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(54) **ADVANCED DYNAMIC DISK MEMORY  
MODULE SPECIAL OPERATIONS**

**Publication Classification**

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(57) **ABSTRACT**

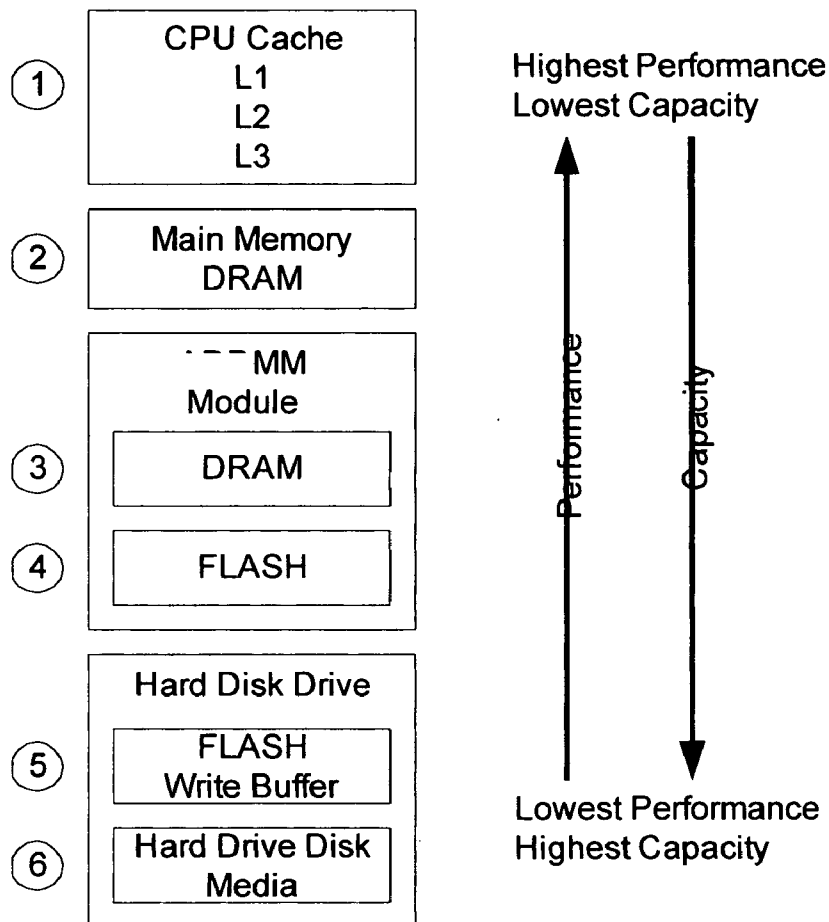
A memory module including a volatile memory, a non-volatile memory, and a controller that provides address, data, and control interfaces to the memories and to a host system, such as, for example, a personal computer, is operable to interact with the host system so as to provide one or more additional layers in the memory hierarchy of the host system. In one aspect of the present invention the controller operates the volatile memory of the memory module as a cache for the non-volatile memory of the memory module. In another aspect of the present invention data representing one or more software applications and/or one or more data sets are stored in the non-volatile memory of the memory module along with security information such that a host system may quickly launch applications from the memory module rather than from a slower hard disk drive.

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(22) Filed: **Dec. 8, 2006**

**Related U.S. Application Data**

(60) Provisional application No. 60/749,267, filed on Dec. 8, 2005.



**Memory Performance Hierarchy**

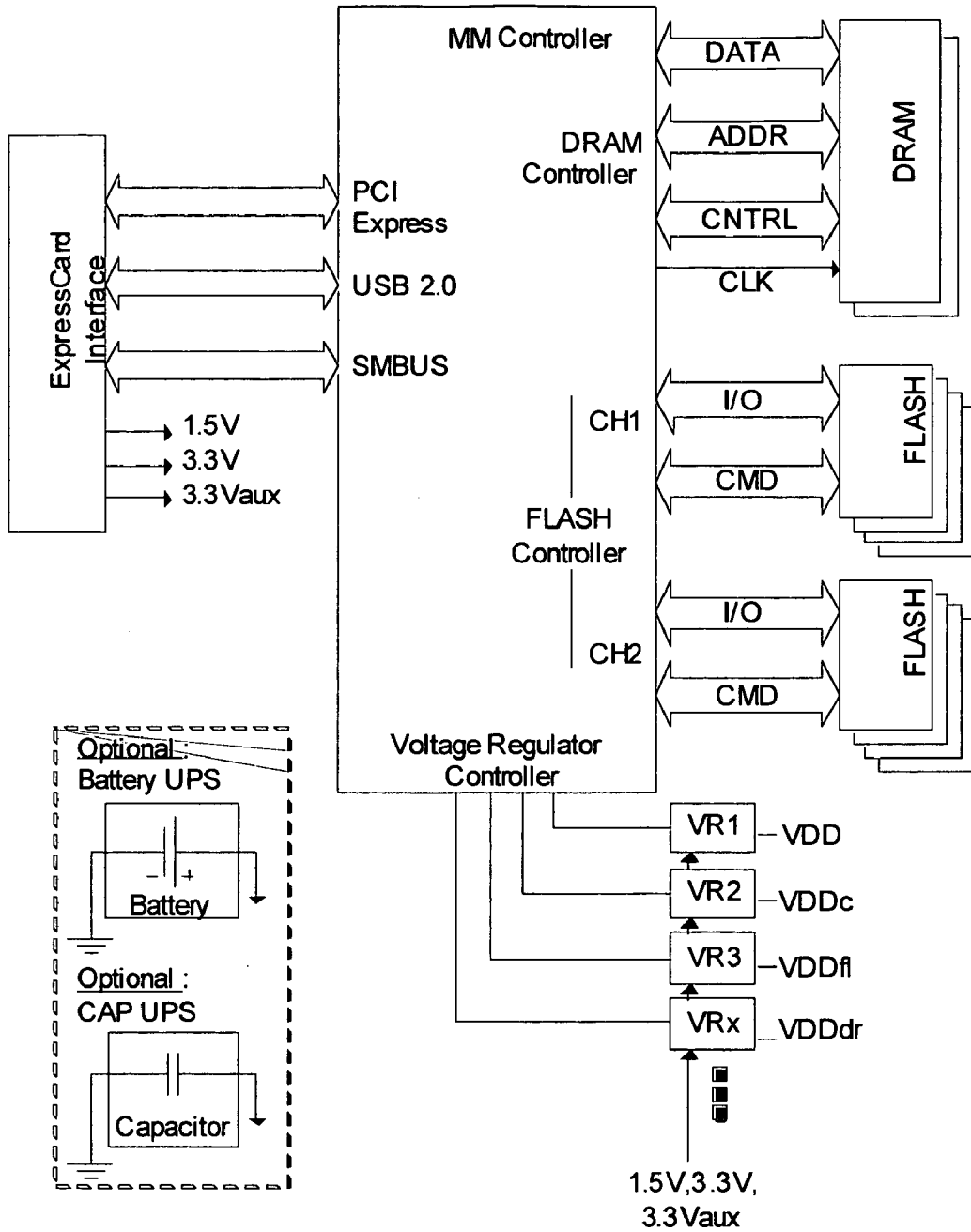


FIG. 1 Memory Module Block Diagram

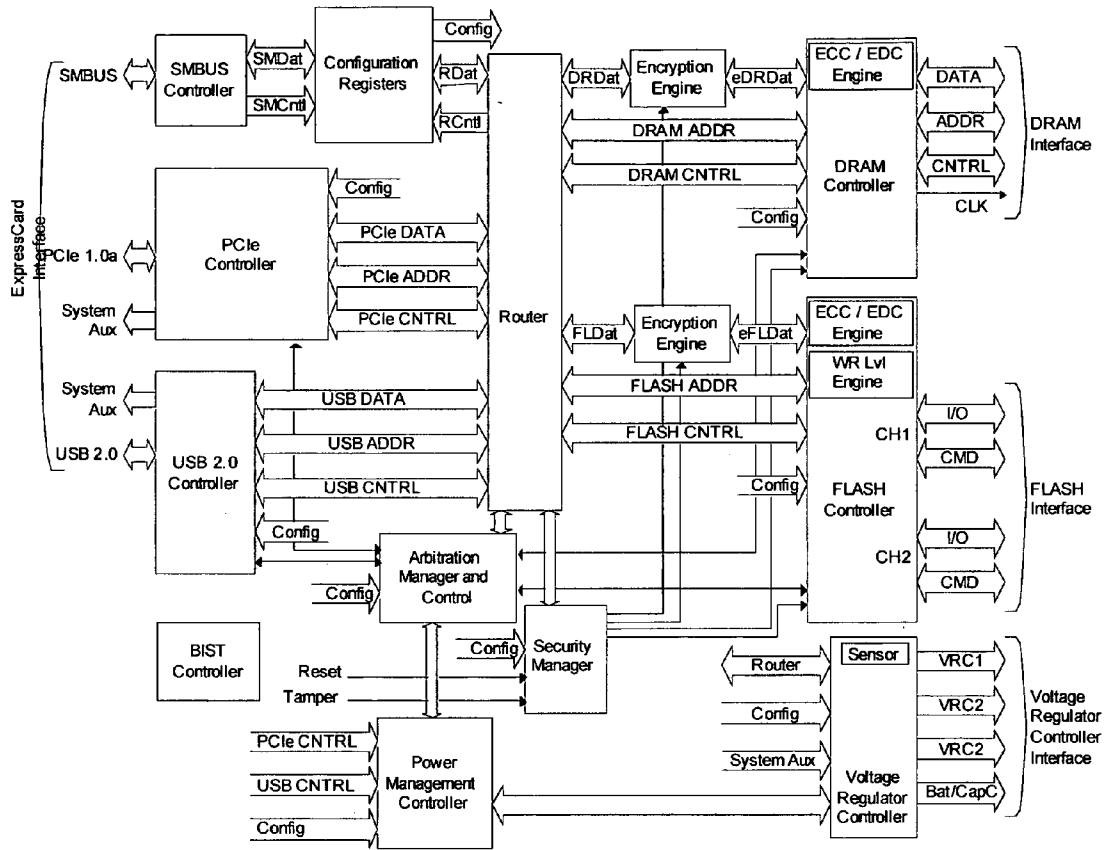


FIG. 2 Memory Module Controller Block Diagram

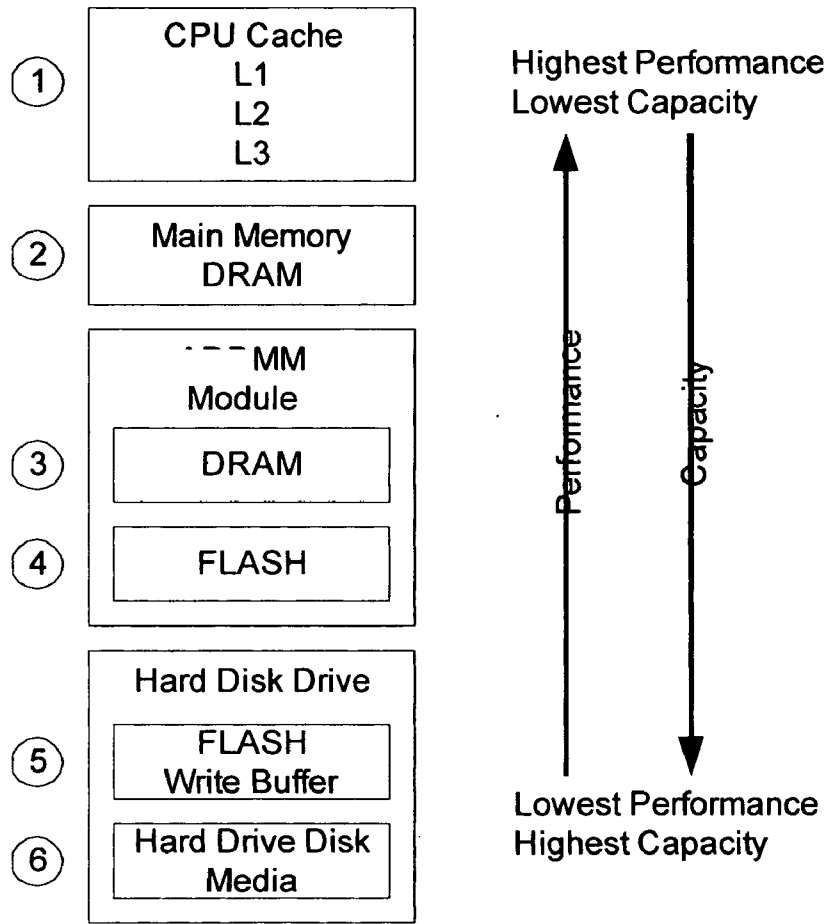


FIG. 3 Memory Performance Hierarchy

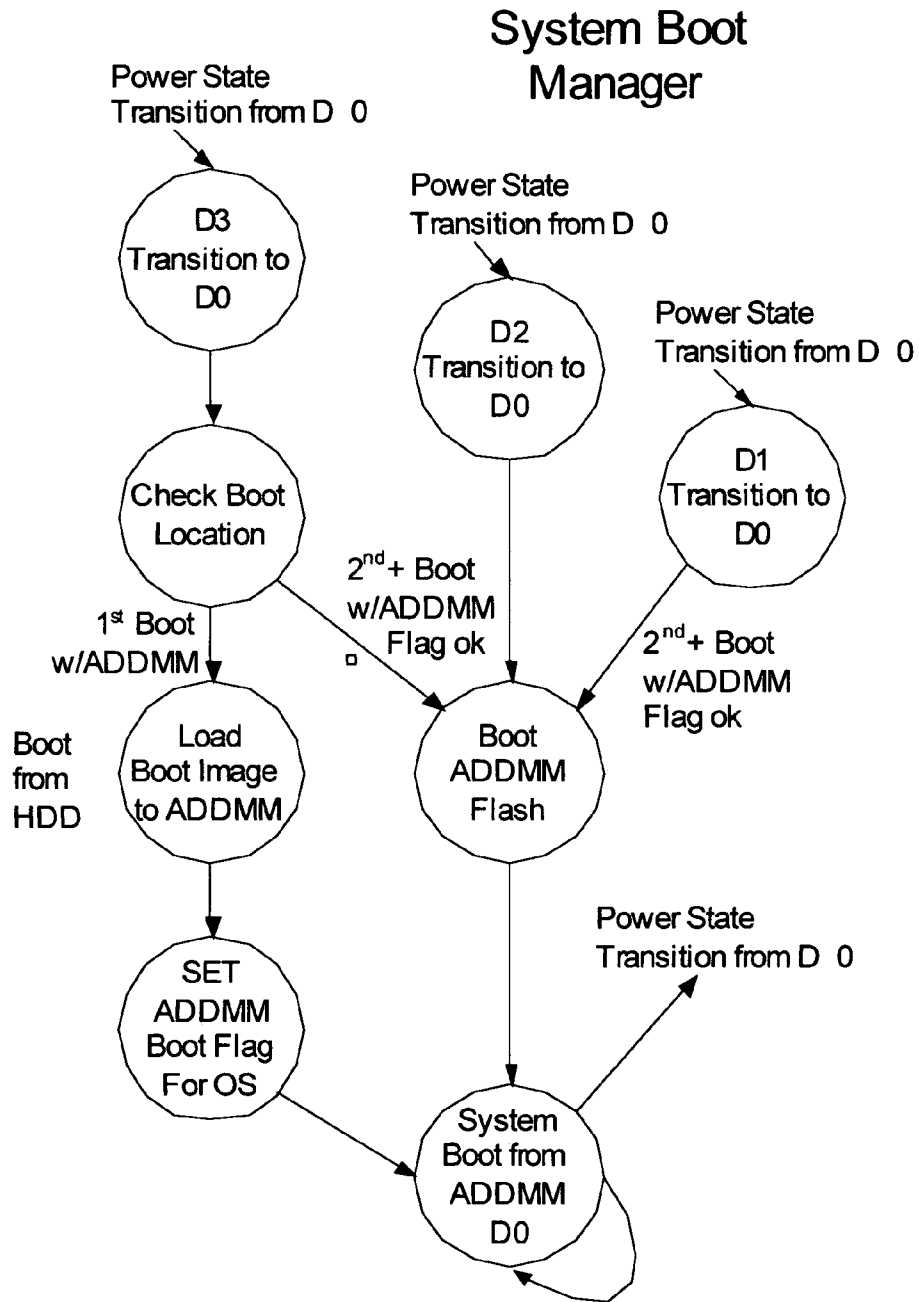


FIG. 4 System Boot Manager Flow Chart

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