

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2024-00441
Patent 8,792,008 B2

Before LYNNE H. BROWNE, PATRICK R. SCANLON, and
JON M. JURGOVAN, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

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

I. INTRODUCTION

Comcast Cable Communications, LLC (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review (“IPR”) of claims 1–18 of U.S. Patent No. 8,792,008 B2 (Ex. 1001, “the ’008 patent”). Entropic Communications, LLC (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. See 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). To institute an *inter partes* review, we must determine that the information presented in the Petition shows “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). For the reasons set forth below, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review of the challenged claims on the grounds set forth in the Petition.

Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far. This is not a final decision as to patentability of the challenged claims. Any final decision will be based on the full trial record, including any response to the Petition timely filed by Patent Owner.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies itself, Comcast Corporation, and Comcast Cable Communications Management, LLC as the real parties in interest. Pet. 6. Patent Owner identifies itself as the real party in interest. Paper 4, 1.

B. Related Matters

The parties indicate that the '008 patent is at issue in the following matters:

Entropic Communications, LLC v. Cox Communications, Inc.,
No. 2:23-cv-01049-JWH-KES (C.D. Cal.); and

Entropic Communications, LLC v. Comcast Corporation, No. 2:23-cv-01050-JWH-KES (C.D. Cal.) (“the *Comcast* case”).
Pet. 6–7; Paper 4, 1.

The parties also indicate that the '008 patent was previously at issue in the following matters:

Entropic Communications, LLC v. DIRECTV, LLC, No. 2:22-cv-07775-JWH-JEM (C.D. Cal.);

Entropic Communications, LLC v. DISH Network Corporation,
No. 2:22-cv-07959-JWH-JEM (C.D. Cal.);

Entropic Communications, LLC v. Charter Communications, Inc.,
No. 2:22-cv-00125-JRG (E.D. Tex.) (“the *Charter* case”); and

Dish Network Corporation v. Entropic Communications, LLC,
IPR2023-00393 (PTAB) (institution denied).

Pet. 7–8; Paper 4, 1–2.

Patent Owner identifies the following as patents related to this proceeding: U.S. Patent No. 9,203,653; U.S. Patent No. 9,825,826; U.S. Patent No. 10,063,436; and U.S. Patent No. 10,439,911. Paper 4, 2. Patent Owner also identifies several other patents asserted by Patent Owner, and *inter partes* reviews sought by Petitioner against other patents of Patent Owner. *Id.* at 2–3.

C. The '008 Patent

The '008 patent, titled “Method and Apparatus for Spectrum Monitoring,” issued on July 29, 2014, with claims 1–18. Ex. 1001, codes (45), (54), 7:15–8:59. The '008 patent claims priority to U.S. Provisional Application No. 61/532,098, filed September 8, 2011.¹ *Id.* at code 60.

Figure 1A of the '008 patent is reproduced below.

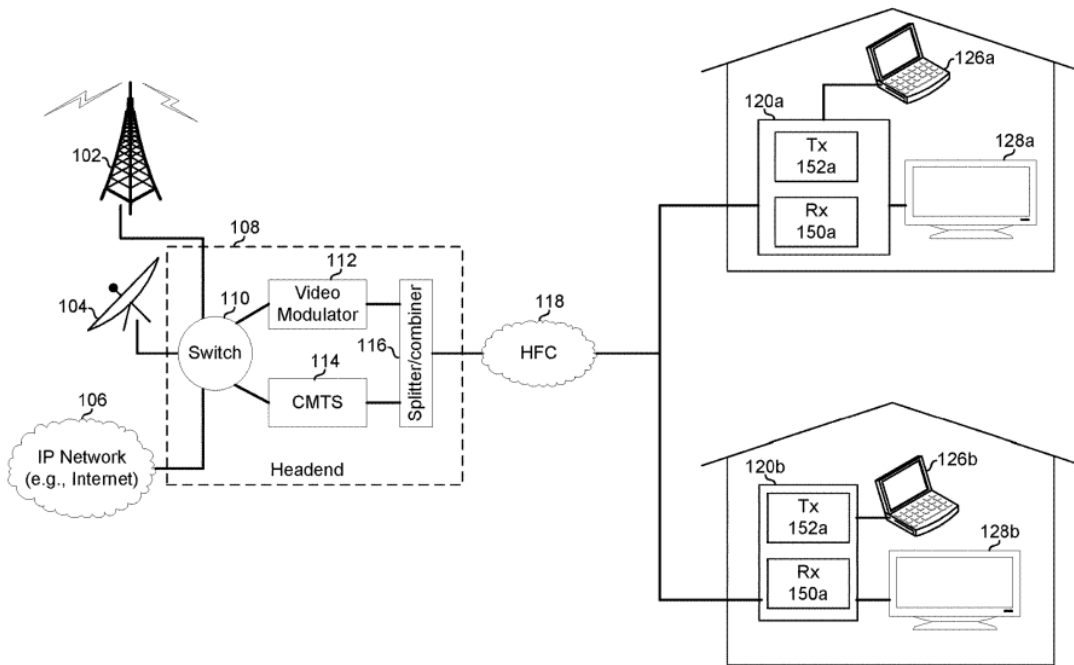


Figure 1A shows communication system headend 108 connected to receiving gateways 120a, 120b via hybrid fiber-coaxial network 118. *Id.* at 2:34–3:4. Each gateway 120a, 120b may comprise receive module 150 and transmit module 152. *Id.* at 2:57–63.

¹ Petitioner does not dispute that the challenged claims are entitled to the benefit of the provisional filing date. See Pet. 2. Therefore, for purposes of this Decision, we consider the effective filing date of the '008 patent to be September 8, 2011.

Figure 1B of the '008 patent is reproduced below.

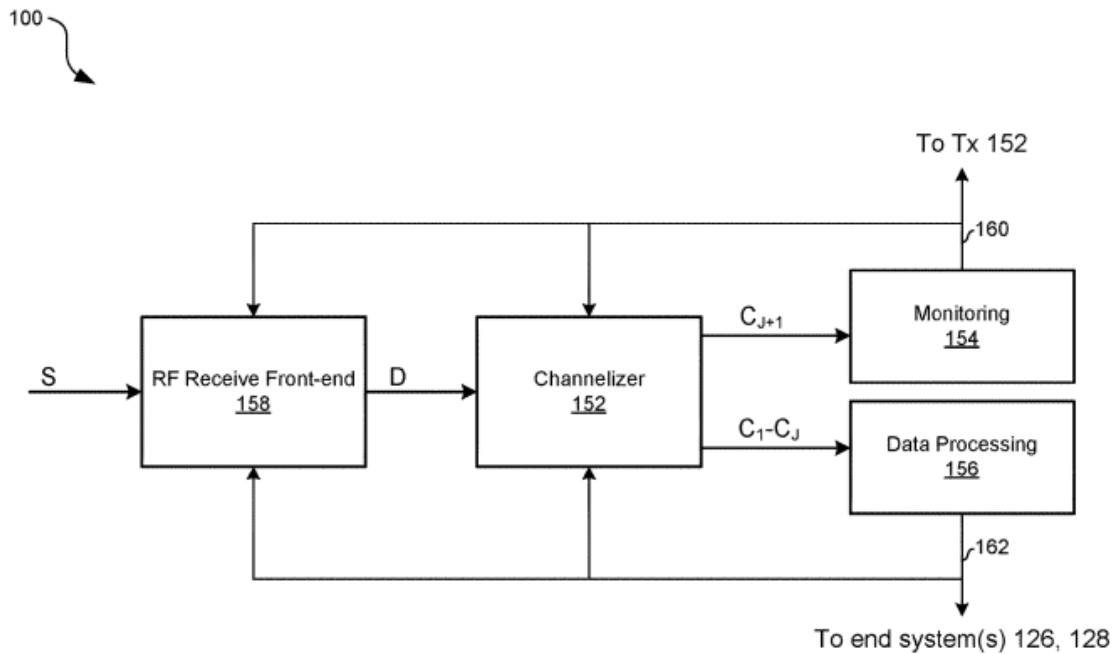


Figure 1B shows an example receiver operable to perform spectrum monitoring. *Id.* at 3:16–18. The receiver comprises circuit 100 including RF receive front-end module 158, channelizer module 102, monitoring module 154, and data processing module 156. *Id.* at 3:5–10. RF receive front-end module 158 receives an RF signal S and processes it to generate a digital signal D. *Id.* at 3:11–12. Channelizer 102 selects J+1 frequency bands (C_1 – C_J) and outputs them to monitoring module 154 and data processing module 156 for output to end systems 126, 128. *Id.* at 3:20–23. Monitoring module 154 analyzes band C_{J+1} from channelizer 102 to measure its characteristics. *Id.* at 3:33–35. The measured characteristic may be signal power level, delay, or phase shift versus frequency, or signal to noise ratio. *Id.* at 3:35–45. Monitoring module 154 may output control signal 160 to configure channelizer 102 or RF front-end receive module 158, or may control the transmission of network management/maintenance messages by the device 150, which may indicate television channels are outside

acceptable bounds and/or convey measured/determined characteristics back to the head-end. *Id.* at 3:48–60.

D. Challenged Claims

As noted above, Petitioner challenges claims 1–18 of the '008 patent. Claims 1, 3, and 11 are independent. Claim 1 is illustrative of the claimed subject matter and is reproduced below.

1. A system comprising:

an analog-to-digital converter operable to digitize a received signal spanning an entire television spectrum comprising a plurality of television channels, said digitization resulting in a digitized signal;

a signal monitor operable to:

analyze said digitized signal to determine a characteristic of said digitized signal; and

report said determined characteristic to a source of said received signal;

a data processor operable to process a television channel to recover content carried on the television channel; and

a channelizer operable to:

select a first portion of said digitized signal;

select a second portion of said digitized signal; and

concurrently output said first portion of said digitized signal to said signal monitor and said second portion of said digitized signal to said data processor.

Ex. 1001, 7:15–32.

E. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. § ²	Reference(s)/Basis
1–18	103	Kamieniecki, ³ Konstantinos ⁴
7, 8, 15, 16	103	Kamieniecki, Konstantinos, Yu ⁵
9, 17	103	Kamieniecki, Konstantinos, Cholas ⁶
1–6, 9–14, 17, 18	103	Renken ⁷
9, 17	103	Renken, Cholas

Pet. 25. Petitioner relies on the Declaration of David B. Lett (Ex. 1002) to support its challenges.

III. ANALYSIS

A. *Level of Ordinary Skill in the Art*

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to resolve the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103. Because the challenged claims of the ’008 patent have an effective filing date before the effective date of the applicable AIA amendments, we apply the pre-AIA version of 35 U.S.C. § 103.

³ US 2005/0114879 A1, published May 26, 2005 (Ex. 1009).

⁴ US 2010/0120386 A1, published May 13, 2010 (Ex. 1010).

⁵ US 2010/0303181 A1, published Dec. 2, 2010 (Ex. 1016).

⁶ US 2008/0313691 A1, published Dec. 18, 2008 (Ex. 1017).

⁷ US 8,649,421 B2, issued Aug. 11, 2009 (Ex. 1011).

level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.*

Petitioner contends that a person having ordinary skill in the art “would have had a degree in electrical engineering or a similar discipline, and three-to-four years of experience working with television signal processing and communication systems,” and “[a]dditional education may substitute for professional experience and significant work experience may substitute for formal education.” Pet. 30 (citing Ex. 1002 ¶¶ 40–42). Patent Owner does not address the level of ordinary skill in the art in its Preliminary Response.

Based on our review of the record before us, we determine that Petitioner’s stated level of ordinary skill in the art is reasonable because it appears consistent with the evidence of record, including the asserted prior art. Accordingly, we adopt Petitioner’s definition for the purposes of this Decision.

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. See *Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. See *id.* at 1317–19.

Petitioner contends that all claim terms should be given their ordinary and customary meaning. Pet. 30. Petitioner notes that, in the *Charter* case, the district court issued constructions for the terms: “operable to,” “digitize a received signal spanning an entire television spectrum comprising a plurality of television channels,” “signal monitor,” “data processor,” and “channelizer.” *Id.* at 31 (citing Ex. 1020, 30–26, 61–64; Ex. 1002 ¶ 47). Petitioner, however, does not assert that any of these interpretations necessarily apply here. *Id.* at 30–32.

Patent Owner notes that, in the *Comcast* case, the parties agreed that “operable to” should be given its plain and ordinary meaning. Prelim. Resp. 11 (citing Ex. 2001, 2). Nevertheless, Patent Owner contends that there is no need to construe any claim term at this stage of the proceeding because none of its arguments turn on a specific claim construction. *Id.*

On the present record, we do not discern a need to construe explicitly any claim language because doing so would have no effect on our analyses below of Petitioner’s asserted grounds and will not assist in resolving the present controversy between the parties. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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)).

Petitioner contends that the challenged claims do not recite any means-plus-function limitations. Pet. 31 (citing Ex. 1002 ¶¶ 44–46). On a contingent basis, however, in case we were to decide to the contrary, Petitioner identifies structure in the ’008 patent corresponding to the claim 11 limitation “one or more circuits that are operable to.” *Id.* at 31–32 (citing Ex. 1001, 2:21–25, 2:30–33, 2:57–4:6, 4:16–7:2, Figs. 1B–1C;

Ex. 1002 ¶ 46). Patent Owner does not assert that the challenged claims contain any means-plus-function limitations. Prelim. Resp. 11.

The word “means” does not appear in the challenged claims. When this is the case, there is a presumption that the claims do not recite means-plus-function limitations under § 112 ¶ 6. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc in relevant part). Because neither party offers any argument or evidence to contravene this presumption, we do not construe any claim term as means-plus-function in rendering our decision.

C. Asserted Obviousness Based on Kamieniecki and Konstantinos

Petitioner challenges claims 1–18 as unpatentable under 35 U.S.C. § 103 based on the combination of Kamieniecki and Konstantinos. Pet. 25, 32–60. Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 16–38.

1. Kamieniecki (Ex. 1009)

Kamieniecki is titled “Monitoring Signal Quality on a Cable Network.” Ex. 1009, code (54). Kamieniecki discloses a set-top box that monitors signal quality in downstream and upstream paths and sends related information to a headend as it is collected or when polled by the headend. *Id.* at code (57).

Kamieniecki’s Figure 1 is reproduced below.

FIG. 1

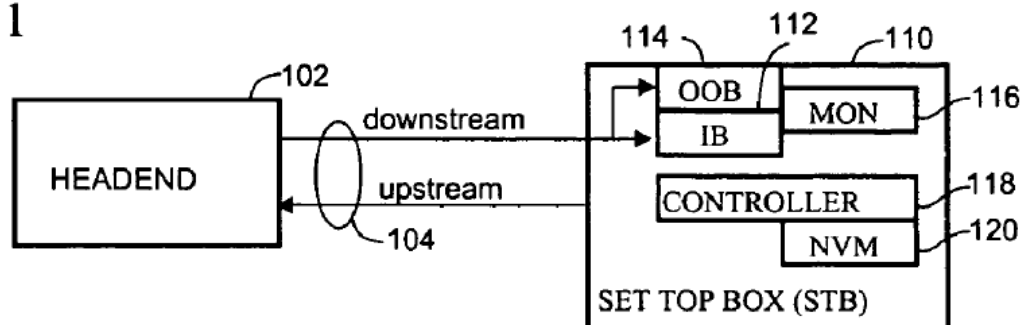


Figure 1 shows a cable system with headend 102 and a network of cables 104 connected to set-top box (“STB”) 110. *Id.* ¶ 13. Set-top box 110 has an in-band (“IB”) tuner 112 and out-of-band (“OOB”) tuner 114 so that it can receive in-band and out-of-band communications simultaneously. *Id.* Thus, “subscribers can be tuned to a channel receiving audio and video content while, at the same time, the STB 110 is receiving instructions in an OOB channel.” *Id.* Monitor 116 generates information related to signal quality on the channels (either IB or OOB, or both). *Id.* ¶ 14. Controller 118 controls the overall operation of set-top box 110. *Id.* Non-volatile memory 120 stores information relating to signal quality gathered by monitor 116. *Id.*

Monitor 116 may perform monitoring at periodic intervals, or idle times, and tunes to each channel in its channel map to collect statistics such as channel absence/presence, error count, signal level estimates, and errors/dropouts, which may be transmitted to headend 102. *Id.* ¶¶ 14, 17–21.

2. *Konstantinos (Ex. 1010)*

Konstantinos is titled “Multi-Channel Receiver Architecture and Reception Method.” Ex. 1010, code (54). As background, Konstantinos discloses that television receivers of the time had a single tuner for a single channel, but recognizes that the “evolving market for data and programming services will demand that receivers have the capability of multi-channel tuning.” *Id.* ¶ 1.

Konstantinos's Figure 2 is reproduced below.

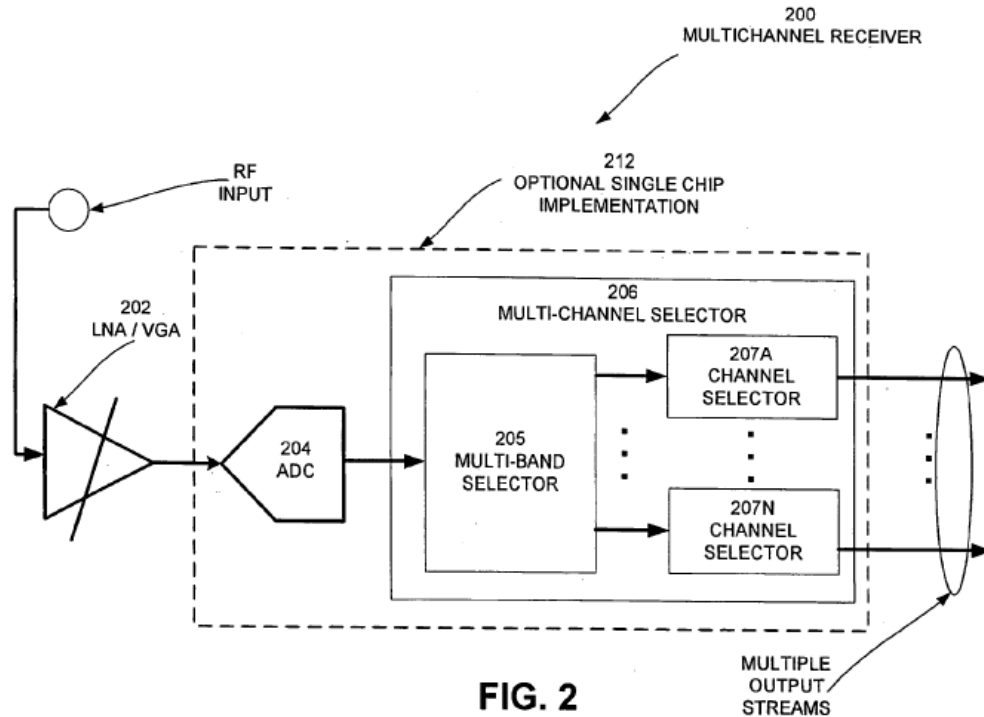


Figure 2 illustrates the logical components of Konstantinos's multi-channel receiver 200 including low-noise-amplifier and variable gain amplifier ("LNA/VGA") 202, analog-to-digital converter ("ADC") 204, and multi-channel selector 206 including multi-band selector 205 and channel selectors 207A–207N. *Id.* ¶¶ 42–43.

LNA/VGA 202 receives a composite broadband RF input signal (e.g., a cable TV signal with bundled channels) from an RF input. *Id.* ¶ 43. The output of the LNA/VGA is digitized by ADC 204 and output to multi-channel selector 206. *Id.*

Multi-channel selector 205 performs coarse channel selection by splitting the ADC output into sub-bands. *Id.* ¶ 45. Fine channel selection is performed by channel selectors 207 for delivery to the receiver output. *Id.* ¶ 46.

3. *Independent Claim 1*

Petitioner contends that the proposed combination of Kamieniecki and Konstantinos discloses the limitations of claim 1. Pet. 36–44. To support its arguments, Petitioner identifies certain passages in the cited references and explains the significance of each passage with respect to the corresponding claim limitation. *Id.* Petitioner also articulates reasons to combine the relied-upon aspects of Kamieniecki and Konstantinos. *Id.* at 32–35.

Patent Owner argues that one of ordinary skill in the art would not have combined Kamieniecki and Konstantinos in the manner proposed by Petitioner, and the proposed combination fails to teach or suggest several limitations of claim 1. Prelim. Resp. 16–37. Patent Owner also argues that objective indicia of the nonobviousness demonstrate that the challenged claims are not obvious. *Id.* at 50–54.

We have reviewed Petitioner’s contentions with respect to claim 1, and for the reasons discussed below, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail with respect to the contention that claim 1 would have been obvious based on the combination of Kamieniecki and Konstantinos. See Pet. 32–44. We address Patent Owner’s arguments below.

a) Objective Indicia of Nonobviousness

Patent Owner argues that objective indicia of nonobviousness, particularly the failure of others and industry praise for the claimed invention, show that the challenged claims are not obvious. Prelim. Resp. 50–54. Patent Owner’s arguments rely on its contention that “[t]he claimed invention in the ’008 Patent is built on a technology referred to as ‘Full-Spectrum Capture’ (or ‘FSC’), which the original assignee of the ’008 Patent (MaxLinear) developed by at least 2010.” *Id.* at 12 (citing Ex. 1001,

5:45–47; Ex. 2002; Ex. 2003). According to Patent Owner, “[a]fter developing Full-Spectrum Capture, MaxLinear engineers had an elegant, but simple, ‘Eureka!’ moment when they realized that Full-Spectrum Capture could be leveraged ‘to capture and report local (end-user) cable-plant spectra’ thereby ‘providing Cable and Multi-System Operators (MSO) new freedom in remotely monitoring, managing, and troubleshooting their networks.’” *Id.* at 13 (citing Ex. 2004, 2). Patent Owner asserts that, despite this development, which MaxLinear referred to as remote spectrum analysis, “the evidence shows that MaxLinear’s competitors and standard-setting organizations failed initially to understand that they could leverage digitizing the entire received spectrum to support remote monitoring but then, after MaxLinear’s invention, they uniformly adopted the inventive technology.” *Id.* at 14 (citing Ex. 2004, 1–3), 50.

For instance, Patent Owner argues that Broadcom Corporation (“Broadcom”), allegedly a “well-known industry participant,” had developed its own version of full-spectrum capture, referred to as full-band capture, but Broadcom did not understand that it could leverage full-band capture data to remotely monitor the downstream spectrum until after publication of the application that issued as the ’008 patent. *Id.* at 14–15, 50–51 (citing Ex. 1001, cover page; Ex. 2006, 3, 5; Ex. 2007, 17 n.1; Ex. 2009, 1, 6–7). Specifically, Patent Owner contends that “[t]he fact that Broadcom failed to initially realize the possibility of remote spectrum monitoring only to later adopt the technology itself underscores the non-obvious nature of the claimed invention.” *Id.* at 51 (citing *Apple Inc. v. Samsung Elec. Co., Ltd.*, 839 F.3d 1034, 1053 (Fed. Cir. 2016) (en banc); *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1285 (Fed. Cir. 2000)).

Next, Patent Owner points to documents from Cable Television Laboratories, Inc. (“CableLabs”), which Patent Owner identifies as a “research group that puts out the industry’s DOCSIS standards,” as well as “industry ‘best-practices’ documents for various technical topics, including proactive network maintenance.”⁸ *Id.* at 15. In particular, Patent Owner argues that CableLabs recommended a different method of proactive network maintenance in 2011 but, in 2016, CableLabs recommended using remote spectrum analysis as a best practice. *Id.* at 51 (citing Ex. 2007; Ex. 2008); *see also id.* at 15–16 (asserting that the 2016 version of CableLabs’s best-practices document “lauded the importance of using Full-Spectrum Capture to support remote spectrum monitoring and that by using remote spectrum monitoring, it had ‘resulted in significant operational advantages not to mention operational cost savings’ to network service providers”) (quoting Ex. 2007, 18). According to Patent Owner, “[w]hen the cable industry praised remote spectrum monitoring in this way, the cable industry was praising the claimed invention.” *Id.* at 51.

Patent Owner’s arguments are not persuasive. First, we are not persuaded on the current record that Patent Owner provides sufficient evidence to establish the failure of others. Patent Owner makes much of Broadcom and CableLabs allegedly failing to “realize the possibility of remote spectrum monitoring” prior to the ’008 patent. *See Prelim. Resp.* 50–52. The mere failure to “realize the possibility” of a certain technique or device, however, is not sufficient to show the failure of others. Rather, the failure of others as an indicium of nonobviousness generally

⁸ DOCSIS refers to “Data Over Cable System Interface Specification.” Ex. 1011, 1:42–43.

relates to situations where others failed while attempting to address a particular problem. *See In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Pat. Litig.*, 676 F.3d 1063, 1081 (Fed. Cir. 2012)

(“Evidence that others *tried* but failed to develop a claimed invention may carry significant weight in an obviousness inquiry. . . . [E]vidence of failed *attempts* by others could be determinative on the issue of obviousness.” (emphases added)); *see also Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1213 (Fed. Cir. 2023) (“Indeed, we have found that ‘[o]bjective considerations such as failure by others *to solve the problem* . . . may often be the most probative and cogent evidence of nonobviousness.” (emphasis added)). In this case, Patent Owner does not show sufficiently that any alleged failure experienced by Broadcom or CableLabs (or any other party) occurred attempting to address a pertinent problem.

Second, we are not persuaded on the current record that Patent Owner’s evidence of industry praise is sufficient. Although CableLab stated, in 2016, that full-band capture enabled “operators to take remote spectrum captures at the customer premises without having to carry an expensive spectrum analyzer and without requiring access into a subscriber’s home” and, thus, “resulted in significant operational advantages not to mention operational cost savings” (Ex. 2007, 18), we disagree with Patent Owner’s contention that these statements are praising the claimed invention (see Prelim. Resp. 51). At most, these statements praise remote spectrum monitoring in general; Patent Owner does not provide sufficient evidence that these statements are directed to the claimed invention.

Furthermore, we are not directed to any express statements by Broadcom praising the claimed invention. *See* Prelim. Resp. 14–15, 50–54.

To the extent Patent Owner is asserting that Broadcom praised the claimed invention by copying it, we note that

copying requires evidence of efforts to replicate a specific product, which may be demonstrated through internal company documents, direct evidence such as disassembling a patented prototype, photographing its features, and using the photograph as a blueprint to build a replica, or access to the patented product combined with substantial similarity to the patented product.

Wyers v. Master Lock Co., 616 F.3d 1231, 1246 (Fed. Cir. 2010). Patent Owner does not provide sufficient evidence to support that Broadcom endeavored to replicate the claimed invention.

Finally, to accord substantial weight to objective evidence of nonobviousness, the evidence must have a nexus to the claims. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). Patent Owner's arguments regarding nexus, however, are limited to a description of how the inventors arrived at the claimed invention. Prelim. Resp. 12–16, 52–54 (citing Ex. 2005, 18:25–19, 20:23–21:3, 21:16–23). These arguments fail to establish an adequate nexus between Broadcom's and CableLabs's alleged failure and praise and the claimed invention. Accordingly, on the present record, we are not persuaded that Patent Owner has demonstrated a nexus between the challenged claims and the alleged failure of others or industry praise.

For the above reasons, we do not accord substantial weight to Patent Owner's objective evidence.

b) The Combination of Kamieniecki and Konstantinos

Petitioner contends that one of ordinary skill in the art would have been motivated to replace the IB and OOB tuners in Kamieniecki's monitoring STB with Konstantinos's multi-channel receiver because

Konstantinos recognized the demand for multi-channel tuning, and its single-chip solution would meet that demand. Pet. 32–33 (citing Ex. 1002 ¶¶ 112–115; Ex. 1010 ¶¶ 1, 6, 8, 11, 16). Petitioner also contends that one of ordinary skill in the art would have understood that Konstantinos’s multi-channel receiver offers the improvement of not having to replicate the broadband RF input signal for input to separate tuners, which would cause signal degradation, and also offers savings in cost and complexity. *Id.* at 33–34 (citing Ex. 1002 ¶ 116; Ex. 1010 ¶¶ 6, 7, 43, 45, 49).

Petitioner further contends that one of ordinary skill in the art would have made the combination to enable simultaneous tuning of larger numbers of channels as required by newer cable technologies, and to provide for faster channel switching. *Id.* at 34 (citing Ex. 1002 ¶ 125; Ex. 1010 ¶ 11). According to Petitioner, combining Kamieniecki and Konstantinos “would be merely using known techniques (a single chip multi-channel digital receiver) to improve similar devices (Kamieniecki’s STB having multiple TV tuners) to yield a predictable result (converting a received RF signal into multiple digital outputs).” *Id.* (citing Ex. 1002 ¶ 127). Petitioner asserts that there would have been a reasonable expectation of success because an ordinarily skilled artisan “would have had the skill to implement Konstantinos’ teachings in the system of Kamieniecki because Kamieniecki’s IB and OOB tuners use the same inputs (an RF signal) and same outputs (digital signal of the desired channel) as those of Konstantinos’ multi-channel receiver chip.” *Id.* at 34–35 (citing Ex. 1002 ¶ 127). Petitioner adds that one of ordinary skill in the art would have been familiar with the design of RF receivers. *Id.* at 35 (citing Ex. 1002 ¶ 127).

In addition, Petitioner asserts that the problem addressed by Kamieniecki’s remote monitoring solution would still remain even when

using Konstantinos's receiver in the combined system. *Id.* (citing Ex. 1002 ¶ 117). Thus, according to Petitioner, one of ordinary skill in the art would have used Konstantinos's multi-channel receiver in Kamieniecki's STB "while still monitoring the channels and reporting the monitoring back to the headend, as doing so merely combines prior art elements according to known methods to yield predictable results." *Id.* (citing Ex. 1002 ¶¶ 116–117).

Patent Owner argues that one of ordinary skill in the art would not have been motivated to make Petitioner's proposed combination because the combination alters Kamieniecki's principle of operation in two ways. Prelim. Resp. 26–30. First, Patent Owner asserts that Kamieniecki has a principle of operation that requires gathering signal quality information only while STB 110 is idle. *Id.* at 17 (citing Ex. 1009 ¶¶ 8, 15, 17, Fig. 2), 27–28 (citing Ex. 1009 ¶¶ 8, 15, 17, 18, 22, Fig. 2); *see also id.* at 21 (arguing monitor 116 gathers signal quality information only when STB 110 is in an idle or off state). Thus, Patent Owner argues, Petitioner's proposal to add Konstantinos's multiple tuners so that signal quality information could be gathered at non-idle times would destroy Kamieniecki's principle of operation. *Id.* at 17–18 (citing *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App'x 755, 759 (Fed. Cir. 2015); *In re Ratti*, 270 F.2d 810 (CCPA 1959), 27). Patent Owner also argues that Petitioner's rationale for this modification "ignores the fact that Kamieniecki's STB 110 already has multiple tuners and the (at least theoretical) ability to process multiple channels simultaneously using its multiple tuners." *Id.* (citing Pet. 43; Ex. 1002 ¶ 145).

Second, Patent Owner argues that because the OOB tuner is the only mechanism in Kamieniecki that reports signal quality information to the

headend, removing the OOB tuner in accordance with the proposed combination eliminates Kamieniecki's ability to report information back to the source, which fundamentally changes Kamieniecki's operation. *Id.* at 29 (citing Ex. 1009 at code (57), ¶ 16); *see also id.* at 22 (arguing Kamieniecki's OOB tuner is necessary for the STB to send information upstream) (citing Ex. 1009 ¶¶ 2, 4, 17).

We disagree with both of these arguments for the following reasons.

First, Patent Owner has not shown adequately that Kamieniecki's disclosure of gathering signal quality information during idle times is a basic principle of operation or "would require a substantial reconstruction and redesign" of Kamieniecki and Konstantinos. *See Ratti*, 270 F.2d at 813. Kamieniecki states that "information *may, for example*, be collected when the STB is in an idle state." Ex. 1009 ¶ 8 (emphasis added); *see also id.*, code (57), ¶¶ 17–18 (disclosing that monitoring *may or can* occur while the STB is idle). Thus, Kamieniecki does not *require* collection of information only during idle times, but instead just mentions that it is a possibility. Patent Owner does not explain how this feature would constitute a "basic principle of operation" when Kamieniecki suggests it is optional. Furthermore, Patent Owner does not explain why Petitioner's proposed combination of Kamieniecki and Konstantinos would have required "substantial reconstruction and redesign." *See Ratti*, 270 F.2d at 813.

Furthermore, Petitioner contends that "[o]nce Kamieniecki is updated with Konstantinos' multi-channel receiver, [one of ordinary skill in the art] would have recognized that Kamieniecki's measurements can be made without waiting for an idle time, and can be done in parallel without disturbing users." Pet. 43 (citing Ex. 1002 ¶ 145). On the current record, we find this contention, which is supported by the testimony of Petitioner's

expert, persuasive. Specifically, Mr. Lett testifies that “[i]t is . . . desirable to perform [Kamieniecki’s] monitoring at any time, without having to wait for the STB 110 to be idle, because network errors can occur at any time of the day – not just during the STB 110’s idle periods,” and one of ordinary skill in the art “would have wanted to be able to make measurements at any desired time, even if the STB 110 happened to be in use.” Ex. 1002 ¶ 145. Mr. Lett further testifies that “Kamieniecki described waiting until the STB 110 was idle before performing its monitoring, but this was only needed because Kamieniecki’s STB 110 had only one IB tuner 112 and only one OOB tuner 114, and because Kamieniecki wished to avoid disturbing users. *Id.* (citing Ex. 1009 ¶¶ 14–17, Fig. 2). At this stage of the proceeding, we are persuaded by this uncontroverted testimony from Mr. Lett.

Second, we are not persuaded on the current record that Kamieniecki necessarily requires using the OOB tuner to send information to the headend. In the Background section, Kamieniecki discloses that “a basic set-top box” can include “[a] second tuner” “if use of the cable return path is desired, or where out-of-band (OOB) channels will be used for communications between the headend and the set-top box.” Ex. 1009 ¶ 4. Kamieniecki also discloses that “[t]wo-way polling can be implemented, for example, by polling the STB from the headend via the downstream path (*typically on the OOB channel*), and having the STB report back via the upstream path.” *Id.* ¶ 17 (emphasis added).

The first passage, at most, only suggests that the OOB channels could be used for communications between the headend and the set-top box in conventional systems. To the extent the latter passage suggests using the OOB channels to report information back the headend, Kamieniecki

discloses that this usage is only typical, not required. Furthermore, Kamieniecki also discloses that

the information about signal quality can be transmitted by the STB to the headend either as it is collected, or when the STB is polled by the headend. *The transmitter (e. g., modem) and other details of the STB, which are well known to those skilled in the art, are omitted for illustrative clarity.*

Id. ¶ 14 (emphasis added). This disclosure would have led one of ordinary skill in the art to conclude that Kamieniecki contemplates using a separate transmitter, such as a modem, instead of the OOB channel, to transmit signal quality information from the STB to the headend. Such a conclusion comports with Figure 1 of Kamieniecki, which shows that IB tuner 112 and OOB tuner 114 are connected to receive the *downstream* signal from the headend, but does not show the *upstream* signal as originating from OOB tuner 114). Figure 1 does not depict any internal specifics regarding how the upstream signal is generated. Balanced against this disclosure, we find insufficient evidence in the passages of Kamieniecki cited by Patent Owner that replacing Kamieniecki's tuners used to receive the downstream signal would have any effect on transmitters or other components of the set-top box generating the upstream signal. As such, we disagree with Patent Owner's assertion that the OOB tuner is the only means disclosed in Kamieniecki for reporting signal quality information to the headend.

In view of the above, we disagree that Petitioner's proposed combination of Kamieniecki and Konstantinos alters any principle of operation of Kamieniecki. Accordingly, we are persuaded at this stage of the proceeding that Petitioner's reasons to combine Kamieniecki and Konstantinos are sufficient.

c) The Digitized Signal Limitations

Claim 1 recites “an analog-to-digital converter operable to digitize a received signal spanning an entire television spectrum comprising a plurality of television channels” and “a signal monitor operable to: analyze said digitized signal to determine a characteristic of said digitized signal.” Ex. 1001, 7:16–22.

For these limitations, Petitioner first argues that Konstantinos’s multi-channel receiver 200 includes analog-to-digital converter 204 that digitizes a received signal spanning an entire television spectrum to produce a digitized signal. Pet. 36–37 (citing Ex. 1010 ¶¶ 42–46, 114–116, Figs. 2, 9; Ex. 1002 ¶ 122). According to Petitioner, “[t]he RF input received by Konstantinos’ multi-channel receiver 200 is supplied to a low-noise amplifier and variable gain amplifier (LNA/VGA) 202 before being digitized ‘in its entirety with an ADC 204,’” and, in the proposed combination, “the IB and OOB channels of Kamieniecki would be the RF Input that is received by the Konstantinos multi-channel receiver 200.” *Id.* at 37–38 (citing Ex. 1010 ¶ 43, Fig. 2).

Petitioner then argues that Kamieniecki’s monitor 116 corresponds to the claimed signal monitor. *Id.* at 38 (citing Ex. 1009 ¶¶ 4, 6, 7, 14–16, 24; Ex. 1002 ¶ 130). Petitioner asserts that monitor 116 analyzes the signal received from the IB and/or OOB tuners and determines signal quality information and, thus, determines a characteristic of the digitized signal. *Id.* at 38–39 (citing Ex. 1009 ¶¶ 7, 14, 22; Ex. 1002 ¶¶ 129–130).

Patent Owner argues that Kamieniecki’s monitor 116 is “analog-only” and thus does not process digital output streams from its receiver, as required by claim 1. Prelim. Resp. 30–34. According to Patent Owner,

Kamieniecki's STB operates in the analog domain only: Kamieniecki does not disclose any analog-to-digital converter (ADC) nor anything like it. It cannot produce the digitized signals required by claim 1. This means that the IB and OOB tuners of Kamieniecki do not output a "digital signal of the desired channel" to the monitor 116 as the Petition assumes, (Petition, 34), but rather the tuners would output an analog channel to monitor 116 for determining signal quality information. It follows that monitor 116 of Kamieniecki is operable to process only analog signals, not digital ones.

Id. at 31.

Patent Owner does not identify sufficient evidence, however, to support its argument. Particularly, Patent Owner does not direct us to any express disclosure in Kamieniecki indicating that either STB 110 or monitor 116 is "analog-only"; nor does Patent Owner provide adequate reasoning to support this contention. *See id.* at 30–34. Moreover, Patent Owner's argument is contradicted by Kamieniecki disclosing "digital cable systems" as background for its disclosure, which would have suggested to one of ordinary skill in the art that Kamieniecki's STB and monitor are not "analog-only." Ex. 1009 ¶ 2.

On this point, we disagree with Patent Owner's contention that one of ordinary skill in the art would have understood Kamieniecki's references to "digital transmissions" "to refer to the nature of the **contents**, not the signals carrying those contents." Prelim. Resp. 32 (citing Ex. 1009 ¶ 4). The cited paragraph of Kamieniecki describes a basic set-top box having a tuner that receives, for example, MPEG-2 transport streams, which can be based on the digital video broadcast ("DVB") standard.⁹ Ex. 1009 ¶ 4. Such a set-top

⁹ "MPEG" refers to the Moving Picture Experts Group standard. *E.g.*, Ex. 1011, 38–39.

box can receive analog or digital transmissions. *Id.* We also disagree that the current record supports Patent Owner’s contention that one of ordinary skill in the art would have understood “that digital information streams (like MPEG-2 or DVB) are modulated onto an analog carrier signal at a specific band of frequencies (or ‘channels’) to create a frequency division multiplexed (FDM) signal (i.e., the claimed ‘received signal’).” See Prelim. Resp. 32–33 (citing Ex. 1026, 58; Ex. 1001, 4:23–26). The portions of the ’008 patent and Exhibit 1026 (a reference book titled “Modern Cable Television Technology: Video, Voice, and Data Communications”) relied on by Patent Owner, cited without explanation, do not appear to support the contention that one of ordinary skill in the art would have understood that Kamieniecki’s digital information streams are modulated onto an analog carrier signal. See Ex. 1026, 58; Ex. 1001, 4:23–26. Rather, based on Kamieniecki’s disclosure of “digital cable systems” and “digital transmissions” (*id.* ¶¶ 2, 4), we are not persuaded that Kamieniecki is limited to “analog-only.”

On this record, Patent Owner’s argument does not undermine Petitioner’s showing for these digital signal limitations. Instead, at this stage of the proceeding, we determine that Petitioner has made a sufficient showing that the proposed combination of Kamieniecki and Konstantinos discloses the digital signal limitations of claim 1.

d) The Reporting Limitation

Claim 1 recites “a signal monitor operable to: . . . report said determined characteristic to a source of said received signal.” Ex. 1001, 7:20–24.

Petitioner contends that the proposed combination meets this limitation because Kamieniecki’s STB 110 reports signal quality

information (i.e., the claimed “determined characteristic”) back to headend 102. Pet. 38–39 (citing Ex. 1009 ¶¶ 8, 14, 16–17, 24; Ex. 1002 ¶ 132).

Patent Owner argues the proposed combination cannot satisfy this limitation, again asserting that Kamieniecki relies on the OOB tuner to report signal quality information to the headend, such that removing the OOB tuner in accordance with the proposed combination eliminates Kamieniecki’s means to send information back to the headend. Prelim. Resp. 34–35 (citing Ex. 1009 ¶¶ 2, 4, 17). As discussed above (*see supra* § III.C.3.b), on this record, Patent Owner provides insufficient evidence to support its argument that Kamieniecki sends information to the headend only via the OOB tuner. Instead, Kamieniecki appears to disclose using a separate transmitter, such as a modem, to transmit signal quality information from the STB to the headend. *See* Ex. 1009 ¶ 14.

Accordingly, Patent Owner’s argument is unavailing. At this stage of the proceeding, we determine that Petitioner has made a sufficient showing that the proposed combination of Kamieniecki and Konstantinos discloses this limitation of claim 1.

e) The Concurrently Output Limitation

Claim 1 recites a channelizer operable to “concurrently output said first portion of said digitized signal to said signal monitor and said second portion of said digitized signal to said data processor.” Ex. 1001, 7:30–32.

For this limitation, Petitioner first asserts that Konstantinos’s multi-channel selector 206 corresponds to the claimed channelizer. Pet. 41 (citing Ex. 1010 ¶¶ 43–46, 117, Fig. 2; Ex. 1002 ¶¶ 138–139). Petitioner further asserts that Konstantinos’s “channel selection uses a two-step process, in which a multi-band selector 205 first makes a ‘coarse’ selection of sub-bands (multi-bands in Fig. 3), and channel selectors 207A-N then

make a ‘fine’ selection of desired channels.” *Id.* at 41–42 (citing Ex. 1010 ¶¶ 45–46, 102–105, Fig. 3; Ex. 1002 ¶¶ 140–143). According to Petitioner, it would have been obvious to one of ordinary skill in the art “that any number of channel selectors 207A–N may be implemented to output as many channels simultaneously as is desired,” thus corresponding to the claimed concurrent output of first and second portions. *Id.* at 43 (citing Ex. 1002 ¶¶ 143–145).

Petitioner then asserts that one of ordinary skill in the art would have recognized that as a result of replacing Kamieniecki’s IB and OOB tuners with Konstantinos’ multi-channel receiver, the channel(s) to be monitored (“first portion of said digitized signal”) would be output to Kamieniecki’s monitor 116 in order for signal quality monitoring to take place and the signal quality information to be sent to the headend, as taught by Kamieniecki.

Id. at 44 (citing Ex. 1002 ¶¶ 145–146). Petitioner further asserts that “the channel to be watched as normal (claimed ‘second portion of said digitized signal’) would be output to Konstantinos’ ‘channel and source decoders’ for decoding into video and audio as discussed above while the monitored channel (claimed ‘first portion . . .’) is concurrently sent to monitor 116.” *Id.* (citing Pet. § VI.A.2.d; Ex. 1010 ¶ 106; Ex. 1002 ¶ 146).

Patent Owner argues that Kamieniecki does not disclose concurrently outputting signals to a signal monitor and a data processor because Kamieniecki gathers signal quality information only when STB 110 is idle. Prelim. Resp. 35–36 (citing Ex. 1009 ¶¶ 8, 15, 18, 22, Fig. 2); *see also id.* at 26 (arguing that Kamieniecki cannot concurrently output to both a signal monitor and a data processor because it can gather signal quality information with monitor 116 only while STB 110 is off or idle). For the reasons discussed above (*see supra* § III.C.3.b), however, Kamieniecki discloses that

signal quality information *can* be collected while STB 110 is idle, but does not *require* collection during idle times only. In addition, as explained above, we are persuaded on the current record by Petitioner’s contention that one of ordinary skill in the art would have recognized that Kamieniecki’s measurements can be made without waiting for an idle time. *See* Pet. 43 (citing Ex. 1002 ¶ 145).

Patent Owner also argues that “a different patent application” (i.e., U.S. Provisional Application No. 61/444,611 (Ex. 1012), to which Renken claims priority) “confirms that Kamieniecki’s ‘set-top box *can only measure* while it is in an *idle state*.’” Prelim. Resp. 36 (citing Ex. 1012, 4). The provisional application does state, under the heading “**Summary of differences from patent by Kamieniecki**,” that “[t]he set-top box can only measure while it is in an idle state.” Ex. 1012, 4.¹⁰ It is not clear from the provisional application, however, that the mere reference to the “patent by Kamieniecki” necessarily refers to the Kamieniecki reference relied on by Petitioner (i.e., Exhibit 1009). More importantly, even assuming that the provisional application is referring to the same Kamieniecki reference, an unrelated patent applicant’s characterization of Kamieniecki’s disclosure, particularly where the applicant is attempting to distinguish its own invention, carries light weight in our assessment of Kamieniecki. The provisional application’s characterization of Kamieniecki also does not address Petitioner’s contention that, in the proposed combination, one of ordinary skill in the art would have recognized that Kamieniecki’s measurements can be made without waiting for an idle time.

¹⁰ For consistency, we follow Patent Owner’s convention of citing to the page numbers added by Petitioner in Exhibit 1012 rather than the original pagination.

Accordingly, Patent Owner's arguments are unpersuasive. At this stage of the proceeding, we determine that Petitioner has made a sufficient showing that the proposed combination of Kamieniecki and Konstantinos discloses this limitation of claim 1.

f) The Remaining Aspects of Petitioner's Contentions

Patent Owner does not offer any arguments specifically addressing the remaining limitations of claim 1. *See generally* Prelim. Resp. We have reviewed Petitioner's contentions with respect to the remaining limitations of claim 1 and determine that the Petition provides a sufficient showing, at this stage of the proceeding, that the proposed combination of Kamieniecki and Konstantinos satisfies each limitation. *See* Pet. 36–44.

g) Conclusion

For the above reasons, we determine, based on the current record, that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claim 1 is unpatentable over Kamieniecki and Konstantinos.

4. Claims 2–18

Independent claim 3 is directed to a method and recites limitations similar to those in claim 1. Ex. 1001, 7:35–54. Independent claim 11 is directed to a system having one or more circuits that are operable to perform steps essentially the same as those in claim 3. *Id.* at 8:17–36. For these claims, Petitioner largely relies on its contentions for the various limitations of claim 1. Pet. 46–47, 56–58. Patent Owner does not offer any arguments specifically addressing independent claims 3 and 11, only arguing that “[t]he Petition’s analysis of claims 3 and 11 simply references its analysis of claim 1, therefore the Petition likewise fails to render obvious claims 3 and 11.” Prelim. Resp. 38.

Based on the current record, we determine that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claims 3 and 11 are unpatentable over the combination of Kamieniecki and Konstantinos.

Claim 2 depends from claim 1, claims 4–10 depend from claim 3, and claims 12–18 depend from claim 11. Ex. 1001, 7:33–34; 7:55–8:16, 8:37–59. Because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’008 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. See *SAS Inst., Inc. v. Iancu*, 138 S.Ct. 1348, 1359–60 (2018); see also *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting 35 U.S.C. § 314 to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); 37 C.F.R. § 42.108(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.”). Therefore, it is not necessary for us to assess every claim challenged by Petitioner.

Nevertheless, we note that Petitioner provides reasonable and detailed explanations indicating where the combination of Kamieniecki and Konstantinos teaches or suggests the limitations of claims 2, 4–10, 12–18. Pet. 44–45, 47–56, 58–60. Patent Owner offers no particular arguments regarding claims 2, 4–10, 12–18 for us to consider at this stage of the proceeding. See Prelim. Resp. 38. We have reviewed Petitioner’s contentions with respect to these claims and determine that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in its assertion that claims 2, 4–10, 12–18 are unpatentable over the combination of Kamieniecki and Konstantinos.

D. Alternate Obviousness Grounds Led by Kamieniecki and Konstantinos

Petitioner alternatively challenges claims 7, 8, 15, and 16 as unpatentable under 35 U.S.C. § 103 based on the combination of Kamieniecki, Konstantinos, and Yu, and claims 9 and 17 as unpatentable under 35 U.S.C. § 103 based on the combination of Kamieniecki, Konstantinos, and Cholas. Pet. 25, 32, 50–53, 59–60. Patent Owner offers no particular arguments regarding these alternate grounds for us to consider at this stage of the proceeding. *See generally* Prelim. Resp.

We have determined on the current record that Petitioner has shown there is a reasonable likelihood that it would prevail in its assertion that claims 7–9 and 15–17 are unpatentable over the combination of Kamieniecki and Konstantinos. In addition, we have reviewed Petitioner’s contentions with respect to these alternate grounds and determine, at this stage, that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in its assertion that claims 7, 8, 15, and 16 are unpatentable over the combination of Kamieniecki, Konstantinos, and Yu and claims 9 and 17 are unpatentable over the combination of Kamieniecki, Konstantinos, and Cholas.

E. Asserted Obviousness Based on Renken or Renken and Cholas

Petitioner challenges claims 1–6, 9–14, 17, and 18 as obvious over Renken, and alternatively challenges claims 9 and 17 as obvious over the combination of Renken and Cholas. Pet. 25, 60–77. Patent Owner provides arguments addressing these asserted grounds of unpatentability. Prelim. Resp. 38–50.

1. Renken (Ex. 1011)

Renken is titled “Cable Modem for Network Measurements.” Ex. 1011, code (54). Renken relates to measurement-capable cable modems

(“MCCMs”) for cable networks. *Id.* at code (57). Renken discloses that idle transmitters and receivers of MCCMs perform upstream and downstream measurements when directed by a central measurement controller (“CMC”), which may be located at the headend. *Id.*

Renken’s Figure 1 is reproduced below.

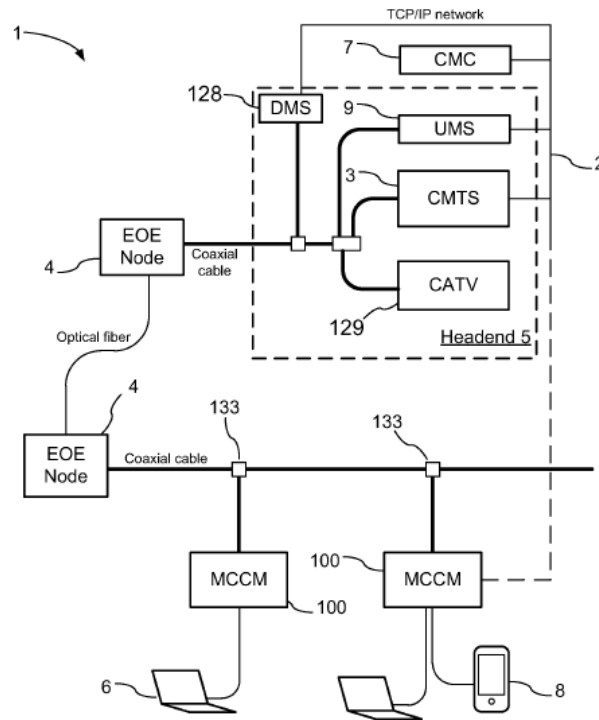


Fig. 1

Renken’s Figure 1, above, shows hybrid fiber coaxial network 1, comprising CMC 7 located in headend 5 and MCCMs 100 connected to the headend via coaxial cables and, optionally, optical fibers. Ex. 1011, 7:42–8:12. The MCCMs 100 are also connected to customer premises equipment 6 and local measurement controller 8. *Id.* The CMC instructs the MCCMs to perform signal measurements and collects, evaluates, and stores the measurement results received from the MCCMs. *Id.* at 8:35–50.

Renken’s MCCM 100 includes cable port 18 connected to upstream transmit circuit 10 and downstream receiver circuit 20. *Id.* at 9:41–43;

Fig. 2. Controller 200 is connected between data port 80, transmit circuit 10, and downstream receiver circuit 20. *Id.* at 9:61–62; Fig. 2. Controller 200 includes processor 50, RAM 80, and non-volatile memory 70. *Id.* at 10:11–13. Processor 50 runs programs responsible modem activities such as providing customer data to transmit circuit 10 and processing demodulated downstream data 27 received from downstream receiver circuit 20. *Id.* at 10:15–24.

Renken's Figure 3 is reproduced below.

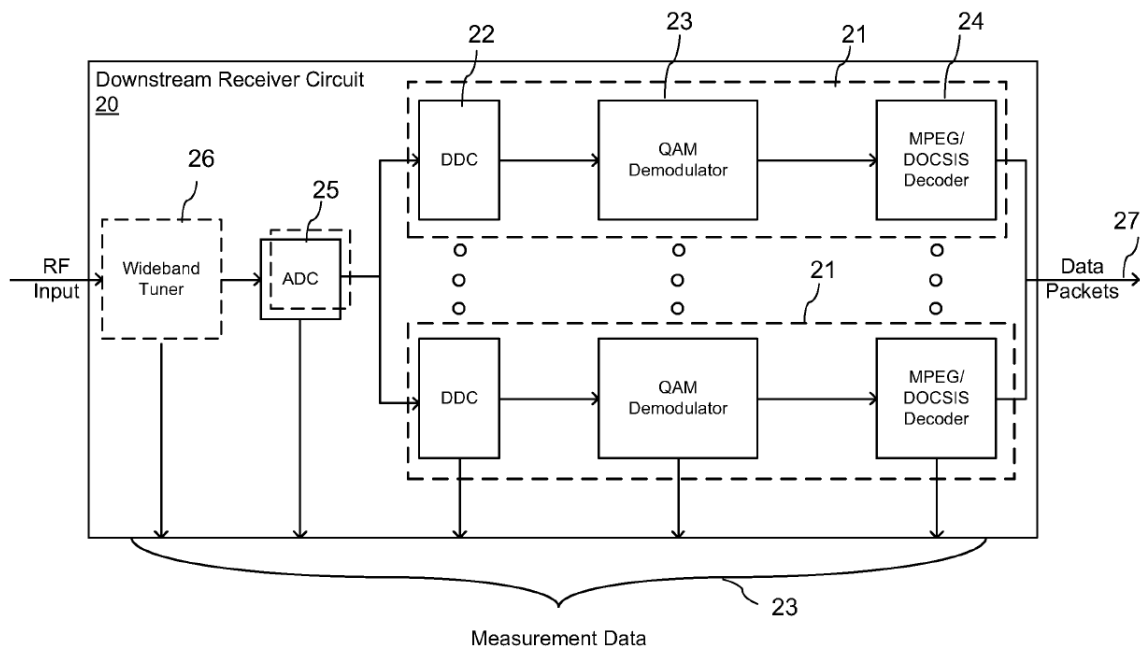


Fig. 3

Figure 3, above, is a block diagram depicting an embodiment of downstream receiver circuit 20. Ex. 1011, 10:56–57. In this embodiment, downstream receiver circuit 20 includes a plurality of constituent downstream channel receivers 21, each capable of demodulating a single downstream channel. *Id.* at 10:59–62. Each downstream channel receiver 21 includes digital down converter (“DDC”) 22, followed by a quadrature amplitude modulation (“QAM”) demodulator 23, which in turn is followed by a

DOCSIS/MPEG decoder 24. *Id.* at 6:27, 36, 11:19–22. “Optionally, a wideband tuner 26, which may be shared between multiple receivers, and one or more ADCs 25 may be connected between the input of the receivers 21 and the cable port.” *Id.* at 11:22–25. Tuner 26 receives analog RF data and converts it to corresponding signals centered at an intermediate frequency. *Id.* at 11:32–36. ADC 25 converts the analog output from received from tuner 26 into a digitized intermediate frequency signal. *Id.* at 11:39–40.

2. *Independent Claim 1*

Petitioner contends that Renken teaches or suggests the limitations of claim 1. Pet. 60–67. To support its arguments, Petitioner identifies certain passages in Renken and explains the significance of each passage with respect to the corresponding claim limitation. *Id.* Patent Owner argues that (1) Renken is not prior art to the ’008 patent (Prelim. Resp. 40–43); and (2) Renken does not teach or suggest a channelizer operable to “concurrently output said first portion of said digitized signal to said signal monitor and said second portion of said digitized signal to said data processor” (*id.* at 43–49).

Regarding the “concurrently output” limitation, Petitioner asserts that Renken’s DDC’s correspond to the claimed channelizer and collectively output (and, thus, “concurrently output”) selected channels. Pet. 66–67 (citing Ex. 1011 12:22–24, Fig. 3; Ex. 1022, 6–7, Fig. 2; Ex. 1002 ¶¶ 214–215). Petitioner also asserts that

MCCM 100 determines which DDC (and its associated QAM demodulator and MPEG/DOCSIS decoder) to use for channels/signals to be monitored (claimed “a first portion of said digitized signal”) and which to use for channels to decode for

viewing by a subscriber (claimed “a second portion of said digitized signal”) using the MPEG/DOCSIS Decoder.

Id. at 67 (citing Ex. 1011 4:33–44, 4:60–67, 10:5–48, 16:32–36, 20:36–45; Ex. 1012, 3, 9, 13; Ex. 1002 ¶ 216).

In response, Patent Owner argues that Renken cannot disclose this limitation because it lacks a “pathway for simultaneous[ly] routing some of the channels to the decoder while others are routed to the processor.”¹¹ Prelim. Resp. 46. To illustrate this contention, Patent Owner submits an annotated version of Figure 3 of Renken, which we reproduce below.

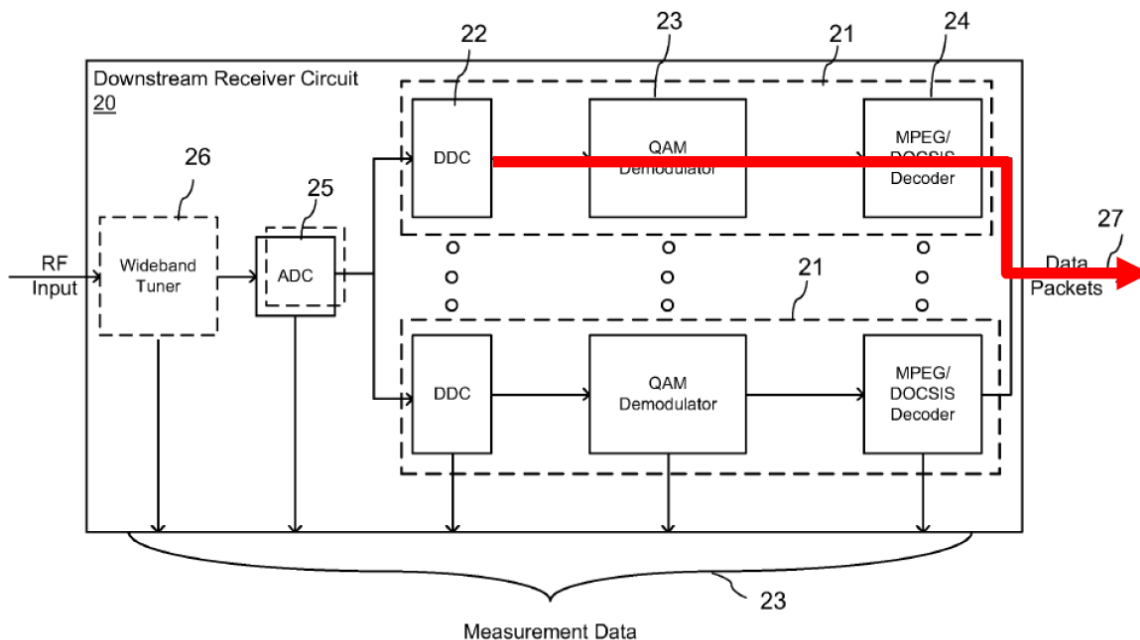
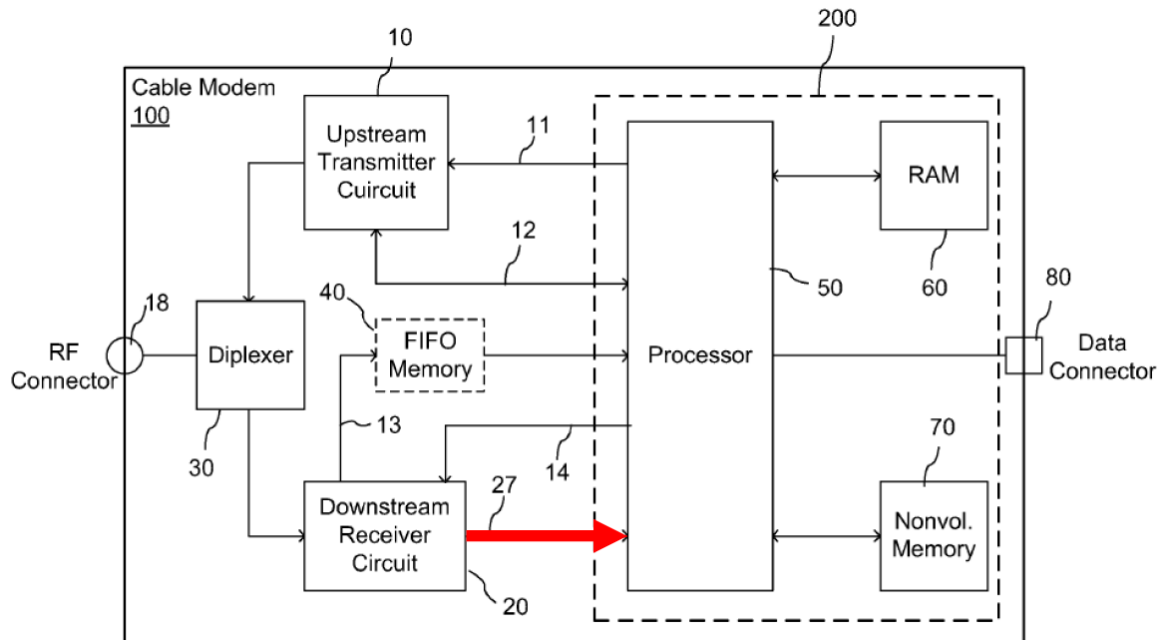


Fig. 3

Id. at 47. In this annotated version of Figure 3, Patent Owner added a red arrow extending from DDC 22, to QAM demodulator 23, to MPEG/DOCSIS decoder 24, and out of downstream receiver circuit 20 as data packets 27. *Id.*

¹¹ Petitioner asserts that Renken’s MCCM processor 50 corresponds to the claimed signal monitor and MPEG/DOCSIS decoder 24 corresponds to the claimed data processor. Pet. 63–66.

Patent Owner then argues that data packets 27 are sent to processor 50. *Id.* Patent Owner supports this contention with an annotated version of Renken's Figure 2, which we reproduce below.



Id. at 48. For this annotated version of Figure 2, Patent Owner added a red arrow extending from downstream receiver circuit 20 to processor 50. *Id.*

At this stage of the proceeding, we are persuaded by Patent Owner's argument.¹² For each of Renken's downstream channel receivers 21, the selected channel output by DDC 22 is sent to the corresponding decoder 24 and then out of downstream receiver circuit 20 as data packets 27. Ex. 1011, Fig. 3. The data packets output from each downstream channel receiver 21 are sent collectively to processor 50. *Id.* at Figs. 2, 3. In other words, all of the selected channels pass through the corresponding decoder and then to the processor. Accordingly, we are not persuaded that Renken discloses concurrently outputting a first portion of the channels to a signal monitor

¹² In light of this determination, we do not address Patent Owner's argument that Renken is not prior art at this time.

(i.e., processor 50) and a second portion of the channels to a data processor (i.e., decoder 24).

Thus, based on the current record, we question whether Petitioner establishes sufficiently that Renken, either taken alone or in combination with Cholas, discloses the “concurrently output” limitation. Nevertheless, we include these grounds in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; *PGS Geophysical*, 891 F.3d at 1360; 37 C.F.R. § 42.208(a).

IV. CONCLUSION

After considering the evidence and arguments presented by the parties, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one of the challenged claims. Thus, we institute an *inter partes* review of all challenged claims on all presented challenges.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–18 of the ’008 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

IPR2024-00441
Patent 8,792,008 B2

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