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Frost-Ruebling et al.

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(54) **PORTABLE HIGH CAPACITY DIGITAL DATA STORAGE DEVICE**

(75) Inventors: **Steven G. Frost-Ruebling**, San Francisco, CA (US); **James Martin**, Kitchener (CA)

(73) Assignee: **Cinegest, Inc.**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1435 days.

This patent is subject to a terminal disclaimer.

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G06K 19/06	(2006.01)
G06F 1/00	(2006.01)
G06F 3/00	(2006.01)
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G06F 13/00	(2006.01)
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See application file for complete search history.

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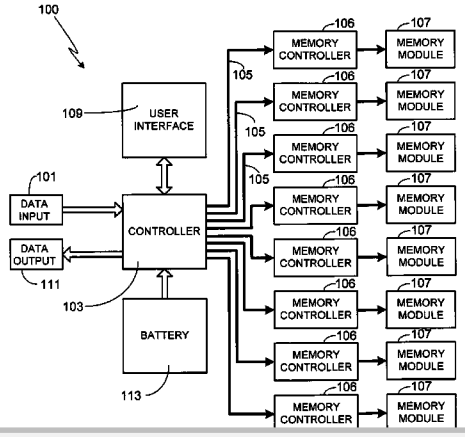

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Primary Examiner — Thai Tran
Assistant Examiner — Syed Hasan

(57) **ABSTRACT**

A portable data storage device compatible with both standard and high definition digital video cameras is provided. The device includes at least one SDI I/O, and preferably at least one audio I/O and preferably at least one medium speed I/O interface. A device controller takes the high speed serial data, packetizes it, and then sends it out to a plurality of memory modules. Preferably each memory module includes four NAND clusters, each NAND cluster consisting of a flash memory controller and two NAND flash memories. Interposed between the device controller and the memory modules are a plurality of memory controllers, each memory controller controlling a group of memory modules. A user interface is coupled to the device controller, the interface including a display capable of at least two user-selectable orientations, record/playback controls and a four-way directional control pad.

25 Claims, 7 Drawing Sheets

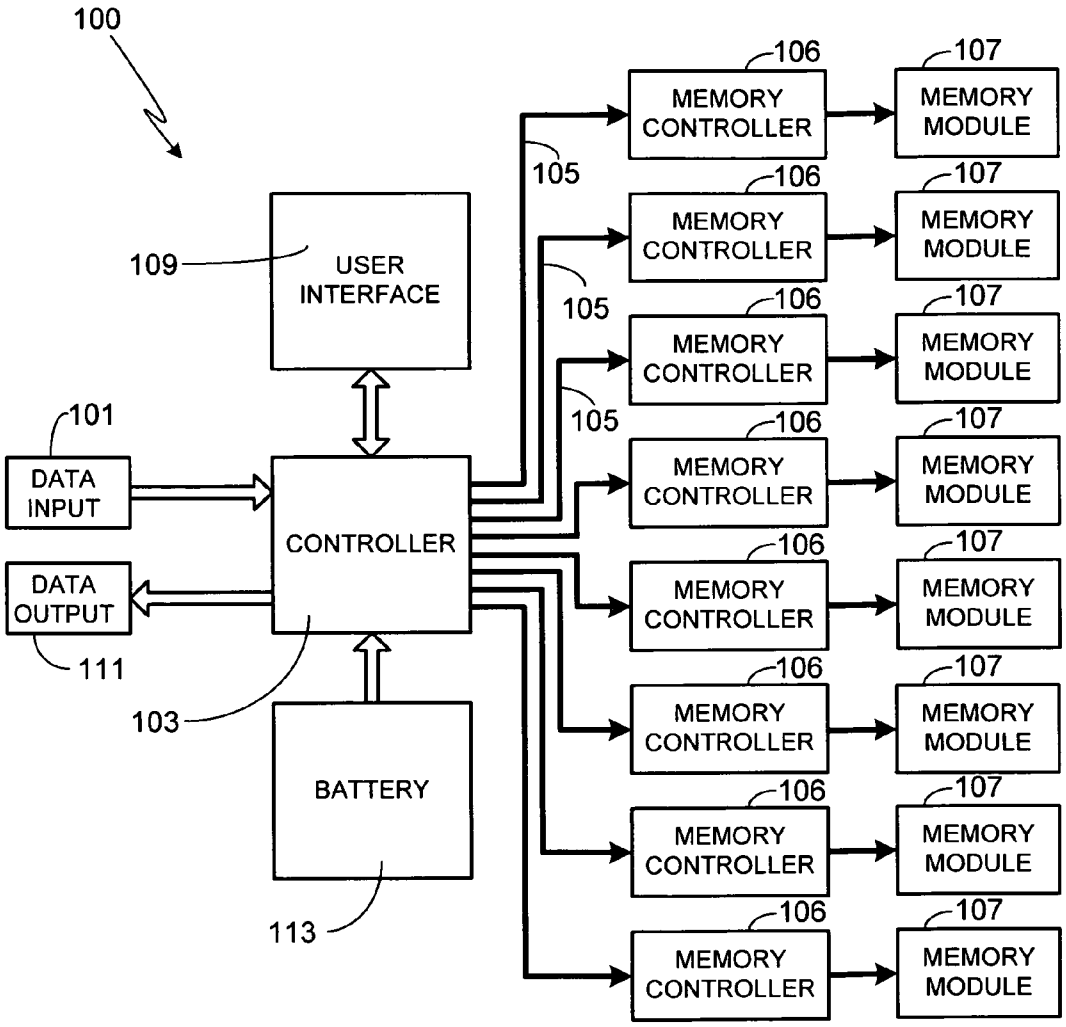

FIG. 1

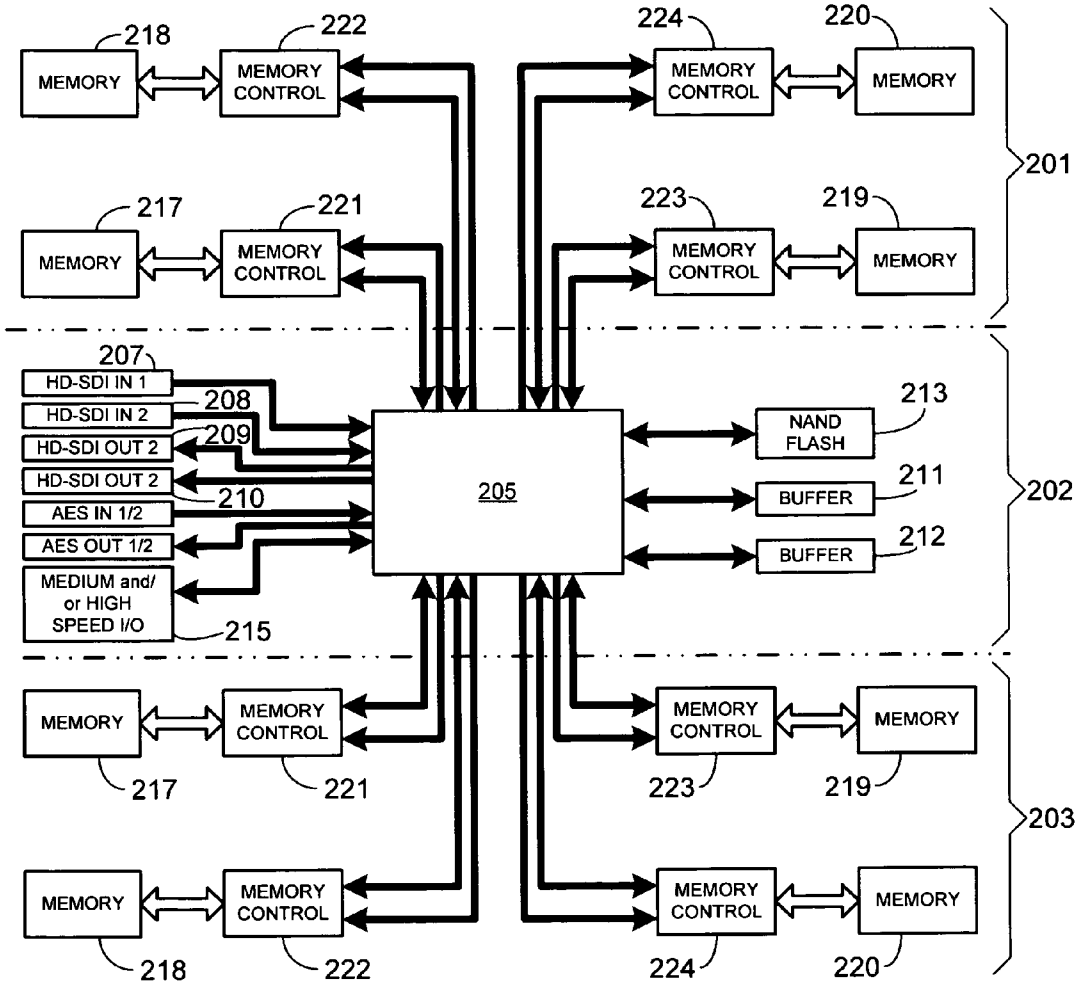

FIG. 2

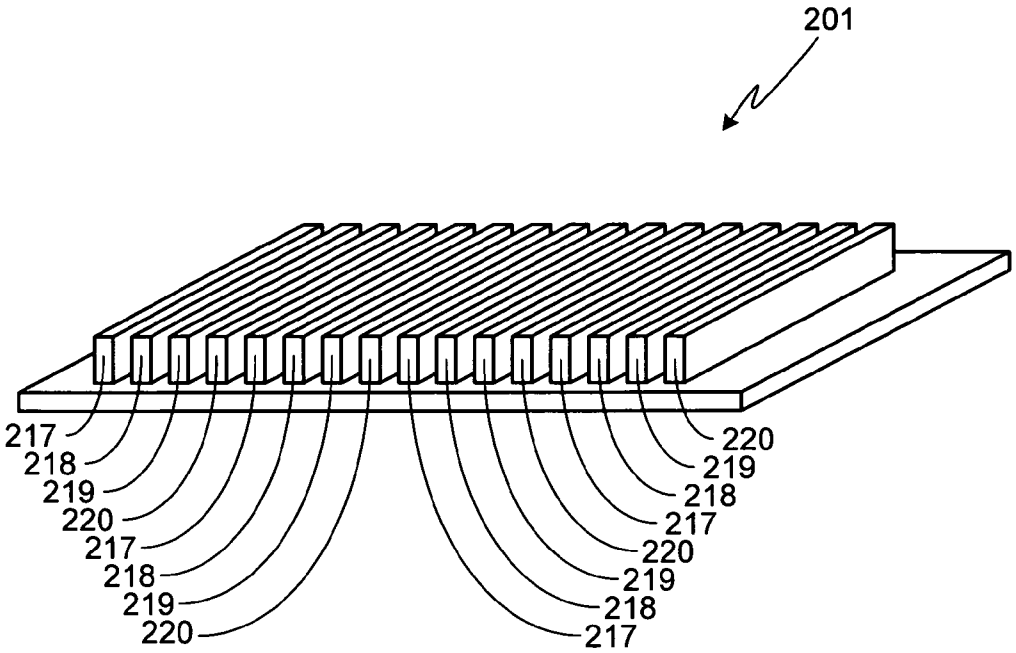

FIG. 3

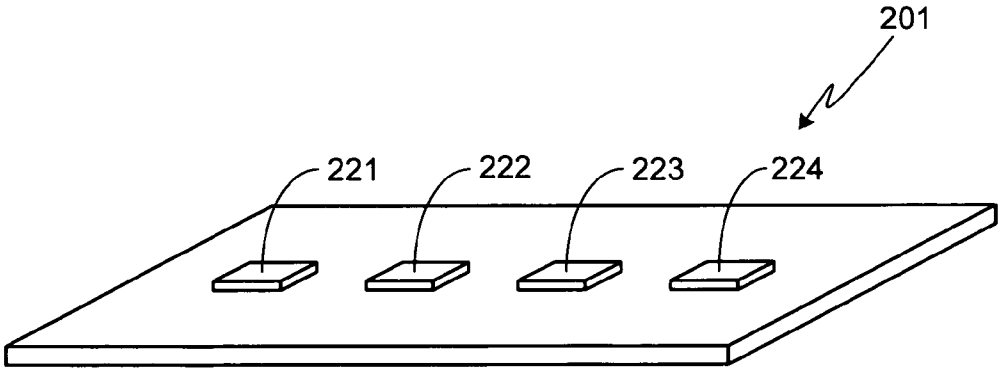

FIG. 4

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