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(54) Title: APPARATUSES AND METHODS FOR PERFORMING INTRA-MODULE DATABUS INVERSION OPERATIONS

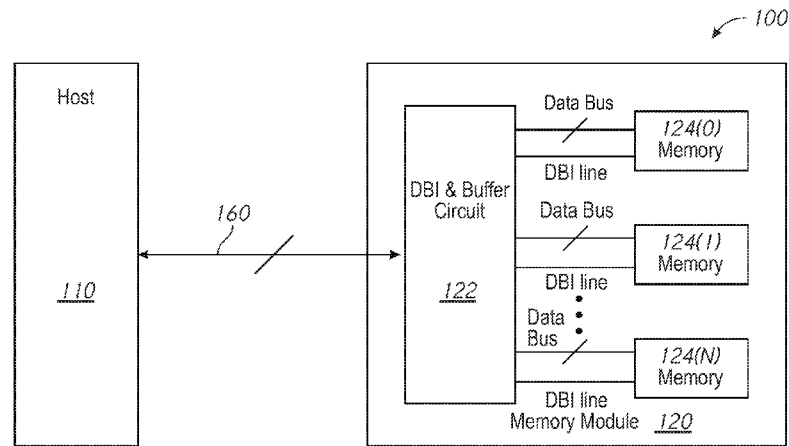


FIG. 1

(57) Abstract: Apparatuses, memory modules, and methods for performing intra-module data bus inversion operations are described. An example apparatus include a memory module comprising a data bus inversion (DBI) and buffer circuit and a plurality of memories. The DBI and buffer circuit configured to encode a block of data received by the memory module and to provide DBI data and a corresponding DBI bit to a respective memory of the plurality of memories.



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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: data, bus, inversion, memory, encode, decode, bit, store, and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2012-0195131 A1 (GEORGE PAX) 02 August 2012 See paragraphs [0016], [0021], [0026], [0032], [0041]-[0044], [0048]-[0050], and [0066]; claims 1, 7, 13, and 17; and figure 5.	1-26
Y	US 2009-0179782 A1 (TIMOTHY M. HOLLIS) 16 July 2009 See paragraphs [0010], [0024], and [0037]; and figure 4B.	1-26
A	US 2014-0289460 A1 (GSI TECHNOLOGY, INC.) 25 September 2014 See paragraphs [0038] and [0044]; and figure 7.	1-26
A	US 2014-0053040 A1 (MICRON TECHNOLOGY INC.) 20 February 2014 See paragraphs [0015] and [0030]; and figure 5.	1-26
A	WO 2014-151637 A1 (QUALCOMM INCORPORATED) 25 September 2014 See paragraphs [0007] and [0024]; and figure 5A.	1-26

 Further documents are listed in the continuation of Box C. See patent family annex.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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