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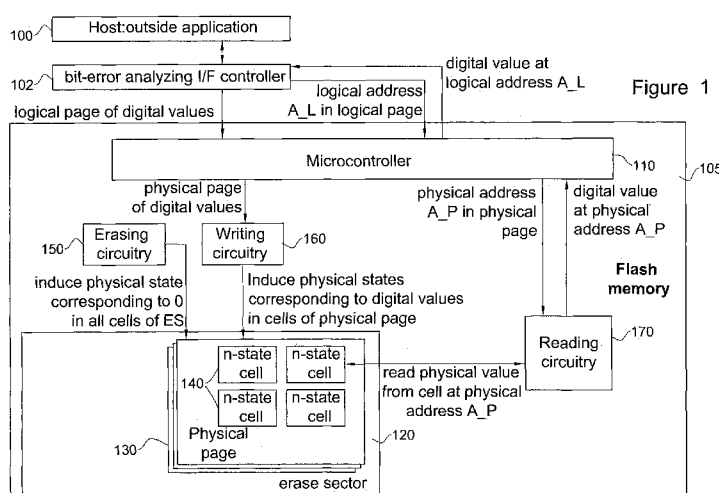
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(54) Title: APPARATUS AND METHODS FOR GENERATING ROW-SPECIFIC READING THRESHOLDS IN FLASH MEMORY



(57) Abstract: A method for generating a set of at least one row-specific reading threshold for reading at least portions of pages of data within an erase sector of a flash memory device, the method comprising predetermining at least one initial reading threshold; performing the following steps for at least one current logical page: generating bit error characterizing information regarding at least one corresponding bit error within at least one cell representing at least a logical portion of at least one successfully reconstructed previous logical page; and computing at least one row-specific reading threshold based on said bit error characterizing information and on a previous threshold initially comprising said initial threshold and subsequently comprising a row-specific reading threshold computed for a successfully reconstructed previous logical page; and reading at least a portion of said current logical page using said at least one row-specific reading threshold.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 08/01231

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 13/00 (2009.01)

USPC - 711/155

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)

USPC: 711/155

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

USPC: 711/100, 101, 154, 155, 209, 210; 714/1, 5, 6, 8

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

PubWEST(PGPB,USPT,EPAB,JPAB); Google Scholar/Patents

Search Terms Used: reading threshold, bit error, page, bit error characteristics, flash memory, identify, direction, left to right, right to left, multi level, multibit, CSB, LSB, MSB etc.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007/0104004 A1 (So et al.) 10 May 2007 (10.05.2007) entire document, especially, Fig. 6, para. [0005], [0007], [0008], [0010], [0013], [0024], [0025], [0027], [0028], [0047].	1-22
Y	US 7,290,203 B2 (Emma et al.) 30 October 2007 (30.10.2007) entire document, especially, col. 7, ln. 40-55, col. 5, ln 5-35.	1-22
Y	US 2007/0253249 A1 (Kang et al.) 01 November 2007 (01.11.2007) entire document, especially, [0028], [0030], [0031].	9-14
Y	US 7,177,977 B2 (Chen et al.) 13 February 2007 (13.02.2007) entire document, especially, Abstract.	19-20

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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