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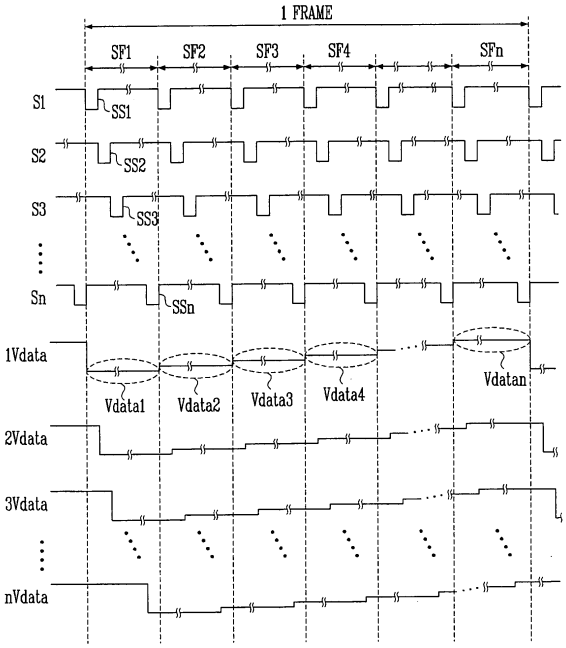
(54) Organic electroluminescence display and driving method thereof

(57) An organic electroluminescence display transmits a data driving voltage to a data driving unit to make different a voltage of the data signal outputted from the data driving unit, the data driving voltage being in a different level in every subframe according to the digital data signal, and displaying a desired grey level of an image by allowing a desired subframe to emit light according to the number of bits of the data signal, and a driving method thereof. An organic electroluminescence display includes a plurality of scan lines to transmit a scan signal; a plurality of data lines to transmit a digital data signal; and a plurality of pixels defined by a plurality of power supply lines to supply power, wherein the scan signal is transmitted to a plurality of subframes, and ON signals of the digital data signal have different voltages in a plurality of the subframes.

FIG. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 07 25 1945

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2003/214493 A1 (AKIMOTO HAJIME [JP] ET AL) 20 November 2003 (2003-11-20) * paragraph [0111] - paragraph [0124]; figures 13,14 * -----	1-3,6,7, 11-13 4,5	INV. G09G3/32
Y	US 5 917 471 A (CHOI SUN-JUNG [KR]) 29 June 1999 (1999-06-29) * column 3, line 1 - line 31; figure 5 * -----	4,5	
A	EP 0 762 374 A (MOTOROLA INC [US]) 12 March 1997 (1997-03-12) * column 3, line 1 - column 4, line 44; figures 1,2 * -----	1-7, 11-13	

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	14 January 2010	Gartlan, Michael

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

EPO FORM 1503 03.82 (P04C01)

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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:

1-7, 10-13

☐ 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).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 07 25 1945

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: 1-7, 10-13

   modify the device of D1 to reduce the complexitiy of the data driver by arranging number of subframes equal to the number of digital data bits

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2. claim: 8

   modify the device of D1 to reduce the parasitic effects of the power supply line whereby the pixel circuit further comprises a compensation circuit

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3. claims: 9,10

   modify the device of D1 to improve the performance of the pixel circuitry at the expense of pixel size/ transistor count by using an alternative pixel circuit comprising 5 transistors and one capacitor

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 25 1945

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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14-01-2010

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EPO FORM P0459

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

专利名称(译)	有机电致发光显示器及其驱动方法		
公开(公告)号	EP1865487A3	公开(公告)日	2010-05-26
申请号	EP2007251945	申请日	2007-05-11
[标]申请(专利权)人(译)	三星斯笛爱股份有限公司		
申请(专利权)人(译)	三星SDI CO.，LTD.		
当前申请(专利权)人(译)	三星移动显示器有限公司.		
[标]发明人	KIM HONG KWON		
发明人	KIM, HONG KWON		
IPC分类号	G09G3/32		
CPC分类号	G09G3/3233 G09G3/2011 G09G3/2025 G09G3/2081 G09G3/3241 G09G3/3291 G09G2320/0223 G09G2320/0233		
优先权	1020060050484 2006-06-05 KR		
其他公开文献	EP1865487A2		
外部链接	Espacenet		

摘要(译)

有机电致发光显示器将数据驱动电压传输至数据驱动单元，以使得从数据驱动单元输出的数据信号的电压不同，数据驱动电压根据数字数据信号在每个子帧中处于不同的电平，以及通过允许期望的子帧根据数据信号的位数发光来显示期望的图像灰度级及其驱动方法。有机电致发光显示器包括多条扫描线以传输扫描信号;多条数据线，用于传输数字数据信号;多个像素由多个电源线限定以供电，其中扫描信号被发送到多个子帧，并且数字数据信号的ON信号在多个子帧中具有不同的电压。

FIG. 5