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Paper 28
Date: January 26, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENOVO HOLDING COMPANY, INC., LENOVO (UNITED STATES) INC., and MOTOROLA MOBILITY LLC,
Petitioner,

v.

INTERDIGITAL TECHNOLOGY CORPORATION,
Patent Owner.

IPR2020-01413
Patent 8,199,726 B2

Before SALLY C. MEDLEY, MIRIAM L. QUINN, and KRISTI L. R. SAWERT, *Administrative Patent Judges*.

MEDLEY, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Lenovo Holding Company, Inc., Lenovo (United States) Inc., and Motorola Mobility LLC (collectively "Petitioner") filed a Petition for *inter partes* review of claims 1–10 and 14–18 of U.S. Patent No. 8,199,726 B2 (Ex. 1001, "the '726 patent"). Paper 1 ("Pet."). InterDigital Technology Corporation ("Patent Owner") filed a Preliminary Response. Paper 7. Upon consideration of the Petition and Preliminary Response, we instituted *inter partes* review, pursuant to 35 U.S.C. § 314, as to claims 1–10 and 14–18 based on the challenges set forth in the Petition. Paper 8 ("Decision to Institute" or "Dec.").

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 15, "PO Resp."), Petitioner filed a Reply to Patent Owner's Response (Paper 17, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 20, "Sur-reply"). On November 3, 2021, we held an oral hearing. A transcript of the hearing is of record. Paper 27 ("Tr.").

For the reasons that follow, we conclude that Petitioner has proven by a preponderance of the evidence that claims 1–10 and 14–18 of the '726 patent are unpatentable.

A. Related Matters

The parties indicate that the '726 patent is or has been the subject of, or relates to, the following proceeding: *InterDigital Technology Corporation et al. v. Lenovo Holding Company, Inc. et al.*, No. 1:19-cv-01590 (D. Del.). Pet. 3; Paper 6, 2.

B. The '726 Patent

The Specification of the '726 patent relates to wireless digital communication systems with communication stations using code-division

multiple access (CDMA) technology utilizing measurement techniques to determine downlink resource allocation. Ex. 1001, 1:12–16. The '726 patent describes measuring channel quality (CQ) and signaling the information from user equipment (UE) to a base station. *Id.* at 2:27–31. Specifically, the '726 patent describes "several embodiments to measure and signal the CQ per timeslot, or subchannel, from the UE to the base station." *Id.* at 2:29–31. Reproduced below is Figure 2.

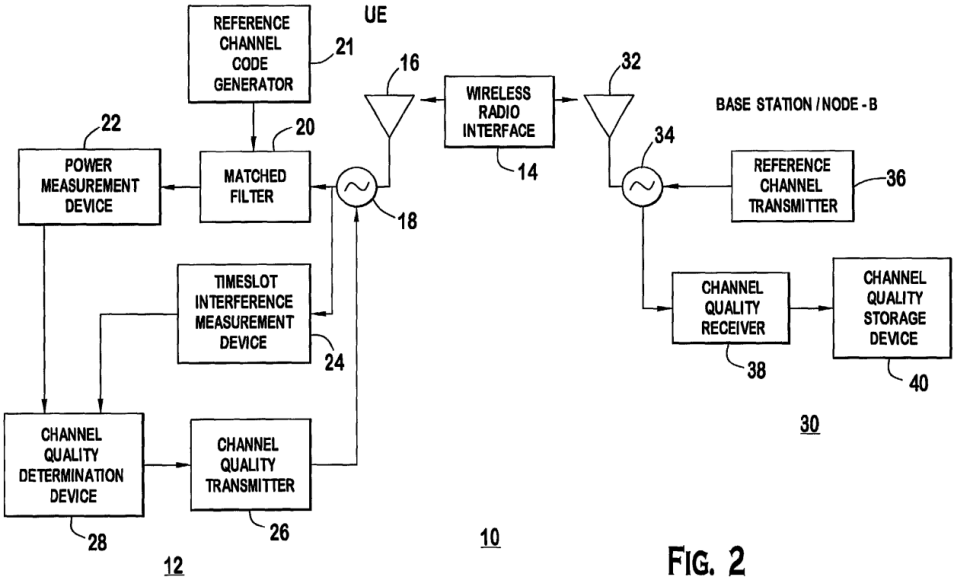

FIG. 2

Figure 2 shows a block diagram illustrating a UE and a base station for implementing channel quality measurements for downlink resource allocation.

Figure 2 shows a UE with antenna 16 coupled through isolator/switch 18 to matched filter 20, which receives a downlink signal from the base station through wireless interface 14. *Id.* at 3:21–23, 3:51–53. Power measurement device 22 analyzes the output of matched filter 20 to determine the power level of the downlink signal and outputs this power level to CQ determination device 28. *Id.* at 3:26–29. Interference measurement device 24 is connected to a second input of CQ determination device 28. *Id.* at 3:30–33. CQ determination device 28 analyzes the power level output from

power measurement device 22 and interference level from interference measurement device 24 and provides a CQ measurement to transmitter 26. *Id*. at 3:33–37.

C. Illustrative Claim

Petitioner challenges claims 1–10 and 14–18 of the '726 patent. Claims 1, 6, and 14 are independent claims. Claim 1 is reproduced below.

> 1. A user equipment (UE), comprising:
>
> a measurement device configured to take a plurality of measurements based on a downlink quality, wherein each of the plurality of measurements is taken on a respective downlink resource of a plurality of downlink resources;
>
> a channel quality determination device configured to:
>
> derive a first channel quality indication indicating a channel quality of the plurality of downlink resources; and
>
> derive a plurality of difference indications, each difference indication being between the first channel quality indication and a channel quality indication for one of the plurality of downlink resources; and
>
> a transmitting device configured to transmit at least one report including the first channel quality indication and the plurality of difference indications.

Ex. 1001, 6:58–7:7.

D. Instituted Grounds of Unpatentability

We instituted *inter partes* review based on the following grounds of unpatentability under 35 U.S.C. § 103(a)[1] as follows (Dec. 4–5, 31):

[1] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended several provisions of 35 U.S.C., including § 103. Because the '726 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA version of 35 U.S.C. § 103. Petitioner asserts, and Patent Owner does not dispute, that

Claim(s) Challenged	35 U.S.C §	Reference(s)/Basis
1–10, 14–18	103(a)	Tiedemann[2]
1–3, 6–8, 14–16	103(a)	Li[3]
1–10, 14–18	103(a)	Li, Tiedemann
6–10	103(a)	Tiedemann, Padovani[4]
1–10, 14–18	103(a)	Li, Gesbert[5]
1–10, 14–18	103(a)	Tiedemann, Gesbert

II. DISCUSSION

A. Principles of Law

To prevail in its challenges to Patent Owner's claims, Petitioner must demonstrate by a preponderance of the evidence[6] that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d) (2019). A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences

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each relied upon reference is prior art under the pre-AIA version. Pet. 16–17, 61, 64; *see generally* PO Resp.

[2] U.S. Pat. No. 6,307,849 B1, issued Oct. 23, 2001 (Ex. 1005, "Tiedemann").

[3] U.S. Pat. No. 6,947,748 B2, issued Sept. 20, 2005 (Ex. 1006, "Li").

[4] U.S. Pat. No. 6,574,211 B2, issued June 3, 2003 (Ex. 1014, "Padovani").

[5] U.S. Pat. No. 6,760,882 B1, issued July 6, 2004 (Ex. 1012, "Gesbert").

[6] The burden of showing something by a preponderance of the evidence requires the trier of fact to believe that the existence of a fact is more probable than its nonexistence before the trier of fact may find in favor of the party who carries the burden. *Concrete Pipe & Prods. of Cal., Inc. v. Constr. Laborers Pension Tr. for S. Cal.*, 508 U.S. 602, 622 (1993).

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