Abstract: A memory module comprises a volatile memory subsystem configured to coupled to a memory channel in computer system and capable of serving as main memory for the computer system, a non-volatile memory subsystem providing storage for the computer system, and a module controller coupled to the volatile memory subsystem, the non-volatile memory subsystem, and the C/A bus. The module controller is configured to control intra-module data transfers between the volatile memory subsystem and the non-volatile memory subsystem. The module controller is further configured to monitor C/A bus signals on the C/A bus and schedule the intra-module data transfers in accordance with the C/A bus signals so that the intra-module data transfers do not conflict with accesses to the volatile memory subsystem by the memory controller.
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:  
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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 12/00 (2015.01)
CPC - G11C 7/1072 (2015.04)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - G06F 3/06, 12/00, 13/00, 13/28 (2015.01)
USPC - 711/100, 101, 105, 111

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

IPC(FR) (2015.04) (keyword delimited)

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

PatBase, Orbit, Google Patents, Google Scholar, Google.

Search terms used: memory, volatile, non-volatile, DRAM, Flash, controller, bus, main, partition, scratch, data bus, address bus, page-in, page-out, address, target, source, dummy, Embedded multimedia

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>Y</td>
<td>WO 2012/148812 A2 (RAM) 01 November 2012 (01.11.2012) entire document</td>
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Date of the actual completion of the international search: 27 July 2015

Date of mailing of the international search report: 14 AUG 2015

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