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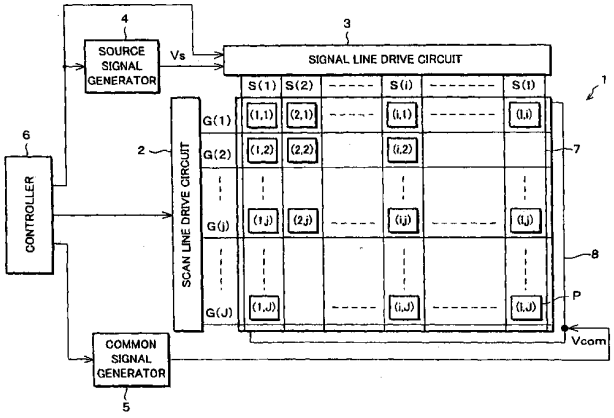
(54) Active matrix liquid crystal display and method of driving the same

(57) An active matrix liquid crystal display drives liquid crystal by writing through TFTs, etc. a source signal from a signal line drive circuit to display electrodes in display cells on a matrix substrate and applying a common signal supplied from a common signal generator to common electrodes on an opposite substrate, the common signal changing in polarity in each frame. After scanning is completed for scan lines corresponding to one frame, a controller controls the interval between scan periods and the cycle of change in polarity of the common signal so as to provide a non-scan period that is longer than the scan period. The provision of the non-scan period extends the duration in which a specified voltage is retained by the display cell. This reduces the effects of variations in retained voltages caused by parasitic capacitance which develops in reflective electrode structures in which the display electrodes partly overlook scan lines and signal lines. Thus, in frame inversion drive, differences in brightness between the top and bottom of the display screen are reduced, and display quality is improved.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 01 12 3775

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 694 145 A (SUGAWA SHIGETOSHI ET AL) 2 December 1997 (1997-12-02) * column 2, line 16 - column 4, line 32 * * column 7, line 1 - column 10, line 27; figures 6,8 * ---	1-14	G09G3/36
A	US 5 892 494 A (YOSHIDA TOSHIHIKO ET AL) 6 April 1999 (1999-04-06) * column 1, line 50 - column 2, line 9 * * column 3, line 36 - column 4, line 27; figures 10-12 * ---	1-14	
A	HIROO HORI: "KEY ISSUES REGARDING HIGH-INFORMATION-CONTENT TFT-LCDS FOR DATA GRAPHICS" PROCEEDINGS OF THE SID, SOCIETY FOR INFORMATION DISPLAY. PLAYA DEL REY, CA, US, vol. 32, no. 4, 1991, pages 331-337, XP000281855 Paragraph E. "Effects of TFT Off-Current on Electro-Optical Characteristics" * page 333 - page 334; figures 3-6 * ---	1-14	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G09G
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	20 February 2004	Kunze, H

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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L : document cited for other reasons

& : member of the same patent family, corresponding document

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 12 3775

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20-02-2004

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	有源矩阵液晶显示器及其驱动方法		
公开(公告)号	EP1197790A3	公开(公告)日	2004-04-14
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其他公开文献	EP1197790B9 EP1197790B1 EP1197790A2		
外部链接	Espacenet		

摘要(译)

有源矩阵液晶显示器通过TFT等写入来自信号线驱动电路的源信号来驱动液晶，以在矩阵基板上的显示单元中显示电极，并将从公共信号发生器提供的公共信号施加到公共电极上。在相对基板上，公共信号在每帧中改变极性。在对应于一帧的扫描线完成扫描之后，控制器控制扫描周期之间的间隔和公共信号的极性变化周期，以便提供比扫描周期长的非扫描周期。非扫描周期的提供延长了显示单元保持指定电压的持续时间。这减小了由反射电极结构中产生的寄生电容引起的保持电压变化的影响，其中显示电极部分地忽略扫描线和信号线。因此，在帧反转驱动中，显示屏的顶部和底部之间的亮度差异减小，并且显示质量得到改善。

FIG. 1