

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TCL INDUSTRIES HOLDINGS CO., LTD. and LG ELECTRONICS INC.,  
Petitioners,<sup>1</sup>

v.

PARKERVISION, INC.,  
Patent Owner.

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IPR2021-00990<sup>2</sup>  
Patent 7,110,444 B1

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Before MICHAEL R. ZECHER, BART A. GERSTENBLITH, and  
IFTIKHAR AHMED, *Administrative Patent Judges*.

GERSTENBLITH, *Administrative Patent Judge*.

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

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<sup>1</sup> The caption is updated to remove Petitioner Hisense Co., Ltd. (“Hisense”) because Hisense is no longer a party to this proceeding. *See* Paper 38 (Termination due to Settlement After Institution of Trial Only as to Hisense Co., Ltd.). The parties shall use this caption (without this footnote) going forward.

<sup>2</sup> LG Electronics Inc., who filed a petition in IPR2022-00245, is joined as petitioner in this proceeding.

## I. INTRODUCTION

### A. Background

TCL Industries Holdings Co., Ltd. (“TCL”) and Hisense filed a Petition (Paper 1, “Pet.”) requesting institution of *inter partes* review (“IPR”) of claims 2–4 (“the Challenged Claims”) of U.S. Patent No. 7,110,444 B1 (Ex. 1001, “the ’444 patent”). ParkerVision, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 8). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review as to all claims and grounds set forth in the Petition. Paper 9 (“Inst. Dec.”).

After institution, LG Electronics Inc. (“LG”) filed a petition in IPR2022-00245 (challenging the same claims of the ’444 patent on the same grounds), and a motion for joinder (seeking to join this proceeding as a petitioner). *LG Elecs. Inc. v. ParkerVision, Inc.*, IPR2022-00245 (PTAB Dec. 12, 2021), Papers 3 (petition), 4 (motion for joinder). We granted institution in IPR2022-00245 and granted LG’s motion for joinder. *Id.* at Paper 9 (PTAB Apr. 12, 2022); IPR2021-00990, Paper 16. Recently, Hisense and Patent Owner reached a settlement and this proceeding was terminated only as to Hisense. Paper 38. Accordingly, we refer to TCL and LG, collectively, as “Petitioners.”

Also following institution, Patent Owner filed a Patent Owner Response (Paper 12, “PO Resp.”), Petitioners filed a Reply to Patent Owner’s Response (Paper 20, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 26, “PO Sur-reply”). Additionally, we granted Petitioners’ Motion for Routine and/or Additional Discovery (Paper 13), ordering the production of Patent Owner’s Final Infringement Contentions. Paper 18 (Order), 8. And, we denied Patent Owner’s Motion to Strike portions of

Petitioners' Reply (Paper 21), finding that the "Reply does not raise new issues, is not accompanied by belatedly presented evidence, and does not otherwise exceed the proper scope of [a] reply brief as set forth in 37 C.F.R. § 42.23(b)." Paper 25 (Order), 13. An oral hearing was held on September 8, 2022, and the transcript is of record. Paper 34 ("Tr.").<sup>3</sup>

We have jurisdiction pursuant to 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the Challenged Claims. Petitioners bear the burden of proving unpatentability of the Challenged Claims. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioners must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2020). Having reviewed the arguments and the supporting evidence, we determine that Petitioners have shown, by a preponderance of the evidence, that claims 2–4 of the '444 patent are unpatentable.

*B. Related Proceedings*

The parties identify the following as related matters: *ParkerVision, Inc. v. Intel Corporation*, 6:20-cv-00108 (W.D. Tex.); *ParkerVision, Inc. v. TCL Industries Holdings Co., Ltd. et al.*, No. 6:20-cv-00945 (W.D. Tex.); *ParkerVision, Inc. v. Hisense Co., Ltd. et al.*, No. 6:20-cv-00870 (W.D. Tex.); *ParkerVision, Inc. v. ZyXEL Communications Corp.*, No. 6:20-cv-

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<sup>3</sup> Because of a substantial overlap in issues presented, the transcript includes oral argument from related case IPR2021-00985, although this proceeding and IPR2021-00985 are not consolidated or joined.

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01010 (W.D. Tex.)<sup>4</sup>; *ParkerVision, Inc. v. LG Electronics Inc.*, No. 6:21-cv-00520 (W.D. Tex.); and *Intel Corporation v. ParkerVision, Inc.*, IPR2020-01265 (“the Intel IPR”). Pet. 4–5; Paper 5 (Petitioners’ Updated Mandatory Notice), 1; Paper 7 (Patent Owner’s Mandatory Notices), 1. Petitioners also identify *ParkerVision, Inc. v. Buffalo Inc.*, No. 6:20-cv-01009 (W.D. Tex.), as a related matter involving the ’444 patent. Pet. 5. Additionally, Petitioners challenge several claims of U.S. Patent No. 7,292,835 B2 (“the ’835 patent”), owned by Patent Owner, in IPR2021-00985. Pet. 5; Paper 7, 1.<sup>5</sup>

*C. Real Parties in Interest*

Petitioners identify TCL; TCL Electronics Holdings Ltd.; Shenzhen TCL New Technology Co., Ltd.; TCL King Electrical Appliances (Huizhou) Co., Ltd.; TCL Moka Int’l Ltd.; TCL Moka Manufacturing S.A. DE C.V.; TCL Technology Group Corp.; TTE Technology, Inc.; LG; and LG Electronics U.S.A., Inc. as real parties in interest. Pet. 4; *LG*, IPR2022-00245, Paper 3 at 5. Patent Owner identifies ParkerVision, Inc. as the sole real party in interest. Paper 7, 1.

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<sup>4</sup> After the parties’ briefing, the district court granted a joint motion to dismiss with prejudice and the case is now closed. *See* Ex. 3001 (Docket Entry 25, Order dated Sept. 27, 2001).

<sup>5</sup> Patent Owner identifies the instant proceeding—IPR2021-00990—as a related matter, but we understand Patent Owner to refer to IPR2021-00985. *See* Paper 7, 1.

*D. The Asserted Grounds of Unpatentability and Declaration Evidence*

Petitioners challenge the patentability of claims 2–4 of the '444 patent on the following grounds:

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §<sup>6</sup></b>	<b>Reference(s)/Basis</b>
2, 3	103(a)	Tayloe, <sup>7</sup> TI Datasheet <sup>8</sup>
2–4	103(a)	Lam, <sup>9</sup> Enz, <sup>10</sup> Tayloe

Pet. 7.

Additionally, Petitioners support their challenge with a Declaration of Matthew B. Shoemake, Ph.D. (Ex. 1002) and a Declaration of Maureen M. Honeycutt (Ex. 1009). Patent Owner supports its arguments with a Declaration of Dr. Michael Steer (Ex. 2038). Petitioners cross-examined Dr. Steer and a transcript of that deposition is of record. Ex. 1021.

*E. The '444 Patent*

The '444 patent is directed to “a wireless local area network (WLAN) that includes one or more WLAN devices (also called stations, terminals, access points, client devices, or infrastructure devices) for effecting wireless communications over the WLAN.” Ex. 1001, 2:10–14. The '444 patent

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<sup>6</sup> The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. Because the '444 patent has an effective filing date before March 16, 2013, we apply the pre-AIA version of the statutory basis for unpatentability.

<sup>7</sup> U.S. Patent No. 6,230,000 B1, issued May 8, 2001 (Ex. 1004, “Tayloe”).

<sup>8</sup> SN74CBT3253 Dual 1-of-4 FET Multiplexer/Demultiplexer (rev. ed. May 1998) (Ex. 1005, “TI Datasheet”).

<sup>9</sup> U.S. Patent No. 5,937,013, issued Aug. 10, 1999 (Ex. 1006, “Lam”).

<sup>10</sup> Circuit Techniques for Reducing the Effects of Op-Amp Imperfections: Autozeroing, Correlated Double Sampling, and Chopper Stabilization, *Proceedings of the IEEE*, Vol. 84, No. 11, Nov. 1996 (Ex. 1007, “Enz”).

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