

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 June 2005 (02.06.2005)

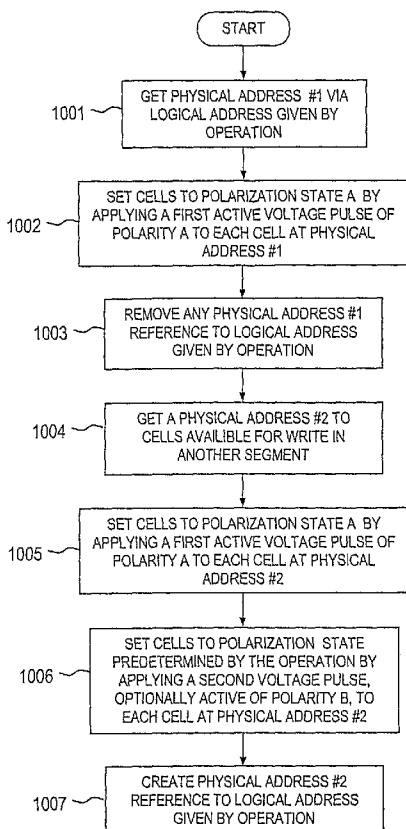
PCT

(10) International Publication Number
WO 2005/050657 A1

- (51) International Patent Classification⁷: **G11C 8/06**, 8/18, 11/22
- (21) International Application Number: PCT/NO2004/000361
- (22) International Filing Date: 24 November 2004 (24.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 20035225 24 November 2003 (24.11.2003) NO
- (71) Applicant (for all designated States except US): **THIN FILM ELECTRONICS ASA** [NO/NO]; P.O. Box 1872 Vik, N-0124 Oslo (NO).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **HAMBERG, Per** [SE/SE]; Framnäs, S-590 40 Kisa (SE). **KARLSSON, Christer** [SE/SE]; Långgatan 81, S-589 55 Linköping (SE). **NORDAL, Per-Erik** [NO/NO]; Båstadryggen 19, N-1387 Asker (NO). **OJAKANGAS, Nicklas** [SE/SE]; Norgvegatan 12, S-582 31 Linköping (SE). **CARLSSON, Johan** [SE/SE]; Ekholmsvägen 219, S-589 29 Linköping (SE). **GUDESEN, Hans, Gude** [NO/BE]; 17 Rue Fulton, B-1000 Brussels (BE).
- (74) Common Representative: **LEISTAD, Geirr, I.**; Thin Film Electronics ASA, P.O. Box 1872 Vik, N-0124 Oslo (NO).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

[Continued on next page]

(54) Title: METHOD FOR OPERATING A DATA STORAGE APPARATUS EMPLOYING PASSIVE MATRIX ADDRESSING



(57) Abstract: In a method for reducing detrimental phenomena related to disturb voltages in a data storage apparatus employing passive matrix addressing, particularly a memory device or a sensor device, an application of electric potentials conforming to an addressing operation is generally controlled in a time-coordinated manner according to a voltage pulse protocol. In an addressing operation a data storage cell is set to a first polarization state by means of a first active voltage pulse and then, dependent on the voltage pulse protocol, a second voltage pulse which may be a second active voltage pulse of opposite polarity to that of the first voltage pulse, is applied and used for switching the data storage cell to a second polarization state. The addressed cell is thus set to a predetermined polarization state as specified by the addressing operation. The data storage cells of the apparatus are provided in two or more electrically separated segments such that each segment comprises a separate physical address space for the apparatus. In an addressing operation the data are directed to a segment that is selected based on information on prior and/or scheduled applications of active voltage pulses to the segments.

WO 2005/050657 A1



MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.