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(54) Title: SYSTEMS AND METHODS FOR MULTIPLE CODING RATES IN FLASH DEVICES

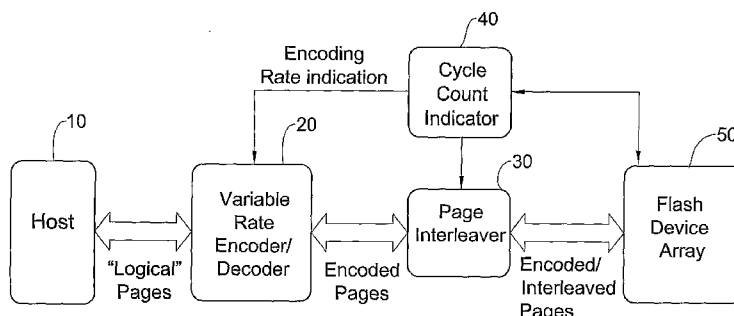


Figure 1

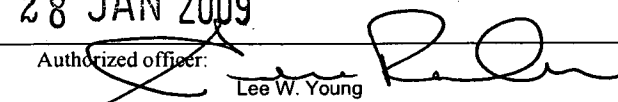
(57) Abstract: A system and method for encoding information arriving from a host in order to store the coded information in flash memory, the method comprising encoding information arriving from a host for storage at a flash memory location including generating a number of redundancy bytes, the encoding proceeding at an encoding rate which is a function of the number of redundancy bytes generated, the encoding including determining an effective error rate, including an anticipated rate of expected reading errors, for the flash memory location; and selecting the encoding rate as a function of the effective error rate such that the number of redundancy bytes is sufficient to overcome the anticipated rate of expected reading errors with a predetermined degree of certainty.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL 08/01228

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H04L 12/28 (2009.01) USPC - 370/395.21 According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) USPC 370/395.21</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC 370/395.1,395.2,395.21</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST(USPT,PGPB,EPAB,JPAB); DialogPRO(Patents);Google Scholar Search Terms: encode information, flash memory, NROM, redundancy bytes, certainty, error with rate or expect, logical and physical with address</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X --- Y</td> <td>US 5,793,774 A (Usui et al) 11 August 1998 (11.08.1998), entire document especially Figs 1,2,22 and col 4, ln 17-30; col 8, ln 1-19; col 9, ln 5-26; col 9, ln 45-63; col 16, ln 11-24; col 17, ln 7-21; col 19, ln 13-21.</td> <td>7,15-18 ----- 1-6,8-14</td> </tr> <tr> <td>Y</td> <td>US 6,119,245 A (Hiratsuka) 12 September 2000 (12.09.2000), entire document especially col 3, ln 14-29; col 3, ln 60-67; col 5, ln 46-53; col 7, ln 31-37; col 13, ln 5-19.</td> <td>1-6,8-14</td> </tr> <tr> <td>Y</td> <td>US 2006/0248434 A1 (Radke et al.) 02 November 2006 (02.11.2006), entire document especially para [0050].</td> <td>6</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X --- Y	US 5,793,774 A (Usui et al) 11 August 1998 (11.08.1998), entire document especially Figs 1,2,22 and col 4, ln 17-30; col 8, ln 1-19; col 9, ln 5-26; col 9, ln 45-63; col 16, ln 11-24; col 17, ln 7-21; col 19, ln 13-21.	7,15-18 ----- 1-6,8-14	Y	US 6,119,245 A (Hiratsuka) 12 September 2000 (12.09.2000), entire document especially col 3, ln 14-29; col 3, ln 60-67; col 5, ln 46-53; col 7, ln 31-37; col 13, ln 5-19.	1-6,8-14	Y	US 2006/0248434 A1 (Radke et al.) 02 November 2006 (02.11.2006), entire document especially para [0050].	6
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<p>Date of the actual completion of the international search 13 January 2009 (13.01.2009)</p>		<p>Date of mailing of the international search report 28 JAN 2009</p>												
<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer:  Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>												