

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

TQ DELTA, LLC,
Patent Owner.

Case IPR2016-01008
Patent 8,238,412 B2

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

DESHPANDE, *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 1–8, 13, 14, 19, and 20 of U.S. Patent No. 8,238,412 B2 (Ex. 1001, “the ’412 patent”). Paper 2 (“Pet.”). TQ Delta, LLC (“Patent Owner”) filed a corrected Preliminary Response. Paper 7 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” After considering the Petition, the Preliminary Response, and associated evidence, we conclude that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of claims 1–8, 13, 14, 19, and 20 of the ’412 patent. Thus, we authorize institution of an *inter partes* review of claims 1–8, 13, 14, 19, and 20 of the ’412 patent.

A. Related Proceedings

Petitioner indicates that the ’412 patent is the subject of several proceedings. *See* Pet. 1. Petitioner also indicates that the ’412 patent is the subject of IPR2016-00430. *Id.* at 1–2. Petitioner additionally indicates that the ’412 patent is related to U.S. Patent No. 8,432,956 B2 and U.S. Patent No. 7,835,430 B2, which are the subject of IPR2016-00428 and IPR2016-00429. *Id.*

B. The ’412 Patent (Ex. 1001)

The ’412 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, 1:59–62. 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 model transmits a message to the other modem to enter diagnostic link mode. *Id.* at 2:60–64, 3:34–42. In diagnostic mode, the RT modem sends diagnostic and test information as bits to the CO modem. *Id.* at 3:48–53.

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

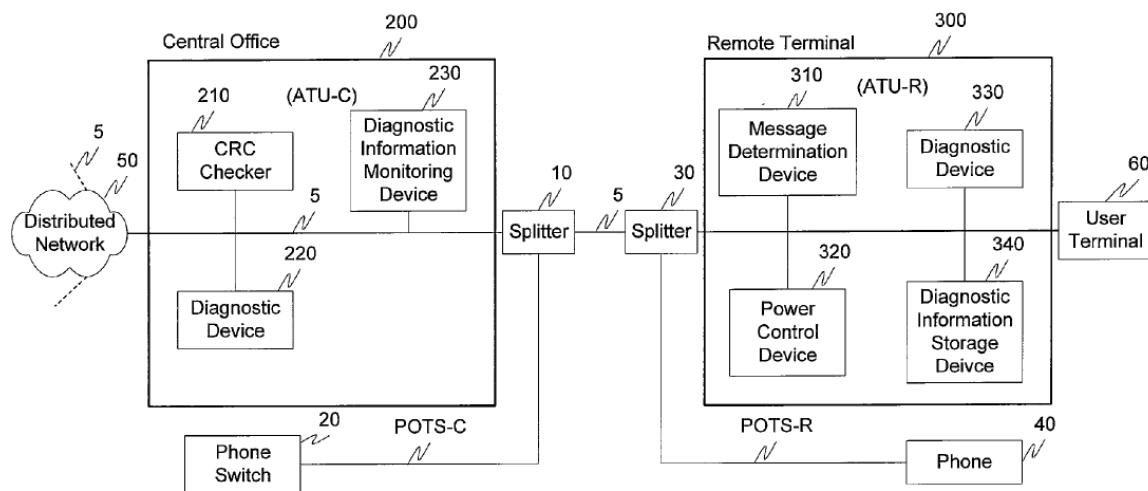


Fig. 1

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, and a splitter 30 for a phone 40. *Id.* at 4:58–5:5. CO modem 200 includes CRC checker 210, diagnostic device 220, and diagnostic information monitoring device 220. *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

Petitioner challenges claims 1–8, 13, 14, 19, and 20 of the '412 patent. Pet. 7–55. Claims 1, 3, 5, 7, 13, 14, 19, and 20 are independent claims. Claims 2, 4, 6, and 8 depend from independent claims 1, 3, 5, and 7. Claims 13 and 19 are illustrative of the claims at issue and are reproduced below:

13. A communications system for DSL service comprising a first DSL transceiver capable of transmitting test information over a communication channel using multicarrier modulation and a second DSL transceiver capable of receiving the test information over the communication channel using multicarrier modulation comprising:

a transmitter portion of the first transceiver 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 Signal to Noise ratio per subchannel during Showtime information; and

a receiver portion of the second transceiver capable of receiving the message, wherein the message comprises the one or more data variables that represent the test information, wherein the bits in the message were modulated onto the DMT symbols using Quadrature Amplitude Modulation (QAM) with more than 1 bit per subchannel and wherein the at least one data variable of the one or more data variables comprises the array representing Signal to Noise ratio per subchannel during Showtime information.

19. A communications system for DSL service comprising a first DSL transceiver capable of transmitting test information over a communication channel using multicarrier modulation and a second DSL transceiver capable of receiving the test information over the 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 power level per subchannel information; and

a receiver portion capable of receiving the message, wherein the message comprises the one or more data variables that represent the test information, wherein bits in the message were 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 power level per subchannel information.

Ex. 1001, 9:56–10:15, 11:63–12:21.

D. The Alleged Grounds of Unpatentability

The information presented in the Petition sets forth proposed grounds of unpatentability of claims 1–8, 13, 14, 19, and 20 of the '412 patent under 35 U.S.C. § 103(a) as follows (*see* Pet. 7–55):¹

References	Claims Challenged
Milbrandt, ² Hwang, ³ and ANSI T1.413 ⁴	1–8, 13, 14, 19, and 20

¹ Petitioner supports its challenge with the Declaration of Sayfe Kiaei, PhD. (Ex. 1009).

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

³ U.S. Patent No. 6,590,893 B1; issued July 8, 2003 (Ex. 1013) (“Hwang”).

⁴ *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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