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(71) Applicant: **Sony Corporation**
Tokyo 108-0075 (JP)

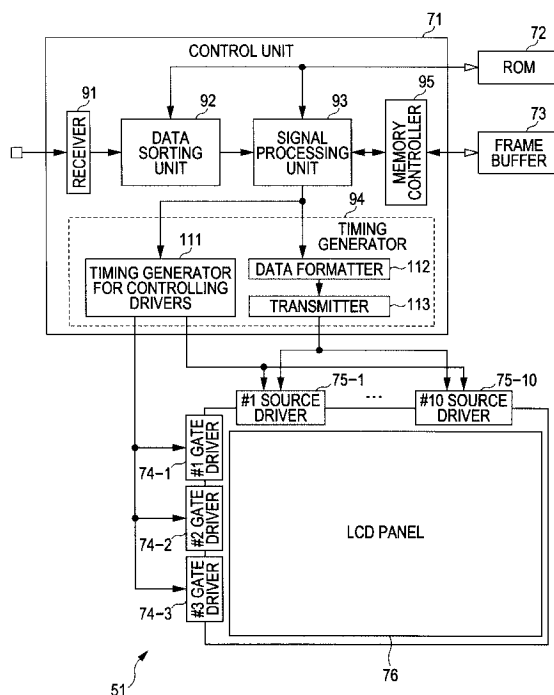
(72) Inventors:
• **Kamada, Tsuyoshi**
Tokyo 108-0075 (JP)
• **Suzuki, Toshiaki**
Tokyo 108-0075 (JP)
• **Nukiyama, Kazuhiro**
Tokyo 108-0075 (JP)

(74) Representative: **Beder, Jens**
Mitscherlich & Partner
Patent-und Rechtsanwälte
Sonnenstraße 33
80331 München (DE)

(54) **Liquid crystal display device, liquid crystal display method, display control device, and display control method**

(57) An LCD device includes a display unit including pixels having a multi-pixel structure; first and second driving units that drive scanning and signal lines, respectively; an image acquisition unit, and a control unit. Each of the pixels includes first and second pixels, and first and second pixels of pixels are connected to two corresponding signal lines in a checkerboard manner. The first driving unit is controlled to repeatedly scan a first sub-frame of odd lines and a second sub-frame of even lines, and the second driving unit is controlled in such a manner that the polarity of the first pixel of a pixel differs from that of the second pixel of the pixel, the polarities of the adjacent first pixels differ from each other and those of the adjacent second pixels differ from each other, and a polarity signal is inverted when switching is performed between first and second sub-frames.

FIG. 17





EUROPEAN SEARCH REPORT

Application Number
EP 09 15 5833

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2005/174310 A1 (HUANG JIH-FONG [TW] ET AL) 11 August 2005 (2005-08-11) * paragraph [0028]; figures 2a,2b,2c *	1-5	INV. G09G3/36
A	US 2005/122441 A1 (SHIMOSHIKIRYOH FUMIKAZU [JP]) 9 June 2005 (2005-06-09) * figures 1,17 *	1-5	
A	US 2006/208984 A1 (KIM SANG-SOO [KR] ET AL) 21 September 2006 (2006-09-21) * figures 17a,17b,33 *	1-5	
A	JP 11 102174 A (TEXAS INSTRUMENTS JAPAN) 13 April 1999 (1999-04-13) * figure 8 *	1-5	
A,P	US 2008/074601 A1 (LEE BACK-WON [KR] ET AL) 27 March 2008 (2008-03-27) * figure 4 *	1-5	
E	US 2009/160879 A1 (TU MING-HUNG [TW] ET AL) 25 June 2009 (2009-06-25) * figure 8 *	1-5	TECHNICAL FIELDS SEARCHED (IPC)
			G09G
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		16 December 2010	Giancane, Iacopo
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-5

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-5

Liquid crystal display device comprising pixels having a multi-pixel structure, each pixel being constituted by a first pixel and a second pixel connected to two corresponding signal lines in a checkerboard manner, and a controller which controls a driving means in such a manner that the polarity of the first pixel of each of the pixels connected to the two corresponding signal lines differs from the polarity of the second pixel of the pixel, the polarities of the first pixels of adjacent pixels differ from each other, the polarities of the second pixels of adjacent pixels differ from each other.

2. claims: 6-8

Liquid crystal display having horizontal scanning lines divided into a plurality of areas, wherein a time period for performing an operation of writing at the first horizontal scanning line after switching is performed between a first sub-frame and a second sub-frame is set to be longer than a time period for performing the operation of writing at another horizontal scanning line.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 15 5833

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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专利名称(译)	液晶显示装置，液晶显示方法，显示控制装置和显示控制方法		
公开(公告)号	EP2105915A3	公开(公告)日	2011-05-18
申请号	EP2009155833	申请日	2009-03-23
[标]申请(专利权)人(译)	索尼公司		
申请(专利权)人(译)	索尼公司		
当前申请(专利权)人(译)	索尼公司		
[标]发明人	KAMADA TSUYOSHI SUZUKI TOSHIAKI NUKIYAMA KAZUHIRO		
发明人	KAMADA, TSUYOSHI SUZUKI, TOSHIAKI NUKIYAMA, KAZUHIRO		
IPC分类号	G09G3/36		
CPC分类号	G09G3/3611 G09G3/3614 G09G3/3648 G09G3/3666 G09G2300/0443 G09G2300/0447 G09G2310/0224 G09G2320/0204 G09G2320/0233 G09G2320/0247 G09G2320/0261 G09G2320/028 G09G2330/021 G09G2360/18		
优先权	2008075696 2008-03-24 JP 2008075697 2008-03-24 JP		
其他公开文献	EP2105915B1 EP2105915A2		
外部链接	Espacenet		

摘要(译)

一种LCD装置，包括显示单元，该显示单元包括具有多像素结构的像素；分别驱动扫描线和信号线的第一和第二驱动单元；图像获取单元和控制单元。每个像素包括第一和第二像素，并且像素的第一和第二像素以棋盘方式连接到两个对应的信号线。控制第一驱动单元以重复扫描奇数行的第一子帧和偶数行的第二子帧，并且控制第二驱动单元使得像素的第一像素的极性不同于在像素的第二像素的极性中，相邻的第一像素的极性彼此不同，并且相邻的第二像素的极性彼此不同，并且当在第一和第二子帧之间执行切换时，极性信号被反转。

