

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC., HTC CORP., and HTC AMERICA, INC.,
Petitioners,

v.

PARTHENON UNIFIED MEMORY ARCHITECTURE LLC,
Patent Owner.

Case IPR2016-00923¹
Patent 5,812,789

Before MICHAEL R. ZECHER, JAMES B. ARPIN, and
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

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

¹ Case IPR2016-00847 has been joined with this proceeding.

I. BACKGROUND

Apple Inc. (“Apple”) filed a Petition requesting an *inter partes* review of claims 1, 3–6, 11, and 13 (“the challenged claims”) of U.S. Patent No. 5,812,789 (Ex. 1001, “the ’789 patent”). Paper 2 (“Pet.”). Patent Owner, Parthenon Unified Memory Architecture Limited Liability Corp., waived its right to file a Preliminary Response. Paper 8. We determined that the information presented in the Petition established that there was a reasonable likelihood that Apple would prevail in challenging claims 1, 3, 5, 11, and 13 of the ’789 patent as unpatentable under 35 U.S.C. § 102(e), and claims 4 and 6 of the ’789 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on August 23, 2016, as to all the challenged claims. Paper 10 (“Dec. on Inst.”).

Upon instituting this proceeding, we considered a Petition filed by HTC Corp., HTC America, Inc., and LG Electronics, Inc. in Case IPR2016-00847 that challenged the same claims of the ’789 patent at issue in this proceeding based on the same grounds of unpatentability. The Petition in Case IPR2016-00847 was accompanied by a Motion for Joinder that requested we join HTC Corp., HTC America, Inc., and LG Electronics, Inc. as parties to Case IPR2015-01944, which also challenged the same claims of the ’789 patent at issue in this proceeding based on the same grounds of unpatentability. *HTC Corp. v. Parthenon Unified Memory Architecture LLC*, Case IPR2016-00847 (PTAB Apr. 7, 2016) (Papers 1 and 2). Based on a joint request by the parties in Case IPR2015-01944, we terminated that proceeding. *Samsung Elecs. Co. v. Parthenon Unified Memory Architecture LLC*, Case IPR2015-01944 (PTAB May 25, 2016) (Paper 12). We, nonetheless, authorized HTC Corp., HTC America, Inc., and LG

IPR2016-00923
Patent 5,812,789

Electronics, Inc. to file a renewed or second motion for joinder seeking to join this proceeding. Case IPR2016-00847, Paper 11. Shortly thereafter, HTC Corp., HTC America, Inc., and LG Electronics, Inc. filed a Second Motion for Joinder. Case IPR2016-00847, Paper 12. Based on a joint request between LG Electronics, Inc. and Patent Owner, we terminated Case IPR2016-00847 only as to LG Electronics, Inc. Case IPR2016-00847, Paper 15. Pursuant to § 314(a), we instituted another *inter partes* review proceeding as to claims 1, 3–6, 11, and 13 of the '789 patent, and *granted* the Second Motion for Joinder only as to HTC Corp. and HTC America, Inc. (collectively, “HTC”). Paper 12.

During the course of trial, Patent Owner filed a Patent Owner Response. Paper 22 (“PO Resp.”). Apple and HTC (collectively, “Petitioners”) jointly filed a Reply to the Patent Owner Response. Paper 27 (“Pet. Reply”). A consolidated oral hearing with Case IPR2016-00924 was held on May 18, 2017, and a transcript of the hearing is included in the record. Paper 38 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1, 3–6, 11, and 13 of the '789 patent. For the reasons discussed below, we hold that Petitioners have demonstrated by a preponderance of the evidence that claims 1, 3, 5, 11, and 13 of the '789 patent are unpatentable under § 102(e), and claims 4 and 6 of the '789 patent are unpatentable under § 103(a).

A. *Related Matters*

According to the parties, the '789 patent is involved in the following ten district court cases: (1) *Parthenon Unified Memory Architecture LLC v.*

IPR2016-00923
Patent 5,812,789

LG Electronics MobileComm, USA, No. 2:15-cv-01950 (E.D. Tex.); (2) *Parthenon Unified Memory Architecture LLC v. Huawei Techs. Co.*, No. 2:14-cv-00687-JRG-RSP (E.D. Tex.); (3) *Parthenon Unified Memory Architecture LLC v. Motorola Mobility, Inc.*, No. 2:14-cv-00689-JRG-RSP (E.D. Tex.); (4) *Parthenon Unified Memory Architecture LLC v. HTC Corp.*, No. 2:14-cv-00690-RSP (E.D. Tex.); (5) *Parthenon Unified Memory Architecture LLC v. LG Electronics, Inc.*, No. 2:14-cv-00691-JRG-RSP (E.D. Tex.); (6) *Parthenon Unified Memory Architecture LLC v. Samsung Electronics Co.*, No. 2:14-cv-00902-JRG-RSP (E.D. Tex.); (7) *Parthenon Unified Memory Architecture LLC v. Qualcomm Inc.*, No. 2:14-cv-00930-JRG-RSP (E.D. Tex.); (8) *Parthenon Unified Memory Architecture LLC v. ZTE Corp.*, No. 2:15-cv-00225-JRG-RSP (E.D. Tex.); (9) *Parthenon Unified Memory Architecture LLC v. Apple, Inc.*, No. 2:15-cv-00621-JRG-RSP (E.D. Tex.); and (10) *STMicroelectronics, Inc. v. Motorola Inc.*, No. 4:03-cv-00276-LED (E.D. Tex.). Pet. 1–2;² Paper 32, 2. Petitioners also filed other petitions challenging the patentability of a certain subset of claims in related U.S. Patent No. 5,960,464 (Case IPR2016-00924).

B. The '789 Patent

The '789 patent, titled “Video and/or Audio Decompression and/or Compression Device That Shares a Memory Interface,” issued September

² The Petition and supporting evidence filed by HTC in Case IPR2016-00847 are essentially the same as the Petition and supporting evidence filed by Apple in Case IPR2016-00923. For clarity and ease of reference, all references to the Petition and supporting evidence throughout this Final Written Decision are to the Petition and supporting evidence filed by Apple in Case IPR2016-00923.

IPR2016-00923
Patent 5,812,789

22, 1998, from U.S. Patent Application No. 08/702,911, filed on August 26, 1996. Ex. 1001, at [54], [45], [21], [22]. Because the application that led to the '789 patent was filed August 26, 1996, the '789 patent expired on August 26, 2016.

The '789 patent generally relates to an electronic system having a video or audio decompression/compression device and, in particular, to sharing a memory interface between such a device and another device in the electronic system. Ex. 1001, 1:18–23. In the Background section, the '789 patent discloses advantages associated with using encoders and decoders to compress and decompress video and audio sequences, respectively. *Id.* at 1:32–2:3. The '789 patent then proceeds to disclose the architecture of a conventional encoder/decoder prior to asserting that there are a number of problems associated with such an architecture. *Id.* at 2:4–25, Figs. 1a, 1b. According to the '789 patent, one of the problems includes dedicating memory to both the encoder and decoder, thereby increasing the cost of adding these components to an electronic system. *Id.* at 2:29–37.

The '789 patent purportedly solves this problem because the disclosed video or audio decompression/compression device does not need its own dedicated memory, but instead may share memory with another device and still operate in real time. Ex. 1001, 4:30–34. Figure 2 of the '789 patent, reproduced below, illustrates a diagram of an electronic system containing a device having a memory interface, as well as an encoder and decoder. *Id.* at 5:1–3.

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