could be addressed before the customer complains about it.

Req. Reh'g 11 (citing Ex. 1012, 15).

We hold to our determination in the Final Written Decision that the Petition did not explain sufficiently how Renken and its provisional would teach or suggest the claimed “controlling the transmission of network management messages back to said headend based on said measured characteristic of said received signal, wherein said measured characteristic is different than said network management messages” as recited in the claims of the '826 patent. For example, Petitioner does not identify any equivalent, either in Renken or its provisional, to the “network management messages” whose transmission to the headend are based on “measured characteristics” at the MCCM.

Petitioner's argument overlooks that the '826 patent's claims require that the signal to be analyzed has multiple channels and is received via the hybrid fiber coaxial (HFC) network, not from “a non-DOCSIS channel within a customer premise” or “a neighbor on the network” who lacks an MCCM. See above blue-highlighted portions of Renken's provisional.

Accordingly, we are not persuaded by Petitioner's argument that we overlooked disclosure in Renken's provisional.

Petitioner further argues that we did not address Petitioner's argument that even if the MCCM used its “error threshold” as a trigger for sending a

problematic measurement, prompt correction of the detected problem would have rendered obvious at least “including some information with the measurement to indicate that this is not just an ordinary measurement report, but rather indicative of a problem.” Req. Reh’g 12 (citing Pet. Reply 22). According to Petitioner, “marking a measurement urgent” or a “message saying my neighbor might have a problem” would qualify as a “network management message” as either would be different than the measurement and sent based on the measurement. *Id.* (citing Pet. Reply 19, 22).

Again, Petitioner has not demonstrated that the problems mentioned in Renken’s provisional have anything to do with the signal received by the MCCM over the HFC network as recited in the claims of the ’826 patent. For instance, the problem could be with the upstream signal or could be wholly unrelated to signal transmission or reception. Although Petitioner mentions that a message marked urgent or indicating a problem would constitute “network management messages,” we find no mention of any such messages in Renken or its provisional.

Accordingly, Petitioner’s arguments with respect to the Renken grounds do not establish that we overlooked or misapprehended any argument or evidence in the Final Written Decision.

IV. CONCLUSION

For the foregoing reasons, Petitioner has not shown that we overlooked or misapprehended Petitioner’s arguments and evidence with respect to claims 6 and 15 of the ’826 patent or the Renken grounds. However, Petitioner has shown that the Final Written Decision overlooked or misapprehended Petitioner’s arguments and evidence regarding claim 8 and claim 17 and we determine they are obvious over the combination of

Kamieniecki and Konstantinos. Accordingly, Petitioner's Request for Rehearing is granted-in-part as summarized below.

Outcome of Decision on Rehearing:

Claims	35 U.S.C. §	Reference(s)/Basis	Denied	Granted
6, 8, 15, 17	103	Kamieniecki, Konstantinos	6, 15	8, 17
1–18	103	Renken	1–18	
5, 14	103	Renken, Aggarwal	5, 14	
Overall Outcome			1–7, 9–16, 18	8, 17

Final Outcome after Rehearing:

Claims	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1–18	103	Kamieniecki, Konstantinos	1, 2, 4, 8–11, 13, 17, 18	3, 5–7, 12, 14–16
3, 12	103	Kamieniecki, Konstantinos, Sadjja	3, 12	
5, 14	103	Kamieniecki, Konstantinos, Aggarwal		5, 14
7, 16	103	Kamieniecki, Konstantinos, Salinger		7, 16
1–18	103	Renken		1–18
5, 14	103	Renken, Aggarwal		5, 14
Overall Outcome			1–4, 8–13, 17, 18	5–7, 14–16

V. ORDER

For the foregoing reasons, it is

ORDERED that Petitioner's Request for Rehearing is granted-in-part.

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