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Paper No. 8
Filed: November 4, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

TQ DELTA, LLC,
Patent Owner.

Case IPR2016-01007
Patent 8,432,956 B2

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

JEFFERSON, *Administrative Patent Judge*.

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

I. INTRODUCTION

Cisco Systems, Inc. ("Petitioner"), filed a Petition (Paper 2, "Pet.") to institute an *inter partes* review of claims 1–10 of U.S. Patent No. 8,432,956 B2 (Ex. 1001, "the '956 patent"). Patent Owner, TQ Delta, LLC ("Patent Owner"), filed a Preliminary Response to the Petition. Paper 7 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314(a), which provides in part 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 the information presented demonstrates a reasonable likelihood that Petitioner would prevail in showing unpatentability of claims 1–10 of the '956 patent.

A. Related Proceedings

The parties state that the '956 patent has been asserted in *TQ Delta LLC v. Comcast Cable Commc'ns LLC*, Case No. 1:15-cv-00611-RGA (D. Del); *TQ Delta LLC v. Coxcom LLC et al*., Case No. 1:15-cv-00612-RGA (D. Del.); *TQ Delta LLC v. DirecTV LLC*, Case No. 1:15-cv-00613-RGA (D. Del.); *TQ Delta LLC v. DISH Network Corp. et al*., Case No. 1:15-cv-00614-RGA (D. Del.); *TQ Delta LLC v. Time Warner Cable Inc., et al.*, Case No. 1:15-cv-00615-RGA (D. Del.); *TQ Delta LLC v. Verizon Servs. Corp*., Case No. 1:15-cv-00616-RGA (D. Del.); *TQ Delta LLC v. 2Wire, Inc*., Case No. 13-cv-1835-RGA (D. Del.); *TQ Delta LLC v. Zhone Techs., Inc*., Case No. 13-cv-1836-RGA (D. Del.); *TQ Delta LLC v. ZyXEL Commc'ns, Inc. and ZyXEL Commc'ns Corp*., Case No. 13-cv-02013-RGA (D. Del.); *TQ Delta LLC v. ADTRAN, Inc*., Case No. 1:14-cv-00954-RGA (D. Del.); *ADTRAN, Inc. v. TQ Delta LLC*, 15-cv-00121-RGA (D. Del.); *Arris Group, Inc. v. TQ Delta, LLC*, IPR2016-00428; *Arris Group, Inc. v. TQ Delta, LLC*, IPR2016-00429; and *Arris Group, Inc. v. TQ Delta, LLC*, IPR2016-00430. Paper 6, 3–4; Pet. 1–2. In addition, a different Petitioner filed a petition for *inter partes* review of the '956 patent, but we did not institute trial. *Id*.

B. The '956 Patent (Ex. 1001)

The '956 patent generally describes exchanging diagnostic and test information between transceivers over a digital subscriber line. Ex. 1001, 1:62–66. A transceiver or modem (remote terminal (RT)) is located at a customer premises downstream from a central office (CO), while a transceiver or modem is also located upstream from the customer premises at the CO. *Id*. at 2:1–5. Figure 1, below, is a functional block diagram of the communication system of the invention.

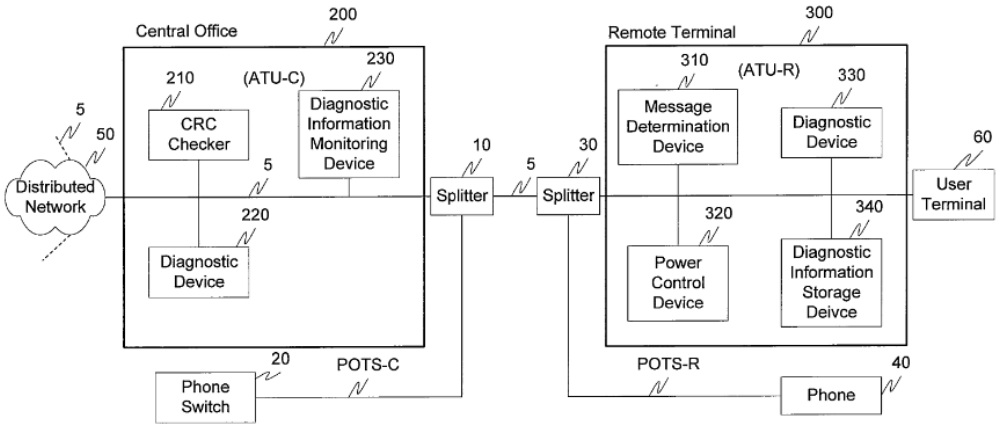

Fig. 1

Figure 1, reproduced above, shows modem components associated with the diagnostic link mode, that comprise central office (CO) modem 200 and remote terminal (RT) modem 300, both connected via link 5 to splitter 10 to phone switch 20 and splitter 30 to phone 40. *Id*. at 4:61–5:7. CO modem 200 includes CRC checker 210, diagnostic device 220, and diagnostic information monitoring device 230. *Id*. The RT modem 300 includes message determination device 310, power control device 320, diagnostic device 330 and diagnostic information storage device 340. *Id*.

"In the diagnostic link mode, the RT modem sends diagnostic and test information in the form of a collection of information bits to the CO modem." *Id*. at 3:50–52. In one method, system diagnostic and test information are exchanged using multiple carriers with a higher order quadrature amplitude modulation (QAM) with more than 1 bit per carrier. *Id*. at 3:56–59.

C. Illustrative Challenged Claims

Claims 1, 3, 5, 7, and 9 of the '956 patent are independent. Claims 1, 5, and 9 are illustrative and reproduced below (Ex. 1001, 8:47–58; 9:8–18, 10:3–28):

> 1. A transceiver capable of transmitting diagnostic 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 diagnostic 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.
>
> 5. In a transceiver capable of transmitting diagnostic information over a communication channel using multicarrier modulation, a method comprising:
>
> transmitting a message, wherein the message comprises one or more data variables that represent the diagnostic 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.

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

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