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ARBITRATION CONTROL LOGIC FOR COMPUTER SYSTEM
HAVING DUAL BUS ARCHITECTURE

Abstract

A computer system is provided comprising system memory and a memory controller for controlling access to system memory, a central processing unit electrically connected with the memory controller, and a bus interface unit electrically connected to the memory controller by a system bus and electrically connected to a plurality of input/output devices by an input/output bus. The bus interface unit is able to sense when said one of said input/output devices has completed a read or write operation over said input/output bus, and includes a buffer circuit wherein read and write data transferred between the system bus and the input/output bus via the bus interface unit is temporarily stored during the transfer. Arbitration control logic resides in said bus interface unit and interacts with a central arbitration controller which resides on the system bus. The central arbitration controller responds to the arbitration control logic to simultaneously perform (i) arbitration cycles wherein the central arbitration controller arbitrates between the plurality of input/output devices and the central processing unit to determine which of the input/output devices or the central processing unit should be granted control of the input/output bus and (ii) grant cycles wherein the central arbitration controller grants control of the input/output bus and extends control of the system bus to one of the input/output devices or the central processing unit.

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