

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SK HYNIX INC., SK HYNIX AMERICA INC., and
SK HYNIX MEMORY SOLUTIONS INC.,
Petitioner,

v.

NETLIST, INC.
Patent Owner.

IPR2017-00668
Patent 7,532,537 B2

Before STEPHEN C. SIU, MATTHEW R. CLEMENTS, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

McSHANE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

SK hynix Inc., SK hynix America Inc., and SK hynix memory solutions Inc. (“Petitioner”) filed a Corrected Petition requesting *inter partes* review of claims 18–23, 39–44, and 56–60 of U.S. Patent No. 7,532,537 B2 as amended by Reexamination Certificate No. 7,532,537 C1 (Ex. 1001, “the ’537 patent”), pursuant to 35 U.S.C. §§ 311–319. Paper 6 (“Pet.”). Netlist, Inc. (“Patent Owner”) did not file a Preliminary Response to the Petition.

Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review as to claims 18–23, 39–44, and 56–60 of the ’537 patent on July 21, 2017. Paper 10 (“Dec.” or “Institution Decision”), 7–23. The ground for institution was unpatentability under 35 U.S.C. § 103(a) as obvious over the combination of Amidi¹ and Klein.² *Id.* at 21–22.

During the course of trial, Patent Owner filed a Patent Owner Response (Paper 15, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner Response (Paper 19, “Pet. Reply”). Petitioner submitted the Declaration of Harold Stone, Ph.D. (Ex. 1003), and the Supplemental Declaration of Harold Stone, Ph.D. (Ex. 1031). Patent Owner submitted the Declaration of Carl Sechen, Ph.D. (Ex. 2001).

Petitioner filed a Motion to Exclude Evidence (Paper 22, “Pet. Mot. Ex.”), with Patent Owner filing an Opposition the Motion to Exclude (Paper 31, “Pet. Mot. Ex. Opp.”), and Petitioner filing a Reply thereto (Paper 33, “Pet. Mot. Ex. Reply”). Patent Owner filed a Motion for Observations (Paper 24, “Mot. Ob.”) and Petitioner filed a Response to Patent Owner’s Motion for Observations (Paper 29, “Mot. Ob. Resp.”). Patent Owner also filed a Submission on Propriety of

¹ U.S. Patent No. 8,250,295 B2 (issued August 21, 2012) (Ex. 1006).

² U.S. Publication No. 2001/0008006 A1 (published July 12, 2001) (Ex. 1007).

Petitioner' Reply and Supplemental Stone Declaration due to alleged new arguments in Petitioner's Reply and related expert declaration (Paper 26, "PO Obj."), with Petitioner filing a Response (Paper 28, "PO Obj. Resp.").

We held a consolidated oral hearing on April 24, 2018, with the parties presenting arguments for this proceeding in combination with IPR2017-00667 ("the 667 IPR"), as well for another proceeding involving the same parties. A transcript (Paper 35, "Tr."), of the oral hearing has been entered into the record. *See* Tr. 3–45.

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6, and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 18–23, 39–44, and 56–60 of the '537 patent are unpatentable. We deny Petitioner's Motion to Exclude.

B. Related Proceedings

Petitioner and Patent Owner indicate related matters are *Netlist, Inc. v. Inphi Corp.*, Case No. 09-cv-6900-FMO (C.D. Cal.); *Inter Partes* Reexamination No. 95/001,381 filed by Inphi Corporation on June 9, 2010, with associated Federal Circuit decision, *Inphi v. Netlist*, 805 F.3d 1350 (Fed. Circ. 2015); *inter partes* reexaminations of related U.S. Patent No. 7,619,912 (Control Nos. 95/001,339, 95/000,578, 95/000,579), U.S. Patent No. 7,864,627 (Control No. 95/001,758), and U.S. Patent No. 7,636,274 (Control No. 95/001,337); *inter partes* reviews of U.S. Patent No. 7,881,150 (Case Nos. IPR2014-00882, IPR2014-01011, and IPR2015-01020), U.S. Patent No. 8,081,536 (Case Nos. IPR2014-00883 and IPR2014-01021), U.S. Patent No. 7,532,537 (Case No. IPR2017-00667), U.S. Patent No. 8,756,364 (Case No. IPR2017-00549). *See* Pet. 1–2; Paper 5, 1–3.

Another *inter partes* review was instituted in the 667 IPR, which challenges the same '537 patent, but different claims than those at issue here. *See SK hynix Inc. v. Netlist, Inc.*, Case IPR2017-00667, Papers 6 and 10. A final written decision in that proceeding issues concurrently with this decision.

Cases IPR2014-00882 (“882 IPR”), IPR2014-00883 (“883 IPR”), and IPR2014-01011 (“1011 IPR”) were directed to different patents, but the patents are related and have the same specification as the '537 patent. Final written decisions were issued in these cases, the decisions were appealed to the Federal Circuit, and a decision issued in the appeal on July 25, 2017. *See Netlist, Inc. v. Diablo Techs., Inc.*, 701 Fed. App'x 1001 (Fed. Cir. 2017) (Ex. 2003) (“the Federal Circuit decision”). In its decision, the Federal Circuit construed some claim terms and remanded the cases back to the Patent Trial and Appeal Board for further proceedings. *See Netlist*, 701 Fed. App'x at 1004–7. Subsequently, the Patent Trial and Appeal Board issued decisions from the remand in the 882 IPR, the 883 IPR, and the 1011 IPR, finding that under the Federal Circuit's claim construction, the respective claims challenged were unpatentable. *See Diablo Techs., Inc. v. Netlist, Inc.*, Case IPR2014-00882, (PTAB Mar. 29, 2018) (Paper 36); *Diablo Techs., Inc. v. Netlist, Inc.*, Case IPR2014-00883, (PTAB Mar. 29, 2018) (Paper 36); *Diablo Techs., Inc. v. Netlist, Inc.*, Case IPR2014-01011, (PTAB Mar. 29, 2018) (Paper 37).

C. The '537 Patent

The '537 patent is entitled “Memory Module With A Circuit Providing Load Isolation and Memory Domain Translation,” and issued on May 12, 2009, from an application filed on January 19, 2006. Ex. 1001, [22], [45], [54]. The '537 patent claims priority to (1) U.S. Patent Application No. 11/173,175, filed on July 1, 2005 (now U.S. Patent No. 7,289,386); (2) U.S. Application No. 11/075,395, filed on

March 7, 2005 (now U.S. Patent No. 7,286,436); (3) U.S. Provisional Application No. 60/645,087, filed on January 19, 2005; (4) U.S. Provisional Application No. 60/588,244, filed on July 15, 2004; (5) U.S. Provisional Application No. 60/550,668, filed on March 5, 2004; (6) U.S. Provisional Application No. 60/575,595, filed on May 28, 2004; and (7) U.S. Provisional Application No. 60/590,038, filed on July 21, 2004. *Id.* at [60], [63]. *Inter Partes* Reexamination No. 95/001,381 was conducted, resulting in claims 1, 7, 13, 16, 18, 21, 23, 24, 35, 39, 41 and 44 being deemed patentable as amended, claims 2–6, 8–12, 14, 15, 17, 19, 20, 22, 25–34, 36–38, 40, 42, and 43, which are dependent on amended claims, determined to be patentable, and with new claims 45–60 added which were determined to be patentable. *See* Ex. 1001, *Inter Partes* Reexamination Certificate (“Reexam. Cert.”) 1:16–22.³

The ’537 patent is directed to a memory module system that includes memory devices and a circuit. Ex. 1001, Abstract, 2:62–63. The circuit can isolate one or more of the memory device loads from the computer system. *Id.* at Abstract, 2:67–3:1. The circuit has logic to translate between the system memory domain of the computer system and the physical memory domain of the memory module. *Id.* at Abstract, 3:2–4. The memory module has at least two memory devices arranged into ranks, and each memory device has a data signal line and data strobe line. *Id.* at 5:64–6:3, 6:27–47. Figure 4A of the ’537 patent is reproduced below.

³ The Board issued an affirmance in the Reexamination (Ex. 1005, 1947–1970, 2058–2063), of the Examiner’s Action Closing Prosecution (*id.* at 1494–1525), which determined that the reexamined amended and unamended claims were patentable. On appeal to the Federal Circuit, the Board’s determination was upheld. *Inphi Corp. v Netlist, Inc.*, 805 F.3d 1350 (Fed. Cir. 2015). The Reexamination considered different prior art than the art at issue under this review.

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