

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 November 2006 (16.11.2006)

PCT

(10) International Publication Number
WO 2006/122097 A3

(51) International Patent Classification:
G09G 3/36 (2006.01)

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, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2006/017867

(22) International Filing Date: 9 May 2006 (09.05.2006)

(25) Filing Language: English

(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, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(26) Publication Language: English

(30) Priority Data:
11/124,838 9 May 2005 (09.05.2005) US

(71) Applicant (for all designated States except US): TEXAS INSTRUMENTS INCORPORATED [US/US]; P.O. Box 655474, Mail Station 3999, Dallas, TX 75265-5474 (US).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

(72) Inventor; and

(75) Inventor/Applicant (for US only): ROSENQUIST, Rusell, M. [US/US]; 8220 Chambra Ct., Plano, TX 75025 (US).

Published:

- with international search report

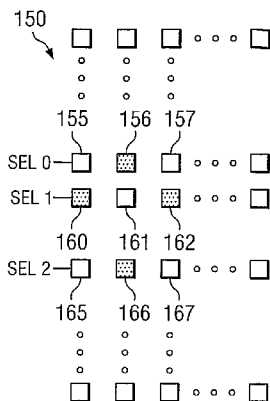
(74) Agents: FRANZ, Warren, L. et al.; Texas Instruments incorporated, Deputy General Patent Counsel, P.O. Box 655474, M/S 3999, Dallas, TX 75265-5474 (US).

(88) Date of publication of the international search report:
15 February 2007

(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,

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.

(54) Title: DATA-DEPENDENT, LOGIC-LEVEL DRIVE SCHEME FOR DRIVING LCD PANELS



(57) Abstract: System and method for driving an LCD (150) using a data-dependent, logic-level drive scheme. A preferred embodiment comprises determining a desired state of each pixel (155-157) in an LCD pixel segment, deriving a drive waveform based upon the state of all pixels in the LCD pixel segment, and outputting the drive waveform to the LCD pixel segment. By using the states of all the pixels in the LCD pixel segment in the determination of the drive waveform, it is possible to increase the on and off voltage to help improve display quality.

WO 2006/122097 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/17867

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **G09G 03/36**

USPC: 345/96,204,205,208,210,100-104,502,520,506,87,94,99,691,150;359/291,252
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)
U.S. : 345/96,204,205,208,210,100-104,502,520,506,87,94,99,691,150; 359/291,252

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0193491 A1 (Lawrence et al.) 16 October 2003 (16.10.2003) page 2, paragraphs 17-20, page 1, paragraph 5, page 3 paragraph 49, page 4, paragraph 72, page 5, paragraphs 76,80,81, page 6, paragraph 104, page 7, paragraphs 104-109, page 8, paragraphs 111-118, page 9, paragraph 119-123	1-9
Y	US 2003/0103046 A1 (Rogers et al.) 05 June 2003 (05.06.2003) page 1, paragraphs 06,07 page 2, paragraph 27, page 3, paragraphs 34-36, page 4, paragraph 55 page 5, paragraphs 56-59, 63, page 6, paragraphs 64-67, page 7, paragraphs 71-79, page 8, paragraphs 79-86, page 9, paragraphs 104, page 10, paragraphs 4, 19-22, page 11, paragraphs 36-34	1-9
Y	US 6,407,727 B1 (Pangger) 22 June 2002 (22.06.2002) Col. 2, Lines 35-67, Col. 3, Lines 1-67, Col. 4, Lines 1-47	1-9
Y	US 6,108,122 (Ulrich et al.) 22 August 2000 (22.08.2000) Col. 1, lines 20-49, Col. 6, lines 6-67, Col. 7, Line 1 to col. 8, line 67, Col. 9, Lines 1-3	1,2

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"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
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search: 23 September 2006 (23.09.2006)
Date of mailing of the international search report: 13 NOV 2006

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
Authorized officer: Prabodh M. Dharia
Telephone No. 571-272-7668

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US06/17867

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/0024391 A1 03 February 2005 (03.02.2005) page 2, paragraphs 26-35, page 3, paragraphs 36-47, page 4, paragraphs 48-56, page 5, paragraphs 56-68, page 6, paragraphs 68-76	9-11