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Paper 13
Entered: September 7, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUALCOMM INC.,
Petitioner,

v.

BANDSPEED, INC.,
Patent Owner.

Case IPR2015-00316[1]
Patent 7,477,624 B2

Before BART A. GERSTENBLITH, DAVID C. McKONE, and PATRICK M. BOUCHER, *Administrative Patent Judges*.

BOUCHER, *Administrative Patent Judge.*

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

[1] Case IPR2015-01581 has been joined with this proceeding

I. INTRODUCTION

A. Background

Marvell Semiconductor, Inc., MediaTek Inc., and MediaTek USA, Inc., filed a Petition (Paper 1, "Pet.") to institute an *inter partes* review of claims 9–12 and 21–24 of U.S. Patent No. 7,477,624 B2 ("the '624 patent"). Bandspeed, Inc. ("Patent Owner") did not file a Preliminary Response. Prior to institution, we granted a motion to terminate the proceeding with respect to Marvell Semiconductor, Inc. Paper 11. Pursuant to 35 U.S.C. § 314, in our Institution Decision (Paper 12, "Dec."), we instituted this proceeding as to each of the challenged claims.

After institution, Qualcomm Inc. filed substantially the same petition in IPR2015-01581 (IPR2015-01581, Paper 1), together with a Motion for Joinder of IPR2015-01581 with the instant proceeding (IPR2015-01581, Paper 2). On September 17, 2015, we granted a motion to terminate this proceeding with respect to MediaTek Inc. and MediaTek USA, Inc., but not as to Patent Owner, leaving only Patent Owner as a party to the proceeding. Paper 20. On November 16, 2015, we granted Qualcomm Inc.'s Motion for Joinder, joining Qualcomm Inc. to the instant proceeding. Paper 21. Qualcomm Inc. ("Petitioner") is now the sole petitioner.

After institution of trial, Patent Owner filed a Response (Paper 26, "PO Resp."), and Petitioner filed a Reply to the Patent Owner's Response (Paper 27, "Reply"). An oral argument was held on May 26, 2016, and the transcript was entered into the record. Paper 38 ("Tr.").

Petitioner relies on the testimony of Zhi Ding, Ph.D. Ex. 1002 ("Ding Decl."); Ex. 1017 ("Supp. Ding Decl."). Patent Owner relies on the testimony of Jose Luis Melendez, Ph.D. Ex. 2001 ("Melendez Decl.").

We have jurisdiction under 35 U.S.C. § 6(c). This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of the challenged claims. Based on the record before us, Petitioner has demonstrated, by a preponderance of the evidence, that claims 9, 10, 12, 21, 22, and 24 are unpatentable, but has not demonstrated that claims 11 and 23 are unpatentable.

B. The '624 Patent

The '624 patent was filed on April 3, 2006, as a continuation of U.S. Patent Application No. 09/948,488, which was filed on September 6, 2001, and issued as U.S. Patent No. 7,027,418. Ex. 1001 [63]. The '624 patent also claims the benefit of the filing date of U.S. Provisional Application No. 60/264,594, filed on January 25, 2001. *Id.* at [60].

The '624 patent relates to managing the use of communications channels based on channel performance. Ex. 1001, col. 1, ll. 46–48. Figure 2 of the '624 patent is reproduced below.

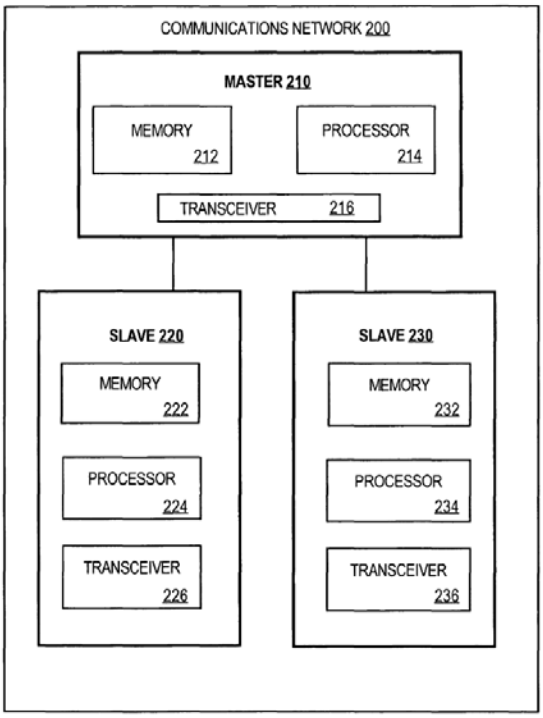

Figure 2 is a block diagram that depicts a communications network having "master" communications device 210 and multiple "slave" communications devices 220 and 230, each of which includes a memory, a processor, and a transceiver. *Id.* at col. 9, ll. 53–63. To manage the use of communications channels between the master and slaves via the respective transceivers, an initial set of channels is selected based on selection criteria at the start-up of the communications network. *Id.* at col. 6, ll. 19–21. Additional sets of channels then are selected periodically for adaptive avoidance of interference. *Id.* at col. 6, ll. 21–23.

For example, master 210 may select a set of communications channels from default communications channels for a specified communications protocol, generate identification data for the selected set of channels, and transmit the identification data to slave 220. *Id.* at col. 9, l. 64–col. 10, l. 3. If slave 230 is incapable of using the selected set of channels, master 210

communicates with slave 220 using the selected set of communications channels and communicates with slave 230 using the default communications channels for the specified communications protocol. *Id.* at col. 10, ll. 4–15.

The '624 patent describes various techniques for assessing performance of communications channels that include the use of special test packets (*id.* at col. 10, l. 33–col. 12, l. 35), a received signal strength indicator ("RSSI") (*id.* at col. 12, l. 37–col. 13, l. 2), and cyclic redundancy checks ("CRC") (*id.* at col. 13, l. 50–col. 14, l. 6). Communications channels are classified based on channel performance as determined by such assessments and according to classification criteria. *Id.* at col. 14, ll. 63–65. In a particular implementation, a "referendum" approach is used in which participant devices "vote" whether to use a particular channel. *Id.* at col. 16, ll. 65–66. The votes may be used according to various approaches, such as through the use of weighted votes, in determining final channel classifications. *Id.* at col. 17, ll. 25–34.

C. Illustrative Claim

Independent claim 9 (as amended by a Certificate of Correction dated March 17, 2009) is illustrative of the claims at issue:

> 9. A computer-readable medium carrying instructions for managing the use of communications channels for a communications system, wherein processing of the instructions by one or more processors causes:
>
> selecting, based upon performance of a plurality of communications channels at a first time, a first set of two or more communications channels from the plurality of communications channels;

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