

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.

Case IPR2017-00692
Patent 8,874,831 B2

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

CLEMENTS, *Administrative Patent Judge*.

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

I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314, SK hynix Inc., SK hynix America Inc. and SK hynix memory solutions Inc. (“Petitioner”) challenges claims 1–15 (“the challenged claims”) of U.S. Patent No. 8,874,831 B2 (Ex. 1001, “the ’831 patent”), owned by Netlist, Inc. (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that the challenged claims are unpatentable. Petitioner’s Motion to Exclude is *dismissed*.

A. Procedural History

Petitioner filed a Petition requesting an *inter partes* review of claims 1–15 of the ’831 patent. Paper 1 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6. On July 21, 2017, we instituted *inter partes* review of (1) claims 1–14 of the ’831 patent as unpatentable under 35 U.S.C. § 102¹ as anticipated by Best;² (2) claims 1–14 under 35 U.S.C. § 103(a) as obvious over Best; (3) claims 1–14 under 35 U.S.C. § 103(a) as obvious over Best and Roy;³ and (4) claim 15 over Bowie under 35 U.S.C. § 103(a) as obvious

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’831 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

² U.S. Patent Publication No. 2010/0110748 A1 (Ex. 1006, “Best”).

³ U.S. Patent No. 6,065,092 (Ex. 1008, “Roy”).

over Best, Mills,^{4,5} and Bonella,⁶ with or without Roy. Paper 7 (“Inst. Dec.”), 28.

Thereafter, Patent Owner filed a Patent Owner Response (Paper 12, “PO Resp.”), to which Petitioner filed a Reply (Paper 15, “Reply”). Petitioner filed a Motion to Exclude (Paper 17). Patent Owner filed an Opposition (Paper 20) to which Petitioner filed a Reply (Paper 22).

On April 24, 2018, we held a hearing and a transcript of the hearing is included in the record. Paper 24 (“Tr.”).

On May 3, 2018, following the Supreme Court’s decision in *SAS Inst., Inv. v. Iancu*, 138 S. Ct. 1348 (2018), we issued an Order (Paper 23) modifying our Institution Decision to include review of all challenged claims and all grounds presented in the Petition, including these grounds on which we had previously not instituted (Pet. 3, 28):

References	Basis	Claim(s) challenged
Best and Tsunoda, with or without Roy	§ 103	2 and 8
Best and Roohparvar, ⁷ with or without Roy	§ 103	5 and 12–14
Best, Mills, ⁸ Bonella, and Ashmore, with or without Roy	§ 103	15

⁴ U.S. Patent No. 6,026,465 (Ex. 1010, “Mills”).

⁵ Although Petitioner does not include Mills (Ex. 1010) explicitly in its ground (Pet. 3), we include it because Petitioner’s analysis relies upon it (*id.* at 61–64) for teaching part of a limitation.

⁶ U.S. Patent Publication No. 2007/0136523 A1 (Ex. 1013, “Bonella”).

⁷ U.S. Patent Publication No. 2005/0273548 A1 (Ex. 1019, “Roohparvar”).

⁸ Although Petitioner does not include Mills (Ex. 1010) explicitly in its

In our order, we also stated that, “If, after conferring, the parties wish to submit further briefing, the parties must, within one week of the date of this Order, request a conference call with the panel to seek authorization for such briefing.” Paper 23, 2. Neither party requested a conference call with the panel.

B. Related Proceedings

The parties indicate that the ’831 patent is the subject of several district court cases and related *inter partes* reviews. Pet. 2; Paper 4, 3.

C. The ’831 patent (Ex. 1001)

The ’831 patent, titled “Flash-Dram Hybrid Memory Module,” issued October 28, 2014, from U.S. Patent Application No. 13/559,476. Ex. 1001 at [54], [45], [21]. The ’831 patent generally relates to a memory module with a non-volatile memory, a volatile memory, and a data manager through which the volatile memory and non-volatile memory may exchange data, and a controller to receive read/write commands from a memory controller hub (“MCH”) and transfer data between any two or more of the MCH, volatile memory, and non-volatile memory. *Id.* at Abstract.

ground (Pet. 3), we include it because Petitioner’s analysis relies upon it (*id.* at 61–64) for teaching part of a limitation.

Figure 4A is reproduced below.

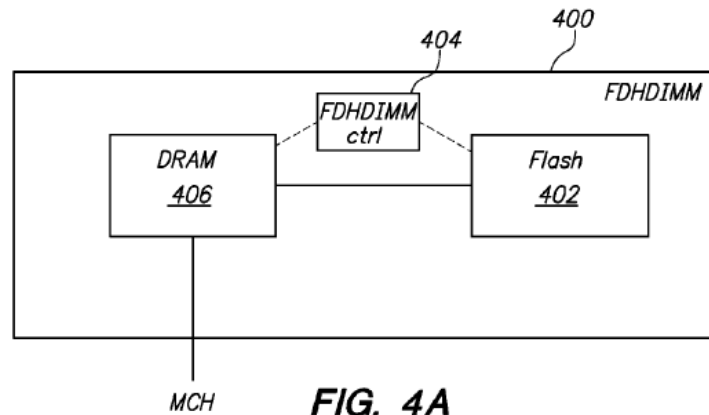


Figure 4A is a block diagram of a Flash-DRAM hybrid dynamic random access memory dual in-line memory module (DIMM). In this embodiment, volatile memory subsystem 406 (e.g. DRAM) is used as a data buffer such that data from Flash memory 402 is transferred to DRAM 406 at the Flash access speed, and buffered or collected into DRAM 406, which then transfers the buffered data to the MCH based on the access time of DRAM. *Id.* at 9:15–21. Similarly, when the MCH transfers data to DRAM 406, controller 404 manages the data transfer from DRAM 406 to Flash 402. *Id.* at 9:21–23.

Figure 5A is reproduced below.

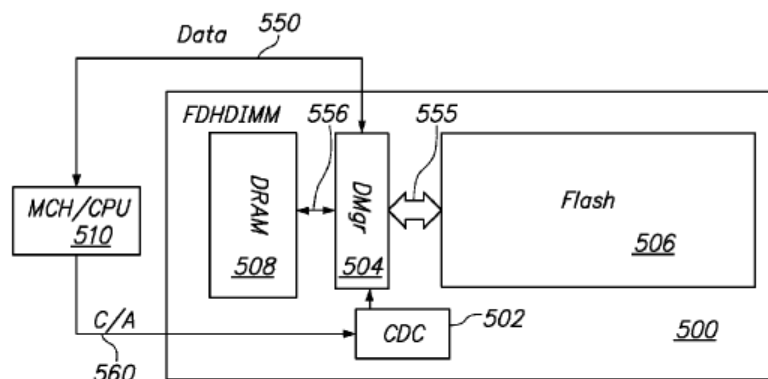


FIG. 5A

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