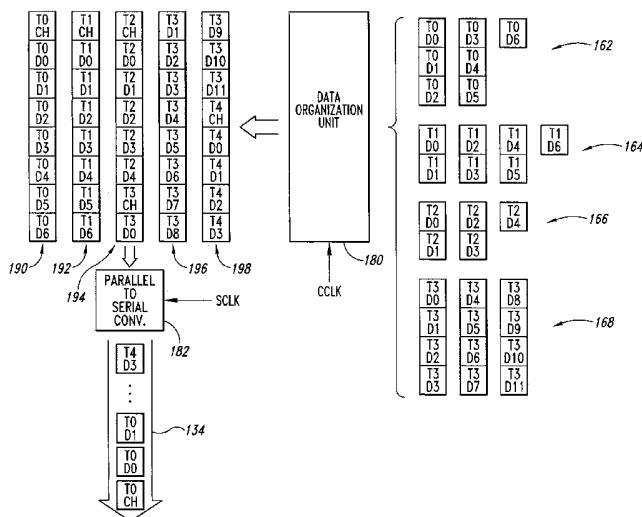




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- (54) Title:** SYSTEM AND METHOD FOR ORGANIZING DATA TRANSFERS WITH MEMORY HUB MEMORY MODULES



(57) Abstract: A memory system includes a memory hub controller coupled to a plurality of memory modules each of which includes a memory hub. The memory hubs each include a transmit interface having a data organization system that organizes a command header and data for each of a plurality of memory transactions into lane groups each of which contain a predetermined number of lanes. Each of the lanes contains either parallel command header bits or parallel data bits. The lane groups are then converted to a serial stream of lanes and transmitted from the memory hubs through a high-speed bus. The lane groups are organized so that they are always filled with lanes containing either a command header or data. As a result, the high-speed bus is never idle during transmission of memory transactions from the memory hub thereby maximizing the memory bandwidth of the memory system.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/08865

A. CLASSIFICATION OF SUBJECT MATTER

IPC: G06F 13/12(2006.01),13/38(2006.01)

USPC: 710/71

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)

U.S. : 710/71

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/0229770 A1 (JEDDELOH) 11 December 2003 (11.12.2003) Figures 1-3	1-48
A	US 5,748,629 (CALDARA et al) 5 May 1998 (05.05.1998) Fig. 1; Fig. 6 col. 2, ll. 57-67; col. 3, ll. 4-10; col. 3, ll. 28-33; col. 6, ll. 11-17	1-48
A	US 6,778,546 (EPPS et al) 17 August 2004 (17.08.2004), Fig. 2-3; Fig. 11 col. 25, ll. 46-51; col. 6, ll. 1-12; col. 7, ll. 13-20; col. 15, ll. 8-21	5, 7-9, 16, 18-20, 26-27, 33 and 35-37

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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