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NOTICE OF ALLOWANCE AND FEE(S) DUE

66785 7590 04/11/2016
DAVIS WRIGHT TREMAINE LLP - SANDISK CORPORATION
IP Docketing Dept.
Davis Wright Tremaine LLP
1201 Third Avenue, Suite 2200
Seattle, WA 98101

EXAMINER

ABRAHAM, ESAW T

ART UNIT

PAPER NUMBER

2112

DATE MAILED: 04/11/2016

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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14/483,915

09/11/2014

Gautham Kumar Reddy

SN DK.920US0

6485

TITLE OF INVENTION: Selective Sampling of Data Stored in Nonvolatile Memory

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	07/11/2016

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

66785 7590 04/11/2016
DAVIS WRIGHT TREMAINE LLP - SANDISK CORPORATION
 IP Docketing Dept.
 Davis Wright Tremaine LLP
 1201 Third Avenue, Suite 2200
 Seattle, WA 98101

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14/483,915	09/11/2014	Gautham Kumar Reddy	SN DK.920US0	6485

TITLE OF INVENTION: Selective Sampling of Data Stored in Nonvolatile Memory

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	07/11/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
ABRAHAM, ESAW T	2112	714-764000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/483,915	Applicant(s) REDDY ET AL.	
	Examiner ESAW ABRAHAM	Art Unit 2112	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/11/14.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-25. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some *c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. ☒ Notice of References Cited (PTO-892) | 5. ☐ Examiner's Amendment/Comment |
| 2. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>09/19/14</u> | 6. ☒ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

/ESAW ABRAHAM/
Primary Examiner, Art Unit 2112

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. Claims 1-25 are presented for examination.

Information Disclosure Statement

3. The references listed in the information disclosure statement (IDS) submitted have been considered. The submission is in compliance with the provisions of 37 CFR 1.97. Form PTO-1449 is signed and attached hereto.

Specification

4. The specification is accepted.

Drawings

5. The formal drawings are accepted.

Allowable Subject Matter

6. Claims 1-25 are allowed. The following is an Examiner's statement of reasons for allowance:

Independent claim 1 of the present application teaches, for example, “A method of identifying high error rate data in a block-erasable nonvolatile memory comprising: (a) maintaining individual write-erase cycle counts for a plurality of blocks of the nonvolatile memory; (b) selecting a first subset of the plurality of blocks for error rate sampling, the first subset consisting of blocks with the lowest write-erase cycle counts of the plurality of blocks; (c) sampling data stored in the first subset of the plurality of blocks to estimate a first error rate for the first subset of the plurality of blocks; (d) comparing the first error rate with a first limit; (e) in response to determining that the first error rate exceeds the first limit, expanding the first subset to include additional blocks with next lowest write- erase cycle counts of the plurality of blocks; and (f) repeating steps (c) - (e)”.

The prior arts of record including the IDS filed by the applicant taken singly or in combination fail to teach, anticipate, suggest, or render obvious the foregoing limitations, “(a) maintaining individual write-erase cycle counts for a plurality of blocks of the nonvolatile memory; (b) selecting a first subset of the plurality of blocks for error rate sampling, the first subset consisting of blocks with the lowest write-erase cycle counts of the plurality of blocks; (c) sampling data stored in the first subset of the plurality of blocks to estimate a first error rate for the first subset of the plurality of blocks; (d) comparing the first error rate with a first limit; (e) in response to determining that the first error rate exceeds the first limit, expanding the first subset to include additional blocks with next lowest write- erase

cycle counts of the plurality of blocks; and (f) repeating steps (c) - (e)”. Consequently, claim 1 is allowed over the prior arts.

Independent claim 14 of the present application teaches, for example, “A block erasable nonvolatile memory system comprising a plurality of individually erasable blocks of memory cells; a write-erase cycle count circuit that maintains individual write-erase cycle counts for each of the plurality of individually erasable blocks; a data sampling circuit that samples stored data from selected blocks of the plurality of individually erasable blocks; an error rate estimation circuit that estimates an error rate from data sampled by the data sampling circuit; and a selecting circuit that selects the selected blocks for the sampling circuit to sample based on corresponding individual write-erase cycle counts maintained by the write-erase cycle count circuit, the selected blocks comprising a subset of the plurality of individually erasable blocks with the lowest individual write-erase cycle counts of the plurality of individually erasable blocks, with additional blocks added to the subset when the error rate estimation circuit indicates that the error rate is greater than a limit”.

The prior arts of record including the IDS filed by the applicant taken singly or in combination fail to teach, anticipate, suggest, or render obvious the foregoing limitations, “a data sampling circuit that samples stored data from selected blocks of the plurality of individually erasable blocks; an error rate estimation circuit that estimates an error rate from data sampled by the data sampling circuit; and a selecting circuit that selects the selected blocks for the sampling circuit to sample based on corresponding individual write-erase

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cycle counts maintained by the write-erase cycle count circuit, the selected blocks comprising a subset of the plurality of individually erasable blocks with the lowest individual write-erase cycle counts of the plurality of individually erasable blocks, with additional blocks added to the subset when the error rate estimation circuit indicates that the error rate is greater than a limit”.

Consequently, claim 14 is allowed over the prior arts.

Dependent claims depend from allowable independent claims and inherently include limitations therein and therefore are allowed as well.

Independent claim 25 of the present application teaches, for example, “A method of identifying high error rate data in a block-erasable nonvolatile memory comprising (a) maintaining individual write-erase cycle counts for a plurality of blocks of the nonvolatile memory; (b) selecting a first subset of the plurality of blocks for error rate sampling, the first subset consisting of blocks with the lowest write-erase cycle counts of the plurality of blocks; (c) sampling data stored in the first subset of the plurality of blocks by reading at least one word line from each block of the first subset of the plurality of blocks to estimate a first error rate for the first subset of the plurality of blocks; (d) comparing the first error rate with a first limit; (e) in response to determining that the first error rate exceeds the first limit, expanding the first subset to include additional blocks with next lowest write-erase cycle counts of the plurality of blocks; (f) repeating steps (c) - (e) at write erase cycle count intervals; (g) selecting a second subset of the plurality of blocks for error rate sampling, the second subset consisting of blocks with the highest write-erase cycle counts of the plurality of blocks; (h) sampling

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data stored in the second subset of the plurality of blocks by reading at least one word line in each block of the second subset of the plurality of blocks to estimate a second error rate for the second subset of the plurality of blocks; (i) comparing the second error rate with a second limit; (j) in response to determining that the second error rate exceeds the second limit, expanding the second subset to include additional blocks with the next highest write-erase cycle counts of the plurality of blocks; (k) repeating steps (h) - (j) at write erase cycle count intervals; and (1) sorting blocks of the first plurality of blocks and the second plurality of blocks in order of individual error rates and subsequently performing data recovery operations on the blocks of the first plurality of blocks and the second plurality of blocks in the order of individual error rates.

The prior arts of record including the IDS filed by the applicant taken singly or in combination fail to teach, anticipate, suggest, or render obvious the foregoing limitations, *“(a) maintaining individual write-erase cycle counts for a plurality of blocks of the nonvolatile memory; (b) selecting a first subset of the plurality of blocks for error rate sampling, the first subset consisting of blocks with the lowest write-erase cycle counts of the plurality of blocks; (c) sampling data stored in the first subset of the plurality of blocks by reading at least one word line from each block of the first subset of the plurality of blocks to estimate a first error rate for the first subset of the plurality of blocks; (d) comparing the first error rate with a first limit; (e) in response to determining that the first error rate exceeds the first limit, expanding the first subset to include additional blocks with next lowest write-erase cycle counts of the plurality of blocks; (f) repeating steps (c) - (e) at write erase cycle count intervals; (g) selecting a second subset of the plurality of blocks for error rate sampling, the*

second subset consisting of blocks with the highest write-erase cycle counts of the plurality of blocks; (h) sampling data stored in the second subset of the plurality of blocks by reading at least one word line in each block of the second subset of the plurality of blocks to estimate a second error rate for the second subset of the plurality of blocks; (i) comparing the second error rate with a second limit; (j) in response to determining that the second error rate exceeds the second limit, expanding the second subset to include additional blocks with the next highest write-erase cycle counts of the plurality of blocks; (k) repeating steps (h) - (j) at write erase cycle count intervals; and (l) sorting blocks of the first plurality of blocks and the second plurality of blocks in order of individual error rates and subsequently performing data recovery operations on the blocks of the first plurality of blocks and the second plurality of blocks in the order of individual error rates". **Consequently, claim 25 is allowed over the prior arts.**

Dependent claims depend from allowable independent claims and inherently include limitations therein and therefore are allowed as well.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esaw T. Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8am-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Esaw T Abraham/
Primary Examiner, Art Unit 2112

Notice of References Cited	Application/Control No. 14/483,915		Applicant(s)/Patent Under Reexamination REDDY ET AL.	
	Examiner ESAW ABRAHAM		Art Unit 2112	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-9,183,085 B1	11-2015	Northcott; Philip L.	G06F11/1068	1/1
*	B	US-8,082,475 B2	12-2011	Ferraiolo; Frank D.	G06F11/0724	714/704
*	C	US-8,750,042 B2	06-2014	Sharon; Eran	G11C11/5642	365/185.03
*	D	US-8,611,149 B2	12-2013	Roohparvar; Frankie F.	G11C16/10	365/185.03
*	E	US-8,793,556 B1	07-2014	Northcott; Philip L.	G06F11/1068	365/185.29
*	F	US-6,957,379 B1	10-2005	Patapoutian; Ara	G11B20/10009	360/31
*	G	US-6,035,007 A	03-2000	Khayrallah; Ali S.	H03M13/01	375/341
*	H	US-2013/0346812 A1	12-2013	Bahirat; Shirish D.	G11C16/349	714/704
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6	(reddy near2 gautham).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:26
L3	50	(yang near2 niles).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:27
L4	15	(bauche near3 alexandra).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:27
L6	14	(yang near2 niles).in. and ((error adj rate\$1) or BER)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L7	6	(yang near2 niles).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L8	1	(yang near2 niles).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L9	1	(reddy near2 gautham).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:29
L10	1	(bauche near3 alexandra).in. and ((error	US-PGPUB;	OR	OFF	2016/03/22

		adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:29
L11	1	(write-erase near2 cycle) and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:30
L12	505	(erase near2 cycle) and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:30
L13	45	(erase near2 cycle\$1) and (((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:31
L14	17	(erase near2 cycle\$1) and (estimat\$4 near10 ((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:32
L15	17	(erase near2 cycle\$1) and (estimat\$4 near5 ((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:32
L16	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:47
L18	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:48
L19	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub-blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2016/03/22 14:49

			IBM_TDB			
L20	6	(erase near3 cycle\$1 near3 count\$1) and (determin\$3 near10 ((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub-blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:50
L21	41	13 AND ((G11C16/349 OR G11C2029/0409 OR G11C11/5642 OR G11C29/50004 OR G11C2211/5641 OR G11C29/52 OR G11C16/3459 OR G11C16/04 OR G11C16/28 OR G11C2211/5634 OR G11C11/5628 OR G11C29/42 OR G11C16/26 OR G11C16/3418 OR G11C16/3436 OR G11C16/3454 OR G11C29/00 OR G11C29/028 OR G11C29/04 OR G11C29/50 OR G11C16/00 OR G11C16/3404 OR G11C16/06 OR G11C16/16 OR G11C16/30 OR G11C16/3422 OR G11C2029/1202 OR G11C2029/5004 OR G11C2211/5621 OR G11C2211/5644 OR G11C29/021 OR G11C29/025 OR G11C29/026 OR G11C29/24 OR G11C29/48 OR G11C29/50016 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR G11C11/5635 OR G11C16/0475 OR G11C16/0483 OR G11C16/10 OR G11C16/14 OR G11C16/344 OR G11C16/3445 OR G11C16/3481 OR G11C16/3495 OR G11C2029/0411 OR G11C2216/18 OR G06F11/1048 OR G06F11/1068 OR G06F11/1008 OR G06F12/0246 OR G06F11/008 OR G06F11/10 OR G06F11/1072 OR G06F11/2094 OR G06F2212/7211 OR G06F3/0616 OR G06F3/0679 OR G06F11/0727 OR G06F11/076 OR G06F11/0793 OR G06F11/1044 OR G06F12/1408 OR G06F2212/7208 OR G06F3/0634 OR G06F3/0653 OR H03M13/35 OR H03M13/353 OR H03M13/2732).CPC. AND (365/185.09 OR 365/185.03 OR 365/185.17 OR 365/185.22 OR 365/185.11 OR 365/185.12 OR 365/185.21 OR 365/185.2 OR 365/185.24 OR 365/185.29 OR 365/185.33 OR 365/185.04 OR 365/185.18 OR 365/100 OR 365/185.02 OR 365/185.05 OR 365/200 OR 365/210.1 OR 365/230.03 OR 714/704 OR 714/719 OR 714/718 OR 714/773 OR 714/E11.004 OR 714/708 OR 714/E11.03 OR 714/E11.054 OR 714/E11.056 OR 714/E11.159 OR 714/E11.172 OR 714/E11.177 OR 714/E11.179 OR 714/37 OR 714/6.11 OR 714/721 OR 714/746 OR 714/751 OR 714/752 OR 714/755 OR 714/763 OR 714/764 OR 714/774 OR 711/103 OR 711/156 OR 711/E12.103 OR 711/162 OR 711/E12.002 OR 711/E12.092 OR 711/102 OR 711/165).OCLS. AND (G06F11/00 OR G06F11/10 OR G06F12/00 OR G06F12/02 OR G06F12/16 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 15:40

		G06F11/16 OR G06F11/263 OR G06F3/06 OR G06F11/07 OR G06F11/20 OR G06F11/273 OR G06F11/30 OR G11C16/06 OR G11C29/04 OR G11C16/04 OR G11C17/00 OR G11C29/50 OR G11C11/34 OR G11C16/10 OR G11C16/16 OR G11C16/26 OR G11C29/00 OR G11C29/02 OR G11C29/12 OR G11C16/00 OR G11C16/34 OR G11C29/08 OR G11C29/10 OR G11C29/42 OR G11C29/48 OR G11C29/52 OR G11C29/54 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/15).IPCR.)				
L22	14	14 AND ((G11C16/349 OR G11C2029/0409 OR G11C11/5642 OR G11C29/50004 OR G11C2211/5641 OR G11C29/52 OR G11C16/3459 OR G11C16/04 OR G11C16/28 OR G11C2211/5634 OR G11C11/5628 OR G11C29/42 OR G11C16/26 OR G11C16/3418 OR G11C16/3436 OR G11C16/3454 OR G11C29/00 OR G11C29/028 OR G11C29/04 OR G11C29/50 OR G11C16/00 OR G11C16/3404 OR G11C16/06 OR G11C16/16 OR G11C16/30 OR G11C16/3422 OR G11C2029/1202 OR G11C2029/5004 OR G11C2211/5621 OR G11C2211/5644 OR G11C29/021 OR G11C29/025 OR G11C29/026 OR G11C29/24 OR G11C29/48 OR G11C29/50016 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR G11C11/5635 OR G11C16/0475 OR G11C16/0483 OR G11C16/10 OR G11C16/14 OR G11C16/344 OR G11C16/3445 OR G11C16/3481 OR G11C16/3495 OR G11C2029/0411 OR G11C2216/18 OR G06F11/1048 OR G06F11/1068 OR G06F11/1008 OR G06F12/0246 OR G06F11/008 OR G06F11/10 OR G06F11/1072 OR G06F11/2094 OR G06F2212/7211 OR G06F3/0616 OR G06F3/0679 OR G06F11/0727 OR G06F11/076 OR G06F11/0793 OR G06F11/1044 OR G06F12/1408 OR G06F2212/7208 OR G06F3/0634 OR G06F3/0653 OR H03M13/35 OR H03M13/353 OR H03M13/2732).CPC. AND (365/185.09 OR 365/185.03 OR 365/185.17 OR 365/185.22 OR 365/185.11 OR 365/185.12 OR 365/185.21 OR 365/185.2 OR 365/185.24 OR 365/185.29 OR 365/185.33 OR 365/185.04 OR 365/185.18 OR 365/100 OR 365/185.02 OR 365/185.05 OR 365/200 OR 365/210.1 OR 365/230.03 OR 714/704 OR 714/719 OR 714/718 OR 714/773 OR 714/E11.004 OR 714/708 OR 714/E11.03 OR 714/E11.054 OR 714/E11.056 OR 714/E11.159 OR 714/E11.172 OR 714/E11.177 OR 714/E11.179 OR 714/37 OR 714/6.11 OR 714/721 OR 714/746 OR 714/751 OR 714/752 OR 714/755 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 15:40

		714/763 OR 714/764 OR 714/774 OR 711/103 OR 711/156 OR 711/E12.103 OR 711/162 OR 711/E12.002 OR 711/E12.092 OR 711/102 OR 711/165).OCLS. AND (G06F11/00 OR G06F11/10 OR G06F12/00 OR G06F12/02 OR G06F12/16 OR G06F11/16 OR G06F11/263 OR G06F3/06 OR G06F11/07 OR G06F11/20 OR G06F11/273 OR G06F11/30 OR G11C16/06 OR G11C29/04 OR G11C16/04 OR G11C17/00 OR G11C29/50 OR G11C11/34 OR G11C16/10 OR G11C16/16 OR G11C16/26 OR G11C29/00 OR G11C29/02 OR G11C29/12 OR G11C16/00 OR G11C16/34 OR G11C29/08 OR G11C29/10 OR G11C29/42 OR G11C29/48 OR G11C29/52 OR G11C29/54 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/15).IPCR.)				
L23	6	(erase near3 cycle\$1 near3 count\$1) and (determin\$3 near10 ((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub- blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:09
L24	1990	(compar\$4 near10 ("error rate" or BER) near10 (limit\$1 or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:22
L25	120	(compar\$4 near10 (first near2 ("error rate" or BER)) near10 (limit\$1 or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:23
L26	81	(compar\$4 near5 (first near2 ("error rate" or BER)) near5 (limit\$1 or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:24
L27	15	26 AND ((G06F11/076 OR G06F11/1048 OR G06F11/1072 OR G06F11/1068 OR G06F11/008 OR G06F11/0706 OR G06F11/0781 OR G06F11/0793 OR G06F11/0727 OR G06F11/0751 OR G06F11/10 OR G06F11/1044 OR G06F2212/403 OR G11C2029/0411 OR G11C29/52 OR G11C11/5642 OR G11C16/16 OR G11C2211/5621).CPC. AND (714/704 OR 714/E11.004 OR 714/47.2 OR 714/E11.02 OR 714/E11.023 OR 714/707 OR 714/708 OR 714/E11.024 OR 714/E11.032 OR 714/43 OR 714/47.3 OR 714/48 OR 714/49 OR 714/52 OR 714/705	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:57

	OR 714/706 OR 714/721 OR 714/744 OR 714/746 OR 714/748 OR 714/758 OR 714/761 OR 714/798 OR 375/E1.004 OR 375/225 OR 375/296 OR 375/132 OR 375/136 OR 375/138 OR 375/214 OR 375/222 OR 375/224 OR 375/227 OR 375/228 OR 375/229 OR 375/232 OR 375/240 OR 375/262 OR 375/317 OR 375/328 OR 375/341 OR 375/346 OR 375/347 OR 375/350).CCLS. AND (G06F11/00 OR G06F11/07 OR G06F11/10 OR G06F11/27 OR H03M13/35 OR H03M13/00 OR H03M13/11 OR H03M13/23 OR H03M13/27 OR H03M13/47).IPCR.)				
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3/ 22/ 2016 4:58:12 PM

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6	(reddy near2 gautham).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:26
L3	50	(yang near2 niles).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:27
L4	15	(bauche near3 alexandra).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:27
L6	14	(yang near2 niles).in. and ((error adj rate\$1) or BER)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L7	6	(yang near2 niles).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L8	1	(yang near2 niles).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L9	1	(reddy near2 gautham).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:29
L10	1	(bauche near3 alexandra).in. and ((error	US-PGPUB;	OR	OFF	2016/03/22

		adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:29
L11	1	(write-erase near2 cycle) and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:30
L12	505	(erase near2 cycle) and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:30
L13	45	(erase near2 cycle\$1) and (((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:31
L14	17	(erase near2 cycle\$1) and (estimat\$4 near10 ((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:32
L15	17	(erase near2 cycle\$1) and (estimat\$4 near5 ((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:32
L16	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:47
L18	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:48
L19	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub-blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2016/03/22 14:49

			IBM_TDB			
L20	6	(erase near3 cycle\$1 near3 count\$1) and (determin\$3 near10 ((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub-blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:50
L21	41	13 AND ((G11C16/349 OR G11C2029/0409 OR G11C11/5642 OR G11C29/50004 OR G11C2211/5641 OR G11C29/52 OR G11C16/3459 OR G11C16/04 OR G11C16/28 OR G11C2211/5634 OR G11C11/5628 OR G11C29/42 OR G11C16/26 OR G11C16/3418 OR G11C16/3436 OR G11C16/3454 OR G11C29/00 OR G11C29/028 OR G11C29/04 OR G11C29/50 OR G11C16/00 OR G11C16/3404 OR G11C16/06 OR G11C16/16 OR G11C16/30 OR G11C16/3422 OR G11C2029/1202 OR G11C2029/5004 OR G11C2211/5621 OR G11C2211/5644 OR G11C29/021 OR G11C29/025 OR G11C29/026 OR G11C29/24 OR G11C29/48 OR G11C29/50016 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR G11C11/5635 OR G11C16/0475 OR G11C16/0483 OR G11C16/10 OR G11C16/14 OR G11C16/344 OR G11C16/3445 OR G11C16/3481 OR G11C16/3495 OR G11C2029/0411 OR G11C2216/18 OR G06F11/1048 OR G06F11/1068 OR G06F11/1008 OR G06F12/0246 OR G06F11/008 OR G06F11/10 OR G06F11/1072 OR G06F11/2094 OR G06F2212/7211 OR G06F3/0616 OR G06F3/0679 OR G06F11/0727 OR G06F11/076 OR G06F11/0793 OR G06F11/1044 OR G06F12/1408 OR G06F2212/7208 OR G06F3/0634 OR G06F3/0653 OR H03M13/35 OR H03M13/353 OR H03M13/2732).CPC. AND (365/185.09 OR 365/185.03 OR 365/185.17 OR 365/185.22 OR 365/185.11 OR 365/185.12 OR 365/185.21 OR 365/185.2 OR 365/185.24 OR 365/185.29 OR 365/185.33 OR 365/185.04 OR 365/185.18 OR 365/100 OR 365/185.02 OR 365/185.05 OR 365/200 OR 365/210.1 OR 365/230.03 OR 714/704 OR 714/719 OR 714/718 OR 714/773 OR 714/E11.004 OR 714/708 OR 714/E11.03 OR 714/E11.054 OR 714/E11.056 OR 714/E11.159 OR 714/E11.172 OR 714/E11.177 OR 714/E11.179 OR 714/37 OR 714/6.11 OR 714/721 OR 714/746 OR 714/751 OR 714/752 OR 714/755 OR 714/763 OR 714/764 OR 714/774 OR 711/103 OR 711/156 OR 711/E12.103 OR 711/162 OR 711/E12.002 OR 711/E12.092 OR 711/102 OR 711/165).OCLS. AND (G06F11/00 OR G06F11/10 OR G06F12/00 OR G06F12/02 OR G06F12/16 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 15:40

		G06F11/16 OR G06F11/263 OR G06F3/06 OR G06F11/07 OR G06F11/20 OR G06F11/273 OR G06F11/30 OR G11C16/06 OR G11C29/04 OR G11C16/04 OR G11C17/00 OR G11C29/50 OR G11C11/34 OR G11C16/10 OR G11C16/16 OR G11C16/26 OR G11C29/00 OR G11C29/02 OR G11C29/12 OR G11C16/00 OR G11C16/34 OR G11C29/08 OR G11C29/10 OR G11C29/42 OR G11C29/48 OR G11C29/52 OR G11C29/54 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/15).IPCR.)				
L22	14	14 AND ((G11C16/349 OR G11C2029/0409 OR G11C11/5642 OR G11C29/50004 OR G11C2211/5641 OR G11C29/52 OR G11C16/3459 OR G11C16/04 OR G11C16/28 OR G11C2211/5634 OR G11C11/5628 OR G11C29/42 OR G11C16/26 OR G11C16/3418 OR G11C16/3436 OR G11C16/3454 OR G11C29/00 OR G11C29/028 OR G11C29/04 OR G11C29/50 OR G11C16/00 OR G11C16/3404 OR G11C16/06 OR G11C16/16 OR G11C16/30 OR G11C16/3422 OR G11C2029/1202 OR G11C2029/5004 OR G11C2211/5621 OR G11C2211/5644 OR G11C29/021 OR G11C29/025 OR G11C29/026 OR G11C29/24 OR G11C29/48 OR G11C29/50016 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR G11C11/5635 OR G11C16/0475 OR G11C16/0483 OR G11C16/10 OR G11C16/14 OR G11C16/344 OR G11C16/3445 OR G11C16/3481 OR G11C16/3495 OR G11C2029/0411 OR G11C2216/18 OR G06F11/1048 OR G06F11/1068 OR G06F11/1008 OR G06F12/0246 OR G06F11/008 OR G06F11/10 OR G06F11/1072 OR G06F11/2094 OR G06F2212/7211 OR G06F3/0616 OR G06F3/0679 OR G06F11/0727 OR G06F11/076 OR G06F11/0793 OR G06F11/1044 OR G06F12/1408 OR G06F2212/7208 OR G06F3/0634 OR G06F3/0653 OR H03M13/35 OR H03M13/353 OR H03M13/2732).CPC. AND (365/185.09 OR 365/185.03 OR 365/185.17 OR 365/185.22 OR 365/185.11 OR 365/185.12 OR 365/185.21 OR 365/185.2 OR 365/185.24 OR 365/185.29 OR 365/185.33 OR 365/185.04 OR 365/185.18 OR 365/100 OR 365/185.02 OR 365/185.05 OR 365/200 OR 365/210.1 OR 365/230.03 OR 714/704 OR 714/719 OR 714/718 OR 714/773 OR 714/E11.004 OR 714/708 OR 714/E11.03 OR 714/E11.054 OR 714/E11.056 OR 714/E11.159 OR 714/E11.172 OR 714/E11.177 OR 714/E11.179 OR 714/37 OR 714/6.11 OR 714/721 OR 714/746 OR 714/751 OR 714/752 OR 714/755 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 15:40

		714/763 OR 714/764 OR 714/774 OR 711/103 OR 711/156 OR 711/E12.103 OR 711/162 OR 711/E12.002 OR 711/E12.092 OR 711/102 OR 711/165).OCLS. AND (G06F11/00 OR G06F11/10 OR G06F12/00 OR G06F12/02 OR G06F12/16 OR G06F11/16 OR G06F11/263 OR G06F3/06 OR G06F11/07 OR G06F11/20 OR G06F11/273 OR G06F11/30 OR G11C16/06 OR G11C29/04 OR G11C16/04 OR G11C17/00 OR G11C29/50 OR G11C11/34 OR G11C16/10 OR G11C16/16 OR G11C16/26 OR G11C29/00 OR G11C29/02 OR G11C29/12 OR G11C16/00 OR G11C16/34 OR G11C29/08 OR G11C29/10 OR G11C29/42 OR G11C29/48 OR G11C29/52 OR G11C29/54 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/15).IPCR.)				
L23	6	(erase near3 cycle\$1 near3 count\$1) and (determin\$3 near10 ((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub- blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:09
L24	1990	(compar\$4 near10 ("error rate" or BER) near10 (limit\$1 or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:22
L25	120	(compar\$4 near10 (first near2 ("error rate" or BER)) near10 (limit\$1 or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:23
L26	81	(compar\$4 near5 (first near2 ("error rate" or BER)) near5 (limit\$1 or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:24
L27	15	26 AND ((G06F11/076 OR G06F11/1048 OR G06F11/1072 OR G06F11/1068 OR G06F11/008 OR G06F11/0706 OR G06F11/0781 OR G06F11/0793 OR G06F11/0727 OR G06F11/0751 OR G06F11/10 OR G06F11/1044 OR G06F2212/403 OR G11C2029/0411 OR G11C29/52 OR G11C11/5642 OR G11C16/16 OR G11C2211/5621).CPC. AND (714/704 OR 714/E11.004 OR 714/47.2 OR 714/E11.02 OR 714/E11.023 OR 714/707 OR 714/708 OR 714/E11.024 OR 714/E11.032 OR 714/43 OR 714/47.3 OR 714/48 OR 714/49 OR 714/52 OR 714/705	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 16:57

	OR 714/706 OR 714/721 OR 714/744 OR 714/746 OR 714/748 OR 714/758 OR 714/761 OR 714/798 OR 375/E1.004 OR 375/225 OR 375/296 OR 375/132 OR 375/136 OR 375/138 OR 375/214 OR 375/222 OR 375/224 OR 375/227 OR 375/228 OR 375/229 OR 375/232 OR 375/240 OR 375/262 OR 375/317 OR 375/328 OR 375/341 OR 375/346 OR 375/347 OR 375/350).CCLS. AND (G06F11/00 OR G06F11/07 OR G06F11/10 OR G06F11/27 OR H03M13/35 OR H03M13/00 OR H03M13/11 OR H03M13/23 OR H03M13/27 OR H03M13/47).IPCR.)				
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3/ 22/ 2016 4:58:20 PM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Reddy et al.		
Title:	Selective Sampling of Data Stored in Nonvolatile Memory		
Application No.:	14/483,915	Filing Date:	September 11, 2014
Examiner:	Unknown	Group Art Unit:	Unknown
Docket No.:	SNDK.920US0	Conf. No.:	6485

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant(s) call(s) the documents listed on the enclosed Form PTO-1449 to the Examiner's attention in this patent application.

According to 37 C.F.R. 1.98(a)(2)(ii), copies of the U.S. Patent and Published Application Documents are not required and are therefore not enclosed. A copy of the listed Other Art is enclosed.

Citation of these documents shall not be construed as (1) an admission that the documents are prior art with respect to the invention or inventions claimed in this application, (2) a representation that a search has been made (other than as indicated by any cited document), or (3) an admission that the cited information is, or is considered to be, material to patentability as defined in § 1.56(b).

This information disclosure statement is submitted under 37 C.F.R. § 1.97(b) and consequently no fee should be required. The Commissioner is authorized, however, to charge

Attorney Docket No.: SNDK.920US0

EFS Filing

any fee that may be required, or to credit any overpayment, against Deposit Account No. 04-0258.

FILED VIA EFS

Respectfully submitted,



Peter A. Gallagher
Reg. No. 47,584

9/18/14
Date

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505 Montgomery Street, Suite 800
San Francisco, California 94111-6533
Telephone: (415) 276-6500
Facsimile: (415) 276-6599

U.S. Department of Commerce, Patent and Trademark				Atty. Docket No.		Application No.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				SNDK.920US0		14/483,915	
				Applicants		Conf. No.	
(Use several sheets if necessary)				Reddy et al.		6485	
(Form PTO-1449)				Filing Date		Art Group	
				September 11, 2014		Unknown	
U.S. Patent Documents							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	1	5,070,032	12/3/91	Yuan et al.			
	2	5,095,344	3/10/92	Harari			
	3	5,313,421	5/17/94	Guterman et al.			
	4	5,315,541	5/24/95	Harari et al.			
	5	5,343,063	8/30/94	Yuan et al.			
	6	5,570,315	10/29/96	Tanaka et al.			
	7	5,595,924	1/21/97	Yuan et al.			
	8	5,661,053	8/26/97	Yuan			
	9	5,768,192	6/16/98	Eitan			
	10	5,903,495	5/11/09	Takeuchi et al.			
	11	6,011,725	1/4/00	Eitan			
	12	6,046,935	4/4/00	Takeuchi et al.			
	13	6,222,762	4/24/01	Guterman et al.			
U.S. Published Patent Application Documents							
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	14	2012/0220088A1	8/29/13	Horn et al.			
	15	2013/0107628A1	5/2/13	Dong et al.			
	16	2013/0229846A1	9/5/13	Chien et al.			
	17	2013/0346805A1	12/26/13	Sprouse et al,			
	18	2014/0136884A1	5/15/14	Werner et al.			
Foreign Patent Documents							
							Translation
		Document	Date	Country	Class	Subclass	Yes No
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
	19	Eitan et al., "NROM: A Novel Localized Trapping, 2-Bit Nonvolatile Memory Cell," IEEE Electron Device Letters, Vol. 21, No. 11, November 2000, pp. 543-545.					
Examiner		/Esaw Abraham/		Date Considered		03/21/2016	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.							

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Sheet 1 of 1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /EA/

0028

Issue Classification 	Application/Control No. 14483915	Applicant(s)/Patent Under Reexamination REDDY ET AL.	
	Examiner ESAW ABRAHAM	Art Unit 2112	

CPC						
Symbol					Type	Version
G06F		11	/	076	F	2013-01-01
G11C		16	/	16	I	2013-01-01
G06F		11	/	0727	I	2013-01-01
G06F		11	/	0793	I	2013-01-01
G06F		11	/	1044	I	2013-01-01
G06F		11	/	1008	I	2013-01-01
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			/			
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CPC Combination Sets							
Symbol				Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
		25	
(Assistant Examiner)	(Date)		
/ESAW ABRAHAM/ Primary Examiner.Art Unit 2112	03/22/2016	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	17

Issue Classification 	Application/Control No. 14483915	Applicant(s)/Patent Under Reexamination REDDY ET AL.
	Examiner ESAW ABRAHAM	Art Unit 2112

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17												
	2		18												
	3		19												
	4		20												
	5		21												
	6		22												
	7		23												
	8		24												
	9		25												
	10														
	11														
	12														
	13														
	14														
	15														
	16														

NONE	Total Claims Allowed: 25	
(Assistant Examiner)	(Date)	
/ESAW ABRAHAM/ Primary Examiner.Art Unit 2112	03/22/2016	O.G. Print Claim(s) 1
(Primary Examiner)	(Date)	O.G. Print Figure 17

Search Notes 	Application/Control No. 14483915	Applicant(s)/Patent Under Reexamination REDDY ET AL.
	Examiner ESAW ABRAHAM	Art Unit 2112

CPC- SEARCHED		
Symbol	Date	Examiner
G11C 29/00, G06F 11/1008, G06F 11/1076, G06F 11/1044, G06F 11/1068	03/22/16	EA

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
East text search	03/22/16	EA
CPC search	03/22/16	EA
Inventor search	03/22/16	EA

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
PGPUG east for claim search		03/22/16	EA

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 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 6485

SERIAL NUMBER 14/483,915	FILING or 371(c) DATE 09/11/2014 RULE	CLASS 714	GROUP ART UNIT 2112	ATTORNEY DOCKET NO. SNDK.920US0		
APPLICANTS SanDisk Technologies Inc., Plano, TX; INVENTORS Gautham Kumar Reddy, San Jose, CA; Niles Yang, Mountain View, CA; Alexandra Bauche, San Jose, CA; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 09/17/2014						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and Acknowledged <u>/ESAW T ABRAHAM/</u> Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 15	TOTAL CLAIMS 25	INDEPENDENT CLAIMS 3
ADDRESS DAVIS WRIGHT TREMAINE LLP - SANDISK CORPORATION IP Docketing Dept. Davis Wright Tremaine LLP 1201 Third Avenue, Suite 2200 Seattle, WA 98101 UNITED STATES						
TITLE Selective Sampling of Data Stored in Nonvolatile Memory						
FILING FEE RECEIVED 2000	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit			

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6	(reddy near2 gautham).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:26
L3	50	(yang near2 niles).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:27
L4	15	(bauche near3 alexandra).in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:27
L6	14	(yang near2 niles).in. and ((error adj rate\$1) or BER)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L7	6	(yang near2 niles).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L8	1	(yang near2 niles).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:28
L9	1	(reddy near2 gautham).in. and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:29
L10	1	(bauche near3 alexandra).in. and ((error adj	US-PGPUB;	OR	OFF	2016/03/22

		rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:29
L11	1	(write-erase near2 cycle) and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:30
L12	505	(erase near2 cycle) and ((error adj rate\$1) or BER) and eras\$4 and cycle\$1 and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:30
L13	45	(erase near2 cycle\$1) and (((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:31
L14	17	(erase near2 cycle\$1) and (estimat\$4 near10 ((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:32
L15	17	(erase near2 cycle\$1) and (estimat\$4 near5 ((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:32
L16	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:47
L18	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:48
L19	21	(erase near3 cycle\$1 near3 count\$1) and (((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub-blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2016/03/22 14:49

			IBM_TDB			
L20	6	(erase near3 cycle\$1 near3 count\$1) and (determin\$3 near10 ((error adj rate\$1) or BER) near10 sampl\$3) and (limit\$1 or threshold) and (pages or blocks or sub-blocks "subset of blocks")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 14:50
L21	41	13 AND ((G11C16/349 OR G11C2029/0409 OR G11C11/5642 OR G11C29/50004 OR G11C2211/5641 OR G11C29/52 OR G11C16/3459 OR G11C16/04 OR G11C16/28 OR G11C2211/5634 OR G11C11/5628 OR G11C29/42 OR G11C16/26 OR G11C16/3418 OR G11C16/3436 OR G11C16/3454 OR G11C29/00 OR G11C29/028 OR G11C29/04 OR G11C29/50 OR G11C16/00 OR G11C16/3404 OR G11C16/06 OR G11C16/16 OR G11C16/30 OR G11C16/3422 OR G11C2029/1202 OR G11C2029/5004 OR G11C2211/5621 OR G11C2211/5644 OR G11C29/021 OR G11C29/025 OR G11C29/026 OR G11C29/24 OR G11C29/48 OR G11C29/50016 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR G11C11/5635 OR G11C16/0475 OR G11C16/0483 OR G11C16/10 OR G11C16/14 OR G11C16/344 OR G11C16/3445 OR G11C16/3481 OR G11C16/3495 OR G11C2029/0411 OR G11C2216/18 OR G06F11/1048 OR G06F11/1068 OR G06F11/1008 OR G06F12/0246 OR G06F11/008 OR G06F11/10 OR G06F11/1072 OR G06F11/2094 OR G06F2212/7211 OR G06F3/0616 OR G06F3/0679 OR G06F11/0727 OR G06F11/076 OR G06F11/0793 OR G06F11/1044 OR G06F12/1408 OR G06F2212/7208 OR G06F3/0634 OR G06F3/0653 OR H03M13/35 OR H03M13/353 OR H03M13/2732).CPC. AND (365/185.09 OR 365/185.03 OR 365/185.17 OR 365/185.22 OR 365/185.11 OR 365/185.12 OR 365/185.21 OR 365/185.2 OR 365/185.24 OR 365/185.29 OR 365/185.33 OR 365/185.04 OR 365/185.18 OR 365/100 OR 365/185.02 OR 365/185.05 OR 365/200 OR 365/210.1 OR 365/230.03 OR 714/704 OR 714/719 OR 714/718 OR 714/773 OR 714/E11.004 OR 714/708 OR 714/E11.03 OR 714/E11.054 OR 714/E11.056 OR 714/E11.159 OR 714/E11.172 OR 714/E11.177 OR 714/E11.179 OR 714/37 OR 714/6.11 OR 714/721 OR 714/746 OR 714/751 OR 714/752 OR 714/755 OR 714/763 OR 714/764 OR 714/774 OR 711/103 OR 711/156 OR 711/E12.103 OR 711/162 OR 711/E12.002 OR 711/E12.092 OR 711/102 OR 711/165).CCLS. AND (G06F11/00 OR G06F11/10 OR G06F12/00 OR G06F12/02 OR G06F12/16 OR G06F11/16 OR G06F11/263 OR G06F3/06	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 15:40

		OR G06F11/07 OR G06F11/20 OR G06F11/273 OR G06F11/30 OR G11C16/06 OR G11C29/04 OR G11C16/04 OR G11C17/00 OR G11C29/50 OR G11C11/34 OR G11C16/10 OR G11C16/16 OR G11C16/26 OR G11C29/00 OR G11C29/02 OR G11C29/12 OR G11C16/00 OR G11C16/34 OR G11C29/08 OR G11C29/10 OR G11C29/42 OR G11C29/48 OR G11C29/52 OR G11C29/54 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/15).IPCR.)				
L22	14	14 AND ((G11C16/349 OR G11C2029/0409 OR G11C11/5642 OR G11C29/50004 OR G11C2211/5641 OR G11C29/52 OR G11C16/3459 OR G11C16/04 OR G11C16/28 OR G11C2211/5634 OR G11C11/5628 OR G11C29/42 OR G11C16/26 OR G11C16/3418 OR G11C16/3436 OR G11C16/3454 OR G11C29/00 OR G11C29/028 OR G11C29/04 OR G11C29/50 OR G11C16/00 OR G11C16/3404 OR G11C16/06 OR G11C16/16 OR G11C16/30 OR G11C16/3422 OR G11C2029/1202 OR G11C2029/5004 OR G11C2211/5621 OR G11C2211/5644 OR G11C29/021 OR G11C29/025 OR G11C29/026 OR G11C29/24 OR G11C29/48 OR G11C29/50016 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR G11C11/5635 OR G11C16/0475 OR G11C16/0483 OR G11C16/10 OR G11C16/14 OR G11C16/344 OR G11C16/3445 OR G11C16/3481 OR G11C16/3495 OR G11C2029/0411 OR G11C2216/18 OR G06F11/1048 OR G06F11/1068 OR G06F11/1008 OR G06F12/0246 OR G06F11/008 OR G06F11/10 OR G06F11/1072 OR G06F11/2094 OR G06F2212/7211 OR G06F3/0616 OR G06F3/0679 OR G06F11/0727 OR G06F11/076 OR G06F11/0793 OR G06F11/1044 OR G06F12/1408 OR G06F2212/7208 OR G06F3/0634 OR G06F3/0653 OR H03M13/35 OR H03M13/353 OR H03M13/2732).CPC. AND (365/185.09 OR 365/185.03 OR 365/185.17 OR 365/185.22 OR 365/185.11 OR 365/185.12 OR 365/185.21 OR 365/185.2 OR 365/185.24 OR 365/185.29 OR 365/185.33 OR 365/185.04 OR 365/185.18 OR 365/100 OR 365/185.02 OR 365/185.05 OR 365/200 OR 365/210.1 OR 365/230.03 OR 714/704 OR 714/719 OR 714/718 OR 714/773 OR 714/E11.004 OR 714/708 OR 714/E11.03 OR 714/E11.054 OR 714/E11.056 OR 714/E11.159 OR 714/E11.172 OR 714/E11.177 OR 714/E11.179 OR 714/37 OR 714/6.11 OR 714/721 OR 714/746 OR 714/751 OR 714/752 OR 714/755 OR 714/763 OR 714/764 OR 714/774 OR 711/103 OR 711/156 OR 711/E12.103 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/22 15:40

	711/162 OR 711/E12.002 OR 711/E12.092 OR 711/102 OR 711/165).CCLS. AND (G06F11/00 OR G06F11/10 OR G06F12/00 OR G06F12/02 OR G06F12/16 OR G06F11/16 OR G06F11/263 OR G06F3/06 OR G06F11/07 OR G06F11/20 OR G06F11/273 OR G06F11/30 OR G11C16/06 OR G11C29/04 OR G11C16/04 OR G11C17/00 OR G11C29/50 OR G11C11/34 OR G11C16/10 OR G11C16/16 OR G11C16/26 OR G11C29/00 OR G11C29/02 OR G11C29/12 OR G11C16/00 OR G11C16/34 OR G11C29/08 OR G11C29/10 OR G11C29/42 OR G11C29/48 OR G11C29/52 OR G11C29/54 OR G11C29/56 OR G11C7/14 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/15).I PCR.)				
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3/ 22/ 2016 3:41:21 PM

EAST Search History

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L25	0	((estimat\$4 near5 error near5 rate\$1) and count\$3 and threshold and sampl\$3 and ((erase or erasable) near5 block\$1)).clm.	US-PGPUB; USPAT	OR	OFF	2016/03/21 17:38
L26	0	((error near2 rate\$1) same count\$3 same threshold) and sampl\$3 and estimat\$4 and (erase near3 cycle\$1)).clm.	US-PGPUB; USPAT	OR	OFF	2016/03/21 17:38

3/ 21/ 2016 5:40:53 PM

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	60	("20120220088" "20130107628" "20130229846" "20130346805" "20140136884" "5070032" "5095344" "5313421" "5315541" "5343063" "5570315" "5595924" "5661053" "5768192" "5903495" "6011725" "6046935" "6222762").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 15:14
L2	2	("20120220088" "20130107628" "20130229846" "20130346805" "20140136884" "5070032" "5095344" "5313421" "5315541" "5343063" "5570315" "5595924" "5661053" "5768192" "5903495" "6011725" "6046935" "6222762").PN. and ("error rate" or BER)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 15:15
L3	8	("20120220088" "20130107628" "20130229846" "20130346805" "20140136884" "5070032" "5095344" "5313421" "5315541" "5343063" "5570315" "5595924" "5661053" "5768192" "5903495" "6011725" "6046935" "6222762").PN. and error\$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 15:15
L4	1799	(error near2 rate\$1) same count\$3 same threshold	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:25
L5	646	((error near2 rate\$1) same count\$3 same threshold) and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:27
L6	355	((error near2 rate\$1) same count\$3 same threshold) and sampl\$3 and estimat\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:27
L7	53	((error near2 rate\$1) same count\$3 same threshold) and sampl\$3 and estimat\$4 and (erase near3 cycle\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:28

L9	37	(estimat\$4 near5 error near5 rate\$1) and count\$3 and threshold and sampl\$3 and estimat\$4 and (erase near3 cycle\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:29
L10	37	(estimat\$4 near5 error near5 rate\$1) and count\$3 and threshold and sampl\$3 and estimat\$4 and ((erase or erasable) near5 block\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:33
L11	37	(estimat\$4 near5 error near5 rate\$1) and count\$3 and threshold and sampl\$3 and ((erase or erasable) near5 block\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:33
L13	280	(error\$1 near5 rate\$1) and count\$3 and threshold and sampl\$3 and ((erase or erasable) near5 block\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:33
L14	140	((estimat\$3 or detect\$3 or check\$3 or determin\$3 or comput\$3 or calculat\$3) near5 (error\$1 near5 rate\$1)) and count\$3 and threshold and sampl\$3 and ((erase or erasable) near5 block\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:35
L15	140	((estimat\$3 or detect\$3 or check\$3 or determin\$3 or comput\$3 or calculat\$3) near5 (error\$1 near5 rate\$1)) and count\$3 and threshold and sampl\$3 and ((erase or erasable) near5 block\$1) and count\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:36
L16	135	((estimat\$3 or detect\$3 or check\$3 or determin\$3 or comput\$3 or calculat\$3) near5 (error\$1 near5 rate\$1)) and count\$3 and threshold and sampl\$3 and ((erase or erasable) near5 block\$1) and (ECC or (error adj1 correct\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:37
L17	0	"error rate < "	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:48
L18	0	"error rate > "	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2016/03/21 16:49

			DERWENT; IBM_TDB			
L19	19762	("error rate" near3 (blow or greater or higher or lower or level or above or "<" or ">"))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:50
L20	7483	((("error rate" near3 (blow or greater or higher or lower or level or above or "<" or ">")) and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:51
L21	4143	((("error rate" near3 (exceed\$3 or blow or greater or higher or lower or above or "<" or ">")) near3 (level or threshold))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:57
L22	1264	((("error rate" near3 (exceed\$3 or blow or greater or higher or lower or above or "<" or ">")) near3 (level or threshold)) and sampl\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:57
L23	187	((("error rate" near3 (exceed\$3 or blow or greater or higher or lower or above or "<" or ">")) near3 (level or threshold)) and sampl\$3 and ECC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:58
L24	65	((("error rate" near3 (exceed\$3 or blow or greater or higher or lower or above or "<" or ">")) near3 (level or threshold)) and sampl\$3 and ECC and eras\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 16:58
L27	43	24 AND ((G11C2211/5641 OR G11C11/5642 OR G11C16/26 OR G11C13/0033 OR G11C13/0035 OR G11C29/50004 OR G11C11/5628 OR G11C13/0002 OR G11C16/06 OR G11C16/349 OR G11C29/021 OR G11C29/028 OR G11C29/42 OR G11C7/04 OR G11C16/00 OR G11C16/3418 OR G11C16/3454 OR G11C16/3459 OR G11C16/0483 OR G11C16/10 OR G11C2029/0411 OR G11C29/00 OR G11C29/04 OR G11C7/14 OR G11C11/5621 OR G11C2211/5621 OR G11C11/56 OR G11C13/0069 OR G11C16/28 OR G11C16/3404 OR G11C16/3495 OR G11C2029/1202 OR G11C2211/5634 OR G11C29/02 OR G11C29/022 OR G11C29/025 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 17:39

		G11C29/52 OR G11C5/04 OR G11C8/08 OR G11C16/3481 OR G11C2029/0409 OR G11C2213/71 OR G11C5/02 OR G11C8/12 OR G06F11/1068 OR G06F11/1048 OR G06F11/076 OR G06F11/1008 OR G06F11/1012 OR G06F11/1072 OR G06F11/073 OR G06F11/2007 OR G06F11/1044 OR G06F11/108 OR G06F11/0724 OR G06F11/1004 OR G06F11/167 OR G06F11/00 OR G06F11/0793 OR G06F11/106 OR G06F11/1076 OR G06F12/0246 OR G06F2211/1057 OR G06F2212/1016 OR G06F2212/403 OR G06F2212/7205 OR G06F2212/7208 OR H03M13/01 OR H03M13/1102 OR H03M13/1515 OR H03M13/152 OR H03M13/2906 OR H03M13/2927 OR H03M13/2945 OR H03M13/2963 OR H03M13/35 OR H03M13/39).CPC. AND (714/704 OR 714/773 OR 714/719 OR 714/718 OR 714/763 OR 714/774 OR 714/E11.004 OR 714/708 OR 714/712 OR 714/764 OR 714/E11.002 OR 714/E11.006 OR 714/E11.03 OR 714/E11.032 OR 714/E11.04 OR 714/E11.054 OR 714/E11.056 OR 714/E11.172 OR 714/49 OR 714/6.24 OR 714/721 OR 714/746 OR 714/752 OR 714/766 OR 714/794 OR 714/800 OR 365/185.03 OR 365/185.17 OR 365/185.12 OR 365/185.18 OR 365/185.09 OR 365/185.11 OR 365/185.29 OR 365/185.22 OR 365/185.24 OR 365/106 OR 365/148 OR 365/185.04 OR 365/185.05 OR 365/185.21 OR 365/185.33 OR 365/200 OR 365/230.03).CCLS. AND (G06F11/00 OR G06F11/10 OR G06F11/07 OR G06F11/08 OR G06F11/14 OR G06F11/16 OR G06F11/30 OR G06F12/00 OR G06F11/273 OR G06F12/02 OR G06F12/16 OR G11C16/06 OR G11C29/42 OR G11C13/00 OR G11C16/04 OR G11C16/26 OR G11C29/00 OR G11C29/04 OR G11C16/00 OR G11C29/02 OR G11C29/54 OR G11C11/56 OR G11C16/10 OR G11C29/12 OR G11C29/50 OR G11C29/52 OR G11C11/34 OR G11C16/16 OR G11C16/34 OR G11C7/04 OR G11C7/14 OR G11C8/00 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/01 OR H03M13/15 OR H03M13/39).IPCR.)				
L28	27	11 AND ((G11C2211/5641 OR G11C11/5642 OR G11C16/26 OR G11C13/0033 OR G11C13/0035 OR G11C29/50004 OR G11C11/5628 OR G11C13/0002 OR G11C16/06 OR G11C16/349 OR G11C29/021 OR G11C29/028 OR G11C29/42 OR G11C7/04 OR G11C16/00 OR G11C16/3418 OR G11C16/3454 OR	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2016/03/21 17:40

G11C16/3459 OR G11C16/0483 OR G11C16/10 OR G11C2029/0411 OR G11C29/00 OR G11C29/04 OR G11C7/14 OR G11C11/5621 OR G11C2211/5621 OR G11C11/56 OR G11C13/0069 OR G11C16/28 OR G11C16/3404 OR G11C16/3495 OR G11C2029/1202 OR G11C2211/5634 OR G11C29/02 OR G11C29/022 OR G11C29/025 OR G11C29/52 OR G11C5/04 OR G11C8/08 OR G11C16/3481 OR G11C2029/0409 OR G11C2213/71 OR G11C5/02 OR G11C8/12 OR G06F11/1068 OR G06F11/1048 OR G06F11/076 OR G06F11/1008 OR G06F11/1012 OR G06F11/1072 OR G06F11/073 OR G06F11/2007 OR G06F11/1044 OR G06F11/108 OR G06F11/0724 OR G06F11/1004 OR G06F11/167 OR G06F11/00 OR G06F11/0793 OR G06F11/106 OR G06F11/1076 OR G06F12/0246 OR G06F2211/1057 OR G06F2212/1016 OR G06F2212/403 OR G06F2212/7205 OR G06F2212/7208 OR H03M13/01 OR H03M13/1102 OR H03M13/1515 OR H03M13/152 OR H03M13/2906 OR H03M13/2927 OR H03M13/2945 OR H03M13/2963 OR H03M13/35 OR H03M13/39).CPC. AND (714/704 OR 714/773 OR 714/719 OR 714/718 OR 714/763 OR 714/774 OR 714/E11.004 OR 714/708 OR 714/712 OR 714/764 OR 714/E11.002 OR 714/E11.006 OR 714/E11.03 OR 714/E11.032 OR 714/E11.04 OR 714/E11.054 OR 714/E11.056 OR 714/E11.172 OR 714/49 OR 714/6.24 OR 714/721 OR 714/746 OR 714/752 OR 714/766 OR 714/794 OR 714/800 OR 365/185.03 OR 365/185.17 OR 365/185.12 OR 365/185.18 OR 365/185.09 OR 365/185.11 OR 365/185.29 OR 365/185.22 OR 365/185.24 OR 365/106 OR 365/148 OR 365/185.04 OR 365/185.05 OR 365/185.21 OR 365/185.33 OR 365/200 OR 365/230.03).CCLS. AND (G06F11/00 OR G06F11/10 OR G06F11/07 OR G06F11/08 OR G06F11/14 OR G06F11/16 OR G06F11/30 OR G06F12/00 OR G06F11/273 OR G06F12/02 OR G06F12/16 OR G11C16/06 OR G11C29/42 OR G11C13/00 OR G11C16/04 OR G11C16/26 OR G11C29/00 OR G11C29/04 OR G11C16/00 OR G11C29/02 OR G11C29/54 OR G11C11/56 OR G11C16/10 OR G11C29/12 OR G11C29/50 OR G11C29/52 OR G11C11/34 OR G11C16/16 OR G11C16/34 OR G11C7/04 OR G11C7/14 OR G11C8/00 OR G11C8/08 OR H03M13/00 OR H03M13/05 OR H03M13/01 OR H03M13/15 OR H03M13/39).IPC.)				
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3/ 21/ 2016 5:40:32 PM

<i>Index of Claims</i> 	Application/Control No. 14483915	Applicant(s)/Patent Under Reexamination REDDY ET AL.
	Examiner ESAW ABRAHAM	Art Unit 2112

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	03/22/2016								
	1	=								
	2	=								
	3	=								
	4	=								
	5	=								
	6	=								
	7	=								
	8	=								
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