

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 March 2005 (17.03.2005)

PCT

(10) International Publication Number
WO 2005/024561 A3

(51) International Patent Classification⁷: **G06F 13/12**, 13/38

(21) International Application Number:
PCT/US2004/025523

(22) International Filing Date: 6 August 2004 (06.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/651,801 28 August 2003 (28.08.2003) US

(71) Applicant (for all designated States except US): **MICRON TECHNOLOGY, INC.** [US/US]; 8000 Federal Way South, Boise, Idaho 83716-9632 (US).

(71) Applicant and

(72) Inventor: **JEDDELOH, Joseph, M.** [US/US]; 4302 Reiland Lane, Shoreview, Minnesota 55126 (US).

(74) Agents: **BULCHIS, Edward, W.** et al.; **DORSEY & WHITNEY LLP**, 1420 Fifth Avenue, Suite 3400, Seattle, Washington 98101 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

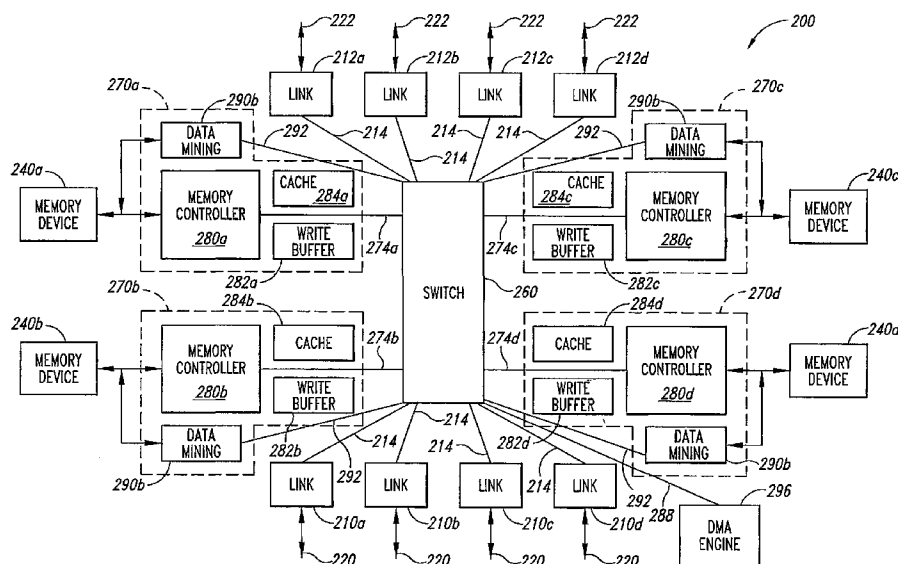
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: MEMORY MODULE AND METHOD HAVING ON-BOARD DATA SEARCH CAPABILITIES AND PROCESSOR-BASED SYSTEM USING SUCH MEMORY MODULES



(57) Abstract: A memory module (130) includes several memory devices (148) coupled to a memory hub (140). The memory hub (140) includes several link interfaces coupled to respective processors, several memory interfaces coupled to respective memory devices, and a cross-bar switch (260) coupling any of the link interfaces (210-212) to any of the memory interfaces (270). Each memory interface includes a memory controller (280), a write buffer (282), a read cache (284), and a data mining module (290). The data mining module (290) includes a search data memory that is coupled to the link interface to receive and store at least one item of search data. A comparator receives both the read data from the memory device and the search data. The comparator then compares the read data to the respective item of search data and provides a hit indication in the event of a match.



(88) Date of publication of the international search report:

10 November 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.