



- (51) **International Patent Classification:**
G06F 11/00 (2006.01)
- (21) **International Application Number:**
PCT/US2012/023977
- (22) **International Filing Date:**
6 February 2012 (06.02.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/487,250 17 May 2011 (17.05.2011) US
13/285,945 31 October 2011 (31.10.2011) US
- (71) **Applicants (for all designated States except US):** **MAX-LINEAR, INC.** [US/US]; 2051 Palomar Airport Road, Suite 100, Carlsbad, CA 92011 (US). **GULAK, Glenn** [CA/CA]; 907-2287 Lake Shore Blvd. W., Toronto, Ontario M8V3Y1 (CA).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **LING, Curtis** [US/US]; 2051 Palomar Airport Road, Suite 100, Carlsbad, NY 92011 (US). **SMOLYAKOV, Vadim** [CA/CA]; 3062 Joel Kerbel Place, Mississauga, Ontario L4Y0A9 (CA). **GALLAGHER, Timothy** [US/US]; 840 Val Sereno Drive, Encinitas, CA 92024 (US).
- (74) **Agent:** **GILLES, Chad M.**; McAndrews Held and Malloy, 500 W. Madison, Suite 3400, Chicago, IL 60661 (US).
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report (Art. 21(3))

(54) **Title:** METHOD AND APPARATUS FOR MEMORY POWER AND/OR AREA REDUCTION

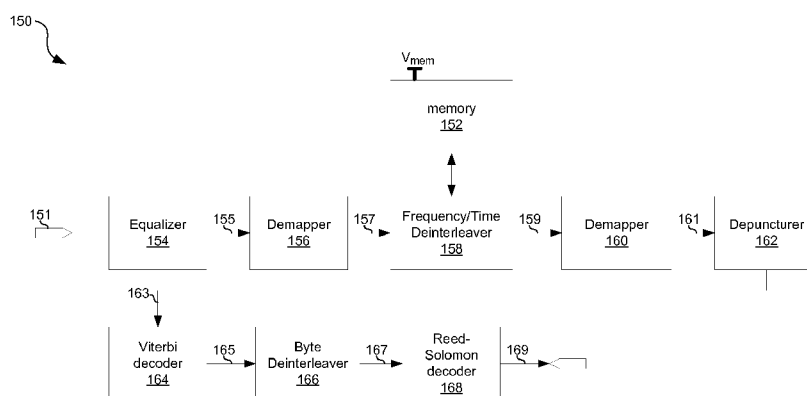


FIG. 1B

(57) **Abstract:** A method and apparatus for memory power and/or area reduction. An array of memory cells may be scanned to detect faulty memory cells, if any, in the array. A supply voltage V_{mem} applied to the array of memory cells may be controlled based on a result of the scan, and based on a sensitivity coefficient of one, or more, of the array of memory cells. The sensitivity coefficient may indicate an impact that the one, or more, of the array of memory cells being faulty may have on the performance of a device that reads and writes data to the memory array. Additionally or alternatively, the physical dimensions of the memory cells may be determined based on the sensitivity coefficient(s) and/or based on a number of faulty memory cells that can be tolerated in the array of memory cells.

