

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2024-00578
Patent 9,825,826 B2

Before PATRICK R. SCANLON, BARBARA A. PARVIS, and
JON M. JURGOVAN, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Cox Communications, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–4, 6, 8, and 9 (“the challenged claims”) of U.S. Patent No. 9,825,826 B2 (Ex. 1001, the “’826 patent”). Paper 1 (“Petition” or “Pet.”). Patent Owner, Entropic Communications, LLC, filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”).¹

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in a petition and the preliminary response “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.” Upon consideration of the Petition and Preliminary Response, and accompanying exhibits and evidence, we determine Petitioner has not established a reasonable likelihood that it would prevail with respect to at least one challenged claim in the *inter partes* review. Therefore, we deny institution of an *inter partes* review as to all of the challenged claims of the ’826 patent on all challenges in the Petition.

B. *Real Parties in Interest*

Petitioner identifies itself, Coxcom, LLC, and Cox Communications California, LLC as real parties-in-interest. Pet. 79 (Petitioner’s Mandatory Notices).

¹ With our authorization, Petitioner filed a Reply to Patent Owner’s Response limited to the issue of whether U.S. Provisional Application No. 61/444,611 (which the parties refer to as “the Renken provisional”) filed February 18, 2011 discloses a Central Monitoring Controller (CMC) located at the headend of a Community Antenna Television (CATV) network. Paper 8. Patent Owner filed a Sur-reply. Paper 12.

Patent Owner identifies itself as the real party-in-interest. Paper 4, 1 (Patent Owner’s Mandatory Notice).

C. Related Matters

Petitioner and Patent Owner (“the parties”) identify the following as matters related to this proceeding:

Entropic Communications, LLC v. Cox Communications et al.,
2-23-cv-01049 (C.D. Cal.) (“the *Cox* case”);

Entropic Communications, LLC v. Comcast Corporation et al.,
2-23-cv-01050 (C.D. Cal.);

Entropic Communications, Inc. v. Charter Communications, Inc., 2-22-cv-00125 (E.D. Tex.) (“the *Charter* case”); and

Cox Communications, Inc. et al. v. Entropic Communications, LLC, IPR2024-00442 (PTAB).

Pet. 79, Paper 4, 1.

Patent Owner identifies the following as patents related to this proceeding: U.S. Patent No. 8,792,008; U.S. Patent No. 9,203,653; U.S. Patent No. 10,063,436; and U.S. Patent No. 10,439,911. Paper 4, 1–2.

Patent Owner also identifies several other patents asserted by Patent Owner, and an *inter partes* review sought by Petitioner against another patent of Patent Owner. Paper 4, 2–3.

D. The ’826 Patent

The ’826 patent is titled “Method and Apparatus for Spectrum Monitoring.” Ex. 1001, code (54). The ’826 patent is directed to a receiver connected to a television and data service headend via a hybrid fiber coaxial (HFC) network. *Id.*, code (57). The receiver measures a characteristic of a received signal from the headend and controls transmission of network

management messages back to the headend based on the measured characteristic. *Id.* The network management messages may comprise network status updates indicating whether one or more communication parameters of received television or DOCSIS² channels are outside acceptable bounds. *Id.* at 3:60–67.

Figure 1A of the '826 patent is reproduced below.

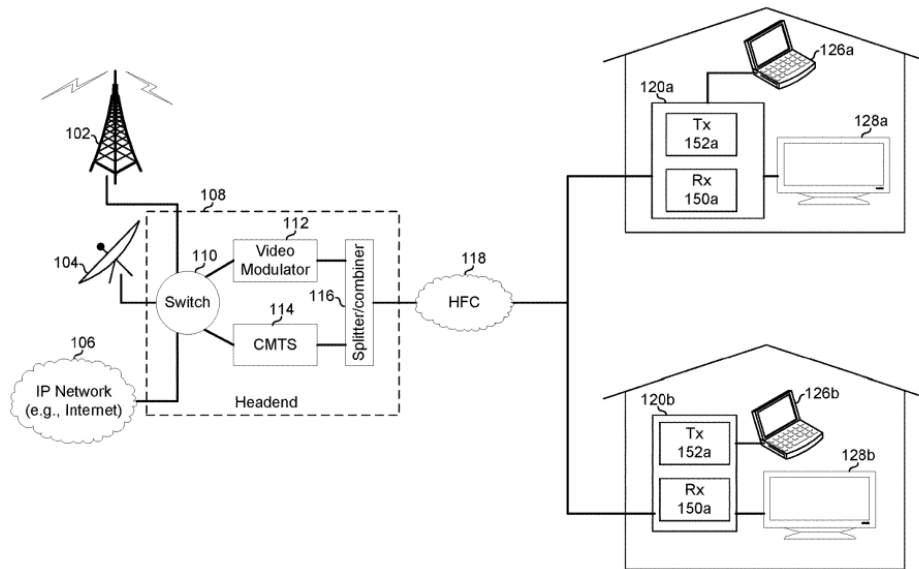


Figure 1A shows communication system headend 108 connected to receiving gateways 120a, 120b via HFC network 118. *Id.* at 2:45–3:15. Each gateway 120a, 120b may comprise a receive module 150 and a transmit module 152. *Id.* at 3:1–6.

Figure 1B of the '826 patent is reproduced below.

² Data-Over-Cable Service Interface Specifications. Ex. 2007, 26; Ex. 2008, 9 (by actual number of document, not Bates number).

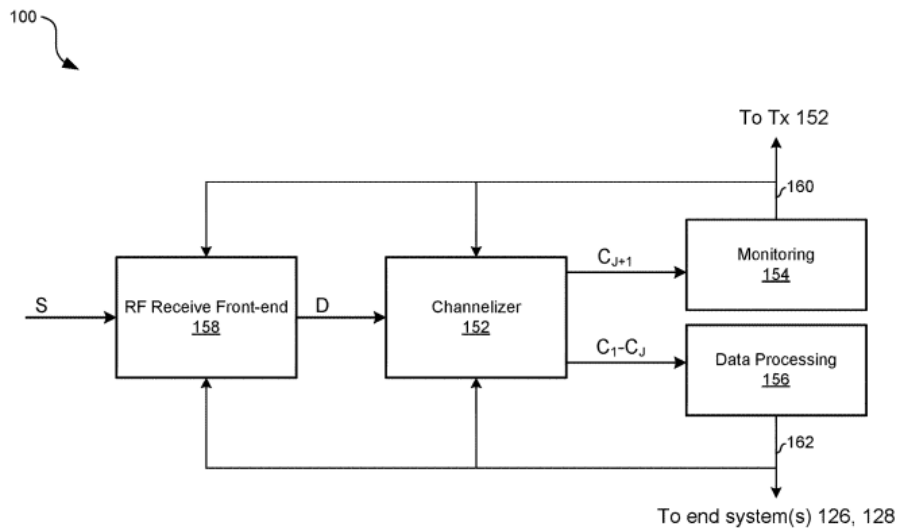


Figure 1B shows an example receiver operable to perform spectrum monitoring. *Id.* at 3:16–18. The receiver comprises circuit 100 including RF receive front-end module 158, channelizer module 102, monitoring module 154, and data processing module 156. *Id.* at 3:16–21. RF receive front-end module 158 receives an RF signal S and processes it to generate a digital signal D. *Id.* at 3:22–23. 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 3:32–36. Monitoring module 154 analyzes band C_{J+1} from channelizer 102 to measure its characteristics. *Id.* at 3:45–47. The measured characteristics may be, for example, signal power level, delay, or phase shift versus frequency, or signal to noise ratio. *Id.* at 3:48–57. 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 3:60–4:5.

E. Challenged Claims

Of the challenges claims, claim 1 is independent. Claim 1 is a method claim. Claims 2–4, 6, 8, and 9 depend, directly or indirectly, from claim 1.

Claim 1 is set forth below with Petitioner’s limitation identifiers indicated in brackets.

[1pre] A method comprising:

[1a] performing by one or more circuits of a receiver coupled to a television and data service provider headend via a hybrid fiber coaxial (HFC) network:

[1b] receiving, via said HFC network, a signal that carries a plurality of channels, wherein said channels comprise one or both of television channels and data channels;

[1c] digitizing said received signal to generate a digitized signal;

[1d] selecting a first portion of said digitized signal;

[1e] selecting a second portion of said digitized signal;

[1f] processing said selected second portion of said digitized signal to recover information carried in said plurality of channels;

[1g] analyzing said selected first portion of said digitized signal to measure a characteristic of said received signal; and

[1h] 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.

Ex. 1001, 7:33–55.

F. Evidence of Record

Petitioner relies upon the following prior art references³:

Name	Reference	Date	Exhibit No.
Renken	US 8,649,421 B2	Issued Feb. 11, 2014	Ex. 1005
Maycock	US 5,808,671	Issued Sep. 15, 1998	Ex. 1006
Kidambi	US 2010/0253557 A1	Published Oct. 7, 2010	Ex. 1007
Zhang	US 7,394,871 B2	Issued Jul. 1, 2008	Ex. 1008

Petitioner also supports its challenges with a declaration from Dr. James Martin. Ex. 1003. Patent Owner does not rely on any declarant to support its contentions.

G. The Asserted Challenges to Patentability

Petitioner asserts the following challenges to patentability:

Ground	Challenged Claims	35 U.S.C. §	Reference(s)
1	1–4, 6, 8, 9	103(a)	Renken ⁴

³ Petitioner alleges that all of the prior art references were filed, issued or published before the '826 patent's earliest alleged priority date of September 8, 2011. Pet. 2. Petitioner contends that all of these prior art references are prior art under 35 U.S.C. §§ 102(a), (b), and (e) (pre-Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA")). *Id.* Patent Owner does not refute these assertions at this time.

⁴ Petitioner contends that the prior art references asserted in all grounds are to be considered in view of the general knowledge of a person of ordinary skill in the art ("POSITA"). Pet. 2.

Ground	Challenged Claims	35 U.S.C. §	Reference(s)
2	1–4, 6, 8, 9	103(a)	Maycock, Kidambi
3	1–4, 6, 8, 9	103(a)	Maycock, Zhang

Pet. 2.

II. ANALYSIS AND DISCUSSION

In this section, we discuss Petitioner’s challenges to claims 1–4, 6, 8, and 9 of the ’826 patent and Patent Owner’s arguments disputing the challenges. For the reasons that follow, we determine that Petitioner has not presented a reasonable likelihood that at least one claim of the ’826 patent is unpatentable.

A. Legal Standards for Obviousness

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the claimed subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) where present, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner contends as follows:

The '826 Patent describes and claims aspects and functionality of cable and satellite television signal processing and communication systems. As of the alleged September 8, 2011 priority date, a person of ordinary skill in the art (“POSITA”) of the '826 Patent would have had at least: i) a Bachelor of Science in electrical engineering or an equivalent subject and three or more years of experience working in the field of cable and/or satellite signal processing and communication systems; ii) a Master’s in electrical engineering or an equivalent subject and one or more years of experience working in the field of cable and/or satellite television signal processing and communication systems; or iii) a Ph.D. in electrical engineering or an equivalent subject and at least some experience working in the field of cable and/or satellite television signal processing and/or communication systems. Additional education may substitute for professional experience, and significant work experience may substitute for formal education.

Pet. 9 (citing Ex. 1003 ¶¶ 30–31) (internal citation omitted).

Patent Owner does not dispute Petitioner’s proposed level of skill in the art, which is consistent with the prior art references asserted by Petitioner. *Okajima v. Bourdeau*, 261 F.3d 1350, 1354–55 (Fed. Cir. 2001) (the applied prior art may reflect an appropriate level of skill). Accordingly, we agree with and will use Petitioner’s proposed level for this Decision.

C. Claim Construction

We construe the challenged claims under the same standard used by a federal court in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). This standard is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) and its progeny, and includes “construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b). “Any prior claim

construction determination concerning a term of the claim in a civil action . . . that is timely made of record in the *inter partes* review proceeding will be considered.” *Id.*

The parties indicate that the district court in the *Charter* case (2:22-cv-00125) construed “network management messages” in the claims of the ’826 patent to mean “messages which report on the network based on the measured characteristics.” Pet. 10 (citing Ex. 1009, 29); Prelim. Resp. 10. Petitioner contends this construction is consistent with the ordinary and customary meaning of the claim language. Pet. 25. Patent Owner asserts that, in the *Cox* case (2:23-cv-01049), the parties agreed that “network management messages” should be given its plain and ordinary meaning. Prelim. Resp. 10 (citing Ex. 2001, 2). Patent Owner asserts that its arguments “do not turn on the construction of ‘network management messages’ so there is no need to construe that, or any other, term of the ’826 Patent claims at this stage of the proceeding.” *Id.*

As there is no controversy between the parties regarding any claim language that we would need to resolve in order to render our decision in this case, we apply the ordinary and customary meaning of the claim terms without specific construction. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only claim terms in controversy need to be construed, and only to the extent necessary to resolve the controversy).

D. Ground 1: Obviousness over Renken

Petitioner contends that claims 1–4, 6, 8, and 9 would have been obvious over Renken in view of the general knowledge of a POSITA.

Pet. 27–49. Patent Owner argues that Renken is not prior art to the '826 patent. Prelim. Resp. 15–21.

On the current record, after considering the parties' contentions and evidence, Petitioner has not demonstrated a reasonable likelihood of prevailing to show unpatentability of at least one of the claims challenged in ground 1 for reasons explained subsequently in § II.D.2–3.

1. Renken (Ex. 1005)

Renken is titled “Cable Modem for Network Measurements.” Ex. 1005, code (54). Renken relates to measurement-capable cable modems (MCCMs) for cable networks. *Id.*, 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.

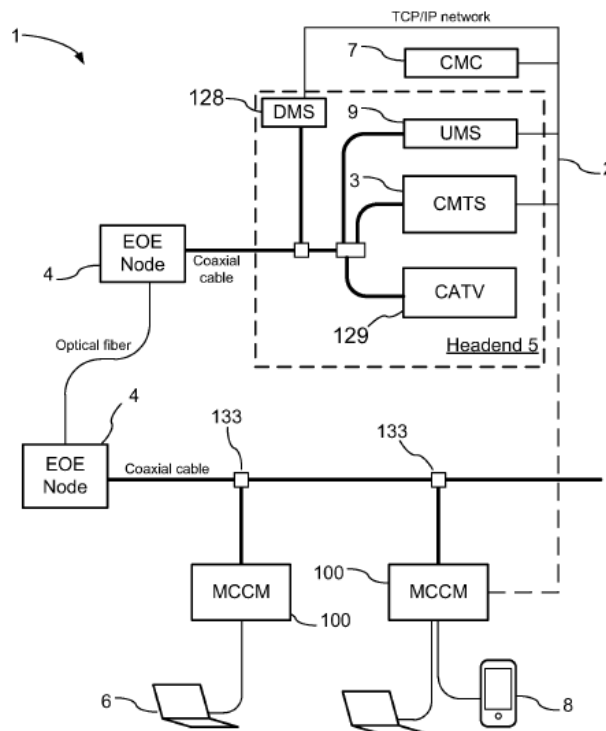


Fig. 1

Renken's Figure 1 above shows a CMC 7 located in the headend, and MCCMs 100 connected to the headend via HFC network 1. Ex. 1011, 7:42–8:12. The MCCMs 100 are also connected to customer premises equipment (CPE) 6 and local measurement controller (LMC) 8. *Id.* The CMC instructs the MCCMs to perform measurements and collects, evaluates, and stores the measurement results received from the MCCMs. *Id.* at 8:35–50.

2. *Claim 1*

We now address Petitioner's contentions that claim 1 would have been obvious over Renken in view of the general knowledge of a POSITA. Pet. 27–49. We focus our discussion on the contentions for limitation 1a and limitation 1h, which are dispositive.

a) *Limitations 1a and 1h*

Limitation 1a of claim 1 recites “performing by one or more circuits of a receiver coupled to a television and data service provider headend via a hybrid fiber coaxial (HFC) network.”

Petitioner contends that Renken's MCCM 100 corresponds to the claimed “receiver” because it possesses at least one receiver circuit. Pet. 30 (citing Ex. 1005, 6:51, Fig. 2).

Limitation 1h recites “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.”

Petitioner asserts that “Renken discloses that an MCCM reports its measurement results via the transmission of network (i.e., IP) messages pursuant to a request from the Central Management Controller (CMC) sent

to the MCCM by the CMTS.”⁵ Pet. 40 (citing Ex. 1005, 22:3–23:33, Fig. 17; Ex. 1010, 8–11; Ex. 1003 ¶ 75). Petitioner contends that Renken discloses that “the CMC signals the MCCM via internet protocol messaging to perform specific measurements with the unused receivers and/or transmitters.” *Id.* (citing Ex. 1010, 1; Ex. 1005, 8:45–50).⁶ Petitioner states that “Renken notes that the flowchart illustrated as Fig. 8 details triggering a new plan from the headend, checking resources, executing the measurement plan if resources (idle receivers or transmitters) are available, sending a measurement report to the headend, then waiting for a new plan/timer expiration/change in measurement capabilities.” *Id.* at 41 (citing Ex. 1005, 17:59–18:17). Petitioner asserts that a “POSITA would recognize that ‘after completing the measurement,’ ‘CM receiving a measurement plan,’ or measurement plan timer expires’ satisfy ‘controlling the transmission.’” *Id.* (citing Ex. 1003 ¶ 75). Petitioner argues “[i]n response to the request from the CMC the MCCM completes the requested measurements and then ‘the MCCM 100 may send the measurement result to CMC 7 over the TCP/IP network 2, for example utilizing a DOCSIS connection to the CMTS 3.’” *Id.* at 42 (citing Ex. 1005, 9:8–18). Additionally, Petitioner argues that “Renken discloses that . . . ‘the CMC 7 receives a message from the MCCM 100 that contains the measurement capability list 350, or a measurement report.’” *Id.* (citing Ex. 1005, 22:58–60, 23:11–15). Petitioner contends that a “POSITA would understand that measurements are sent via IP messages from the MCCM to the CMC.” *Id.* (citing Ex. 1003 ¶ 76).

⁵ Cable modem termination system. Ex. 1001, 2:53–54.

⁶ Petitioner actually cites to “8:45–45” but the language Petitioner quotes appears in lines 45–50 of column 8.

While Petitioner mentions portions of Renken that it considers relevant to limitation 1h, Petitioner does not explain how it reads each aspect of limitation 1h on Renken. For example, Petitioner does not identify what in Renken corresponds to the “network management messages,” what corresponds to the “measured characteristic of the received signal” that “is different than said network management messages,” and what discloses that the “measured characteristic” is the basis for “controlling transmission of the network management messages” from the “receiver” “back to the headend.”

b) Conclusion for Claim 1

Accordingly, Petitioner has not shown a reasonable likelihood to prevail in demonstrating that Renken in view of the general knowledge of a POSITA discloses limitations 1a and 1h of claim 1.⁷ Thus, we do not reach the parties’ contentions concerning other claim limitations or Renken’s priority date.

3. Claims 2–4, 6, 8, and 9

Claims 2–4, 6, 8, and 9 depend, directly or indirectly, from claim 1 and thus incorporate its limitations. For the reasons explained for claim 1, Petitioner has not shown a reasonable likelihood to prevail in demonstrating that a POSITA would have considered these claims obvious over Renken in view of the general knowledge of a POSITA.

E. Ground 2: Obviousness over Maycock and Kidambi

Petitioner contends that claims 1–4, 6, 8, and 9 would have been obvious over the combination of Maycock and Kidambi in view of the

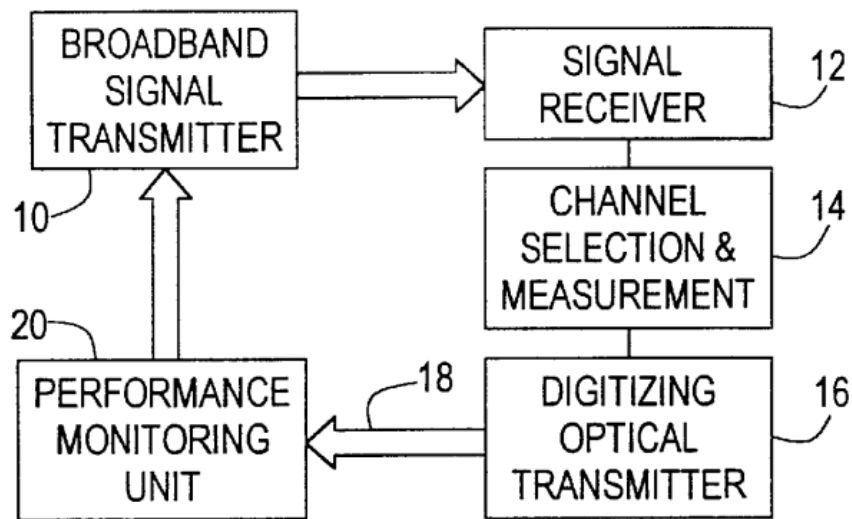
⁷ Our determination here is consistent with our decision in IPR2024-00442, Paper 8, 42–45 (§ II.H) concerning the asserted obviousness of claims 1–18 of the ’826 patent over Renken.

general knowledge of a POSITA. Pet. 49–70. Patent Owner argues that a POSITA would not have been motivated to combine Maycock and Kidambi, and that the “receiver” limitation 1a, “digitizing” limitation 1c, “selecting” limitation 1d, and “controlling” limitation 1h are not shown by Petitioner’s proposed combination. Prelim. Resp. 21–36. We address the parties’ contentions concerning limitations 1a and 1h below, and determine that Petitioner has not presented a reasonable likelihood that claims 1–4, 6, 8, and 9 would have been obvious over Petitioner’s proposed combination.

1. Maycock (Ex. 1006)

Maycock is titled “Apparatus and Method for Remote Monitoring of Video Signals.” Ex. 1006, code (54). Maycock generally addresses monitoring of an analog video signal that is transmitted on a channel such as a fiber optic cable at a location remote from the headend. *Id.*, code (57).

Maycock’s Figure 1 is reproduced below.



Maycock’s Figure 1 shows a video signal transmission monitoring system. *Id.* at 2:52–55. Video signal transmission headend 10 in the form of a broadband signal transmitter provides analog video signals which are

received at a remote site or location by signal receiver 12. *Id.* at 3:2–5. Signal receiver 12 may be an optical receiver or antenna. *Id.* at 3:5–10. Channel selector 14 selects a channel of the received signal to monitor and measures parameters of the selected signal. *Id.* at 3:10–12. Measurement data and the entire video signal are sent by the channel selector 14 to the digitizing optical transmitter 16 over fiber optic cable 18 to monitoring unit 20 “at a monitoring location, which may be at the headend or at some other location.” *Id.* at 3:12–16. Monitoring unit 20 recovers and displays the signal on a video monitor, analyzes audio and video content, and compares measurement data with reference data. *Id.* at 3:18–21.

2. *Kidambi (Ex. 1007)*

Kidambi is titled “Calibration of Offset, Gain and Phase Errors in M-Channel Time-Interleaved Analog-to-Digital Converters.” Ex. 1009, code (54). Kidambi’s Figure 32 is shown below.

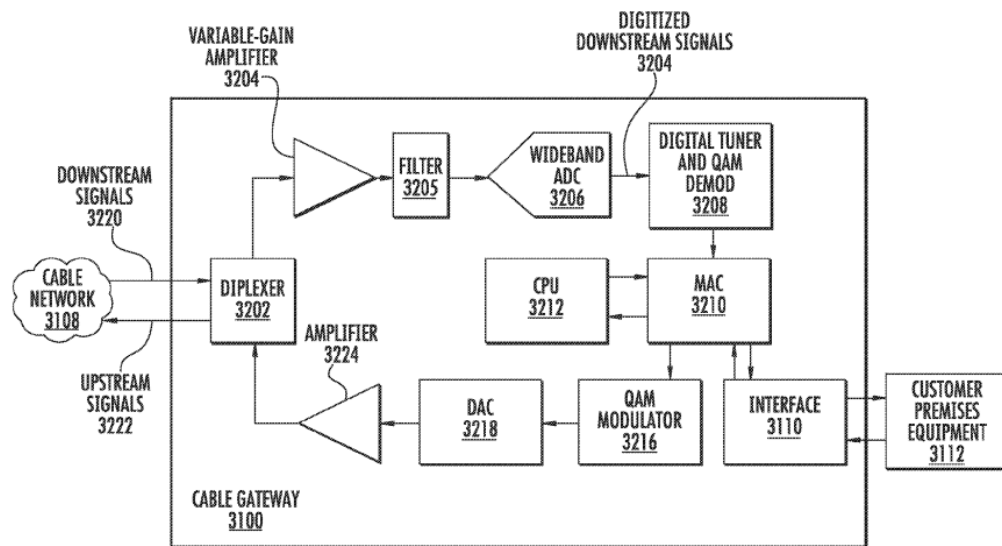


FIG. 32

Kidambi’s Figure 32 shows a cable gateway 3100 with a wideband analog-to-digital converter 3206 that digitizes the entire bandwidth of the cable

system. *Id.* ¶¶ 82–84. Analog-to-digital converter 3206 digitizes the received signal and passes the digitized signals to a digital tuner and quadrature-amplitude modulation (QAM) or other type of demodulator 3208 for demodulation to recover the underlying information. *Id.* ¶ 85.

3. *Claim 1*

We now address Petitioner’s contentions that claim 1 is obvious over the combination of Maycock and Kidambi in view of the general knowledge of a POSITA, and Patent Owner’s arguments disputing Petitioner’s contentions. We focus below on the parties’ contentions for limitations 1a and 1h, which are dispositive for this ground.

a) *Limitations 1a and 1h*

Claim 1’s limitation 1a recites “performing by one or more circuits of a receiver coupled to a television and data service provider headend via a hybrid fiber coaxial (HFC) network.”

Petitioner contends that Maycock’s Figure 1 (*see* § II.E.1) illustrates a “video signal transmission headend 10 . . . provides analog video signals which are received . . . by a signal receiver 12.” Pet. 50 (citing Ex. 1006, 3:2–5; Ex. 1003 ¶ 89). Petitioner thus maps the claimed “receiver” of limitation 1a to Maycock’s “signal receiver 12.” Alternatively, Petitioner maps the claimed “receiver” to Kidambi’s receiver. Pet. 51.

Claim 1’s limitation 1h recites “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.”

For limitation 1h, Petitioner contends that Maycock discloses “controlling the transmission of network management messages from the

digitizing optical transmitter 16 to performance monitoring unit 20 and transmitter 10, which are located at the headend, based on the measured characteristic of the received signal.” Pet. 64 (citing Ex. 1006, 3:2–17, Fig. 1, Fig. 1A; Ex. 1003 ¶ 115). The cited portion of Maycock discloses, with reference to Figure 1, that headend 10 transmits a broadband video signal to signal receiver 12, which provides an electrical equivalent at a usable frequency to channel selector 14. Ex. 1006, 3:2–10. Channel selector 14 selects from the received signal a channel to monitor and measures parameters of the selected signal. *Id.* at 3:10–12. A digitizing optical transmitter 16 transmits the corresponding measurement data and entire video signal over fiber optic cable 18 “to a monitoring unit 20 at a monitoring location, which may be at the headend or some other location.” *Id.* at 3:12–17.

Patent Owner argues that the “Petition disregards that the claims require that the *receiver* controls transmission of network management messages.” Prelim. Resp. 34 (citing Ex. 1001, limitations 1a, 1h). Patent Owner asserts that Petitioner maps limitation 1h “to components located at Maycock’s monitoring location,” but Maycock teaches that “the signal receiver and monitoring location are physically separate.” *Id.* (citing Ex. 1006, 3:2–16). Thus, Patent Owner argues, “the Petition has failed to demonstrate that ‘controlling the transmission of network messages’ step of the method is performed by the claimed receiver.” *Id.*

We agree with Patent Owner’s argument. Prelim. Resp. 34. Petitioner does not show that Maycock’s signal receiver 12 “control[s] transmission of network management messages back to the headend” as required by limitation 1h. Instead, Petitioner relies on the functions of

Maycock's digitizing optical transmitter 16, performance monitoring unit 20, and transmitter 10, as performing limitation 1h. Pet. 64–65. As Patent Owner argues, however, Maycock discloses that these devices are not components of the signal receiver 12, but are physically separate from it. Prelim. Resp. 34 (citing Ex. 1006, 3:2–16, Fig. 1). While Maycock mentions that the monitoring unit 20 “may be at the headend or at some other location” (Ex. 1006, 3:14–16), Petitioner does not show that optical transmitter 16, monitoring unit 20, or transmitter 10 would be located in signal receiver 12.

Petitioner does not rely on Kidambi for limitation 1h.

Accordingly, Petitioner does not show that Maycock discloses or suggests a “receiver” that “control[s] transmission of network management messages back to the headend” as required by limitation 1a and limitation 1h.

Petitioner further asserts that “Maycock describes that the monitoring unit 20 controls the transmission of the measured characteristic of said received signal to the monitoring unit 20.” *Id.* at 67 (citing Ex. 1006, 3:50–55, 7:22–35, Fig. 4). In other words, according to Petitioner, the monitoring unit 20 transmits a measured characteristic to itself. The portions of Maycock that Petitioner cites disclose that monitoring unit 20 receives a command that causes an internal switch to select a local signal from a respective channel selector or a signal from a respective receiver. Ex. 1006, 3:50–55, 7:22–35, Fig. 4. Petitioner does not explain sufficiently how these disclosures relate to the claim language. For example, Petitioner does not explain what in this disclosure of Maycock shows “network

management messages” and that their transmission from receiver back to the headend is controlled based on a “measured characteristic.”

Moreover, Patent Owner argues, correctly in our view, that “the Petition fails to identify any disclosure of Maycock where a measured characteristic, let alone a network management message, is transmitted **back to the headend**.” Prelim. Resp. 34–36 (emphasis in original). Patent Owner asserts that this language of limitation 1h precludes the monitoring unit 20 being located at the headend. *Id.* at 36. We agree. To transmit a message “**back to the headend**” by its plain language requires that the receiver sending the message is separate from (i.e., outside of) the headend. A message cannot be sent “back to the headend” if the receiver sending the message is inside of the headend. Thus, Petitioner’s assertion that Maycock transmits a measured characteristic of the received signal to itself at the headend is contrary to limitation 1a and limitation 1h. Pet. 66–67.

Furthermore, while Petitioner asserts that Maycock’s monitoring unit 20 controls the transmission of a “measured characteristic” to the headend, the language of limitation 1h requires controlling transmission of “network management messages” not a “measured characteristic.” Pet. 67. Thus, Petitioner has not shown a reasonable likelihood to prevail for this additional reason.

Petitioner also cites to Maycock’s Figure 4, which discloses input of operator parameters to determine sampling frequency and the rate at which the parameters of each channel are read by the monitoring unit of Figure 1A. Pet. 67 (citing Ex. 1006, 7:22–35). Again, Petitioner does not explain sufficiently how this Maycock disclosure relates to limitations 1a and 1h.

Patent Owner further argues that, if the monitoring location is not located at the headend, Maycock still fails to disclose limitation 1h because the monitoring location only sends channel select information to the headend, which Patent Owner asserts is not a “network management message.” Prelim. Resp. 35. Patent Owner asserts that there is no need in Maycock to transmit network management messages to the headend because a human operator at the monitoring location will take appropriate management action. *Id.* Reviewing the Petition, we see no mention of any mapping of the “network management message” to a channel select signal, as Patent Owner assumes, and we decline to speculate on what Petitioner may have meant to map this message to in Maycock but did not sufficiently articulate.

For the foregoing reasons, Petitioner has not shown a reasonable likelihood that limitations 1a and 1h are disclosed or suggested by the combination of Maycock and Kidambi.

b) Conclusion for Claim 1

As our determinations above are dispositive for claim 1, we do not reach the issues of motivation to combine Maycock and Kidambi with a reasonable expectation of success or the parties’ contentions concerning other claim limitations. Patent Owner’s objective evidence of nonobviousness weighs, if at all, toward nonobviousness.

Accordingly, on this record, Petitioner has not shown a reasonable likelihood to prevail in showing that a POSITA would have considered claim 1 obvious over the combination of Maycock and Kidambi.

4. *Claims 2–4, 6, 8, and 9*

Claims 2–4, 6, 8, and 9 depend, directly or indirectly, from claim 1 and thus incorporate its limitations. For the reasons explained for claim 1, Petitioner has not shown a reasonable likelihood to prevail in demonstrating that a POSITA would have considered these claims obvious over the combination of Maycock and Kidambi in view of the general knowledge of a POSITA.

F. Ground 3: Obviousness Over Maycock and Zhang

Petitioner contends that claims 1–4, 6, 8, and 9 would have been obvious over the combination of Maycock and Zhang in view of the general knowledge of a POSITA. Pet. 70–74. Patent Owner argues that Petitioner “effectively treats Kidambi and Zhang as interchangeable because the Petition cites to its analysis in Ground 2, often with no adjustments specific to Zhang.” Prelim. Resp. 37. We address Zhang and the parties’ contentions concerning limitations 1a and 1h below, and determine that Petitioner has not presented a reasonable likelihood that claims 1–4, 6, 8, and 9 would have been obvious over Petitioner’s proposed combination.

1. *Zhang (Ex. 1008)*

Zhang is titled “Digital Implementation of Multi-Channel Demodulators.” Ex. 1008, code (54). Zhang discloses a television system with a high-speed ADC⁸ for performing wideband conversion of an “entire signal band” from the analog domain to digital domain. *Id.* at 3:15–19, 3:60–63.

Zhang’s Figure 2 is shown below.

⁸ Analog-to-digital converter. Ex. 1008, 1:53.

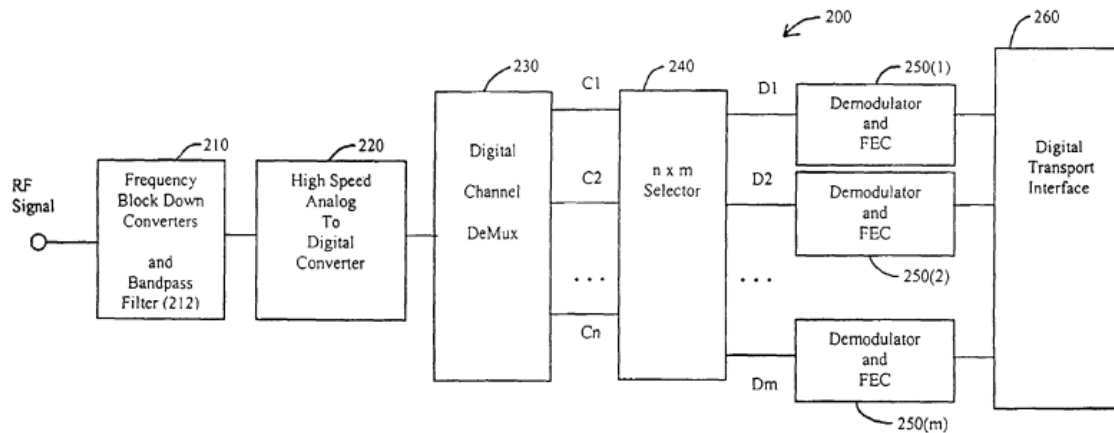


Fig. 2

As shown in Figure 2 above, Zhang discloses that frequency-block down converter 210 and bandpass filter 212 receive an RF signal with one or more multi-channel analog RF signals. *Id.* at 3:13–19. Down converter 210 shifts the multi-channel analog RF signal to a lower frequency band. *Id.* at 3:36–37. Bandpass filter 212 reduces aliasing from unwanted channels. *Id.* at 3:54–56. ADC 220 then converts the down-converted multi-channel analog signal to a multi-channel digital RF signal. *Id.* at 3:60–61. ADC 220 is a high-speed ADC so that the “entire signal band with n channels can be converted.” *Id.* at 3:62–63. ADC 220 outputs the digital RF signal for further processing by other components of the multi-channel demodulator. *Id.* at 3:64–4:36.

2. Claim 1

For limitation 1a, in addition to Maycock’s signal receiver, Petitioner relies on Zhang’s multi-channel demodulator which “receives one or more multi-channel analog RF signals, which can be sourced from a cable system.” Pet. 70–71 (citing Ex. 1008, 3:13–19). Petitioner contends that a POSITA “would know that a cable system utilizes a hybrid fiber coaxial network to provide RF signals to a receiver in a subscriber’s home.” *Id.* at

71 (citing Ex. 1003 ¶ 128). Petitioner asserts that “the combination of Maycock and Zhang disclose[s] this limitation.” *Id.* (citing Ex. 1003 ¶ 128).

For limitation 1h, Petitioner relies on the same contentions it presented for ground 2, asserting that Maycock discloses this limitation. Pet. 73. Petitioner does not rely on Zhang, but only on Maycock, to disclose limitation 1h. Patent Owner likewise relies on the same arguments it presented for ground 2 in support of its argument that limitations 1a and 1h are not disclosed in Petitioner’s proposed combination. Prelim. Resp. 37.

For the reasons already addressed in § II.E.3 discussing Maycock in relation to limitations 1a and 1h, Petitioner does not present a reasonable likelihood that claim 1 would have been obvious to a POSITA over the combination of Maycock and Zhang in view of the general knowledge of a POSITA.

3. *Claims 2–4, 6, 8, and 9*

Claims 2–4, 6, 8, and 9 depend, directly or indirectly, from claim 1 and thus incorporate its limitations. For the reasons explained for claim 1, Petitioner has not shown a reasonable likelihood to prevail in demonstrating that a POSITA would have considered these dependent claims obvious over the combination of Maycock and Zhang in view of the general knowledge of a POSITA.

III. CONCLUSION

In light of the foregoing, based on the record presented, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in its assertions that at least one of claims 1–4, 6, 8, and 9 of the ’826 patent would have been obvious under 35 U.S.C. § 103 based on the grounds set forth in the Petition.

IV. ORDER

For the foregoing reasons, it is

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–4, 6, 8, and 9 of the '826 patent is not instituted with respect to all grounds of unpatentability set forth in the Petition.

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