

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC., DISH NETWORK, LLC,
COMCAST CABLE COMMUNICATIONS, LLC,
COX COMMUNICATIONS, INC.,
TIME WARNER CABLE ENTERPRISES LLC,
VERIZON SERVICES CORP., and ARRIS GROUP, INC.,
Petitioner,

v.

TQ DELTA, LLC,
Patent Owner.

Case IPR2016-01008¹
Patent 8,238,412 B2

Before SALLY C. MEDLEY, TREVOR M. JEFFERSON, and
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

CLEMENTS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

¹ DISH Network, LLC, which filed IPR2017-00253, and Comcast Cable Communications, LLC, Cox Communications, Inc., Time Warner Cable Enterprises LLC, Verizon Services Corp., and ARRIS Group, Inc., which filed IPR2017-00419, have been joined in this proceeding. Paper 14; Paper 15.

I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314, Cisco Systems, Inc. (“Petitioner”) challenges claims 1–8, 13, 14, 19, and 20 (“the challenged claims”) of U.S. Patent No. 8,238,412 B2 (Ex. 1001, “the ’412 patent”), owned by TQ Delta, LLC (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that the challenged claims are unpatentable. Patent Owner’s Motion to Exclude is *dismissed*.

A. Procedural History

Petitioner filed a Petition requesting an *inter partes* review of claims 1–8, 13, 14, 19, and 20 of the ’412 patent. Paper 2 (“Pet.”). Patent Owner filed a corrected Preliminary Response. Paper 7. On November 4, 2016, we instituted *inter partes* review of claims 1–8, 13, 14, 19, and 20 of the ’412 patent under 35 U.S.C. § 103(a)² as obvious over Milbrandt,³ Hwang,⁴ and ANSI T1.413.⁵ Paper 7 (“Inst. Dec.”), 24.

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’412 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

³ U.S. Patent No. 6,636,603 B1; issued Oct. 21, 2003 (Ex. 1011) (“Milbrandt”).

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”).

Thereafter, Patent Owner filed a Patent Owner Response (Paper 13, “PO Resp.”), to which Petitioner filed a Reply (Paper 17, “Reply”).

Pursuant to an Order (Paper 21), Patent Owner filed a listing of alleged statements and evidence in connection with Petitioner’s Reply that Patent Owner considered to be beyond the proper scope of a reply. Paper 22.

Petitioner filed a response to Patent Owner’s listing. Paper 26.

Patent Owner filed a Motion to Exclude (Paper 30), Petitioner filed an Opposition (Paper 35), and Patent Owner filed a Reply (Paper 38). Patent Owner also filed a Corrected Motion for Observation (Paper 33) to which Petitioner filed a Response (Paper 36).

We held a consolidated hearing on August 3, 2017, for this case and related Cases IPR2016-01006, IPR2016-01007, and IPR2016-01009, and a transcript of the hearing is included in the record. Paper 40 (“Tr.”).

B. Related Proceedings

The parties indicate that the ’412 patent is involved in the following district court cases: (1) *TQ Delta LLC v. Comcast Cable Communications LLC*, No. 1:15-cv-00611 (D. Del.); (2) *TQ Delta LLC v. CoxCom, LLC*, No. 1:15-cv-00612 (D. Del.); (3) *TQ Delta LLC v. DIRECTV*, No. 1:15-cv-00613 (D. Del.); (4) *TQ Delta LLC v. DISH Network Corp.*, No. 1:15-cv-00614 (D. Del.); (5) *TQ Delta LLC v. Time Warner Cable Inc.*, No. 1:15-cv-00615 (D. Del.); (6) *TQ Delta LLC v. Verizon Communications, Inc.*, No. 1:15-cv-00616 (D. Del.); (7) *ARRIS Group, Inc. v. TQ Delta LLC*, Case IPR2016-00430; (8) *Comcast Cable Communications, LLC v. TQ Delta, LLC*, Case IPR2017-00419; and (9) *DISH Networks, LLC v. TQ Delta, LLC*, Case IPR2017-00253. Paper 11, 1; Paper 6, 2–4. Patent Owner further identifies (1) *TQ Delta LLC v. 2Wire, Inc.*, No. 13-cv-1835 (D. Del.); (2) *TQ*

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Delta LLC v. Zhone Technologies, Inc., No. 13-cv-1836 (D. Del.); (3) *TQ Delta LLC v. ZyXEL Communications, Inc. and ZyXEL Communications Corp.*, No. 13-cv-02013 (D. Del.); (4) *TQ Delta LLC v. ADTRAN, Inc.*, No. 1:14-cv-00954 (D. Del.); and (5) *ADTRAN, Inc. v. TQ Delta LLC*, No. 1:15-cv-00121 (D. Del.). Paper 6, 3–4. Also, Petitioner filed, concurrently with this Petition, a second petition challenging claims of the '412 patent, which became Case IPR2016-01009.

Petitioner also 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 subjects of IPR2016-00428 and IPR2016-00429, respectively. Pet. 1. U.S. Patent No. 8,432,956 B2 also is the subject of IPR2016-01007 and IPR2017-00422. U.S. Patent No. 7,835,430 B2 also is the subject of IPR2016-01006, IPR2017-00251, and IPR2017-00420.

C. 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 modem 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:

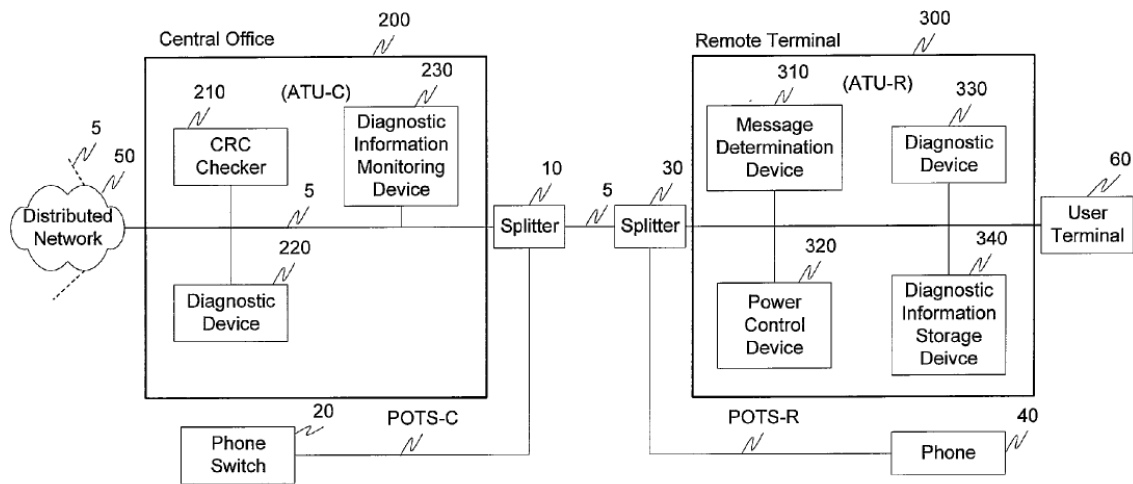


Fig. 1

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

D. Illustrative Claims

Of the instituted claims, claims 1, 3, 5, 7, 13, 14, 19, and 20 are independent. Claims 2, 4, 6, and 8 depend from independent claims 1, 3, 5, and 7, respectively. Independent claims 13 and 19 are illustrative of the challenged claims 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:

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