

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

TQ DELTA, LLC,
Patent Owner.

Case IPR2016-01006
Patent 7,835,430 B2

Before SALLY C. MEDLEY, KALYAN K. DESHPANDE, and
TREVOR M. JEFFERSON, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Cisco Systems, Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–6 of U.S. Patent No. 7,835,430 B2 (Ex. 1001, “the ’430 patent”). Paper 2 (“Pet.”). TQ Delta, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any 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.” 35 U.S.C. § 314(a); *see* 37 C.F.R. § 42.108. Upon consideration of the Petition and Preliminary Response, we conclude the information presented shows there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of claims 1–6 of the ’430 patent.

A. Related Proceedings

Petitioner indicates that the ’430 patent is the subject of several pending judicial matters. Pet. 1–2. In addition, a different Petitioner filed a petition for *inter partes* review of the ’430 patent, but we did not institute trial. *See Arris Group, Inc. v. TQ Delta, LLC*, Case IPR2016-00428 (PTAB June 22, 2016) (Paper 8).

B. The ’430 Patent (Ex. 1001)

The ’430 patent discloses systems and methods for reliably exchanging diagnostic and test information between transceivers over a digital subscriber line in the presence of disturbances. Ex. 1001, 1:44–47. The systems and methods include the use of a diagnostic link mode in the communication of diagnostic information from a remote terminal (RT) transceiver or modem to the central office (CO) transceiver or modem,

where either modem transmits a message to the other modem to enter diagnostic link mode. *Id.* at 2:44–48, 3:19–29. Each modem includes a transmitter section for transmitting data and a receiver section for receiving data, and is of the discrete multitone (DMT) type (the modem transmits data over a multiplicity of subchannels of limited bandwidth). *Id.* at 1:58–62. In diagnostic mode, the RT modem sends diagnostic and test information as bits that are modulated to the CO modem. *Id.* at 3:32–34. One described modulation technique includes Differential Phase Shift Keying (DPSK) on a subset or all the carriers, as specified in ITU standard G.994.1, higher order Quadrature Amplitude Modulation (QAM) (>1 bit per carrier). *Id.* at 3:38–41.

Figure 1 illustrates the additional modem components associated with the diagnostic link mode, and is reproduced below:

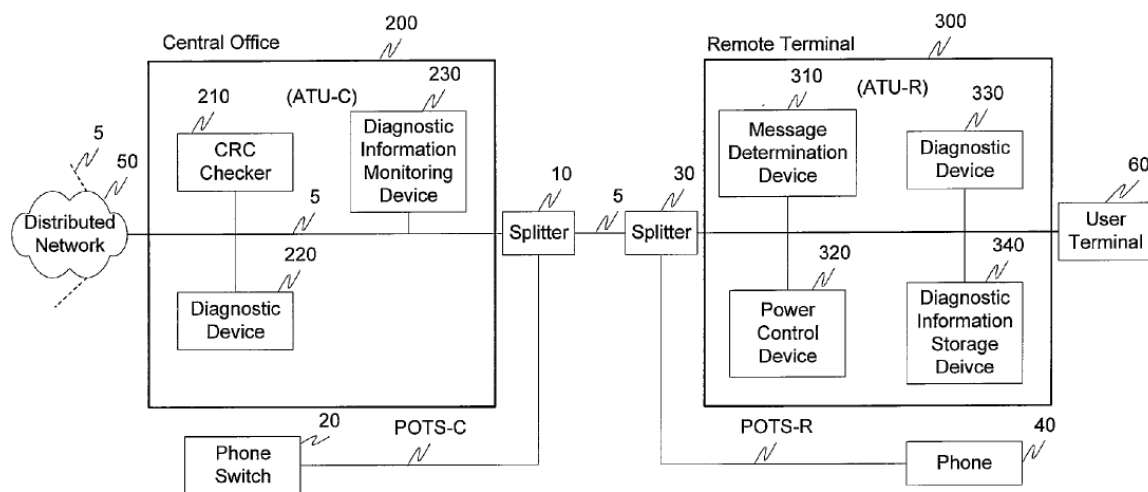


Fig. 1

Figure 1 illustrates a diagnostic mode system, where CO modem 200 and RT modem 300 are connected via link 5 to splitter 10 for a phone switch 20, and a splitter for a phone 40. *Id.* at 4:48–62. CO modem 200 includes CRC

checker 210, diagnostic device 220, and diagnostic information monitoring device 230. *Id.* RT modem includes message determination device 310, power control device 320, diagnostic device 330, and diagnostic information storage device 340. *Id.*

C. Illustrative Claim

Claims 1–6 are independent claims. Claims 1 and 2 are reproduced below.

1. A transceiver capable of transmitting test information over a communication channel using multicarrier modulation comprising:
 - a transmitter portion capable of transmitting a message, wherein the message comprises one or more data variables that represent the test information, wherein bits in the message are modulated onto DMT symbols using Quadrature Amplitude Modulation (QAM) with more than 1 bit per subchannel and wherein at least one data variable of the one or more data variables comprises an array representing frequency domain received idle channel noise information.

Ex. 1001, 8:33–44.

2. A transceiver capable of receiving test information over a communication channel using multicarrier modulation comprising:
 - a transmitter portion capable of receiving a message, wherein the message comprises one or more data variables that represent the test information, wherein bits in the message are modulated onto DMT symbols using Quadrature Amplitude Modulation (QAM) with more than 1 bit per subchannel and wherein at least one data variable of the one or more data variables comprises an array representing frequency domain received idle channel noise information.

Id. at 8:45–56.

D. The Alleged Ground of Unpatentability

The information presented in the Petition sets forth the proposed ground of unpatentability of claims 1–6 of the '430 patent under 35 U.S.C. § 103(a) as follows (Pet. 11):¹

References	Claims Challenged
Milbrandt ² , Chang ³ , Hwang ⁴ , and ANSI T1.413 ⁵	1–6

II. ANALYSIS

A. Claim Construction

The Board interprets claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. at 48,766. Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

“frequency domain received idle channel noise information”

¹ Petitioner supports its challenge with the Declaration of Dr. Sayfe Kiaei. Ex. 1009.

² U.S. Patent No. 6,636,603 B1; issued Oct. 21, 2003 (Ex. 1011) (“Milbrandt”).

³ U.S. Patent No. 6,891,803 B1; issued May 10, 2005 (Ex. 1012) (“Chang”).

⁴ U.S. Patent No. 6,590,893 B1; issued July 8, 2003 (Ex. 1013) (“Hwang”).

⁵ “Network and Customer Installation Interfaces – Asymmetric Digital Subscriber Line (ADSL) Metallic Interface,” American National Standards Institution (ANSI) T1.413-1995 Standard (Ex. 1014) (“ANSI T1.413”).

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